Catalyst Project

Initial Study

prepared for

City of El Segundo
Development Services
350 Main Street
El Segundo, California 90245
Contact: Leila Carver, PTP, Contract Planner

prepared with the assistance of

Rincon Consultants, Inc.
250 East First Street, Suite 1400
Los Angeles, California 90012

May 2021

RINCON CONSULTANTS, INC.
Environmental Scientists | Planners | Engineers
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Initial Study

1. Project Title

Catalyst Project

2. Lead Agency Name and Address

City of El Segundo
Development Services Department, Planning Division
350 Main Street
El Segundo, California 90245

3. Contact Person Name and Information

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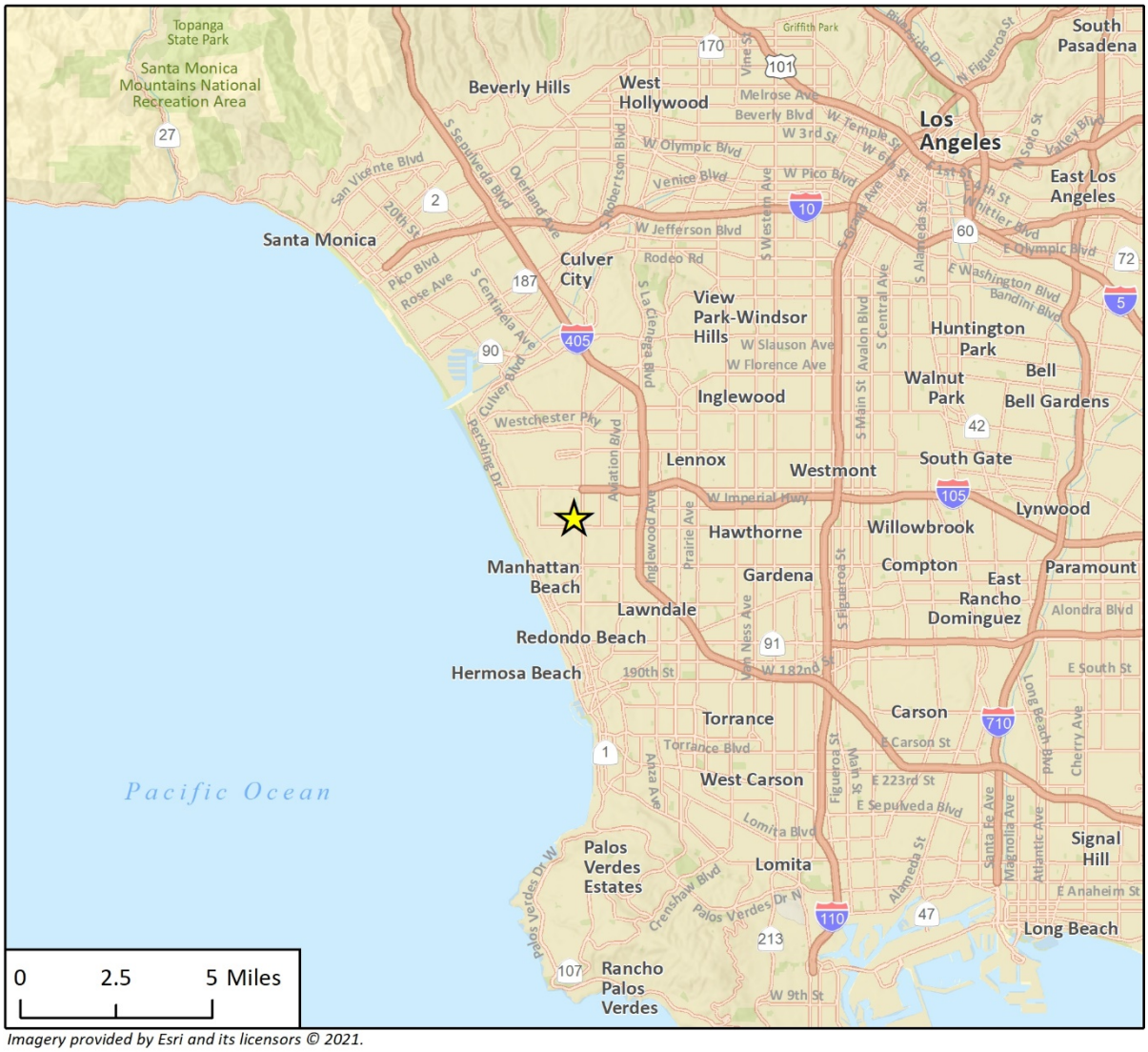
5. Project Location

The project occupies approximately 5.19 acres on two adjacent sites (hereafter referred to as “North Site” and “South Site”) in the City of El Segundo (City), California. The project sites are generally bound by Holly Avenue to the north, Washington Street to the east, Franklin Avenue to the south, and California Street and residential and commercial uses to the west. The North Site (north of E Grand St) is 3.24 acres and consists of six parcels identified by Assessor’s Parcel Numbers (APNs) 4139-008-010 through -012, -018, -046, -047. The South Site (south of E Grand St) is 1.96 acres and consists of APNs 4139-006-056, -057, and -061 through -064. The project is located within the Smoky Hollow Specific Plan (hereafter referred to as “SHSP” or “Specific Plan”) area and lies north of the Chevron Refinery. Figure 1 shows the project sites in their regional setting. Figure 2 illustrates the project sites in their local context and Figure 3 shows the boundaries of the SHSP area.

Figure 1 Regional Location



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Project Location

N

Figure 2 Project Location

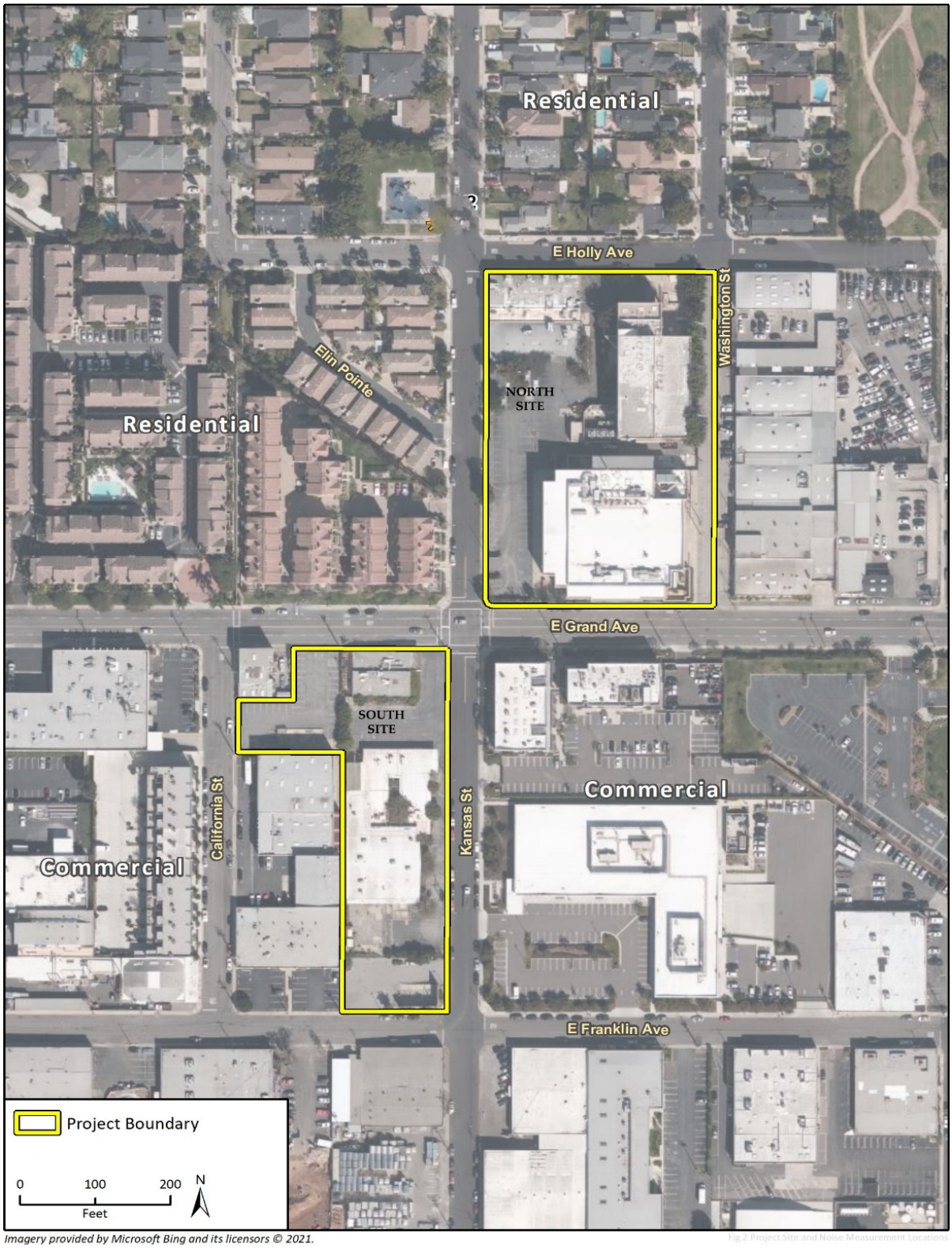

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Fig 2 Project Site and Noise Measurement Locations

Figure 3 Smoky Hollow Specific Plan Boundaries

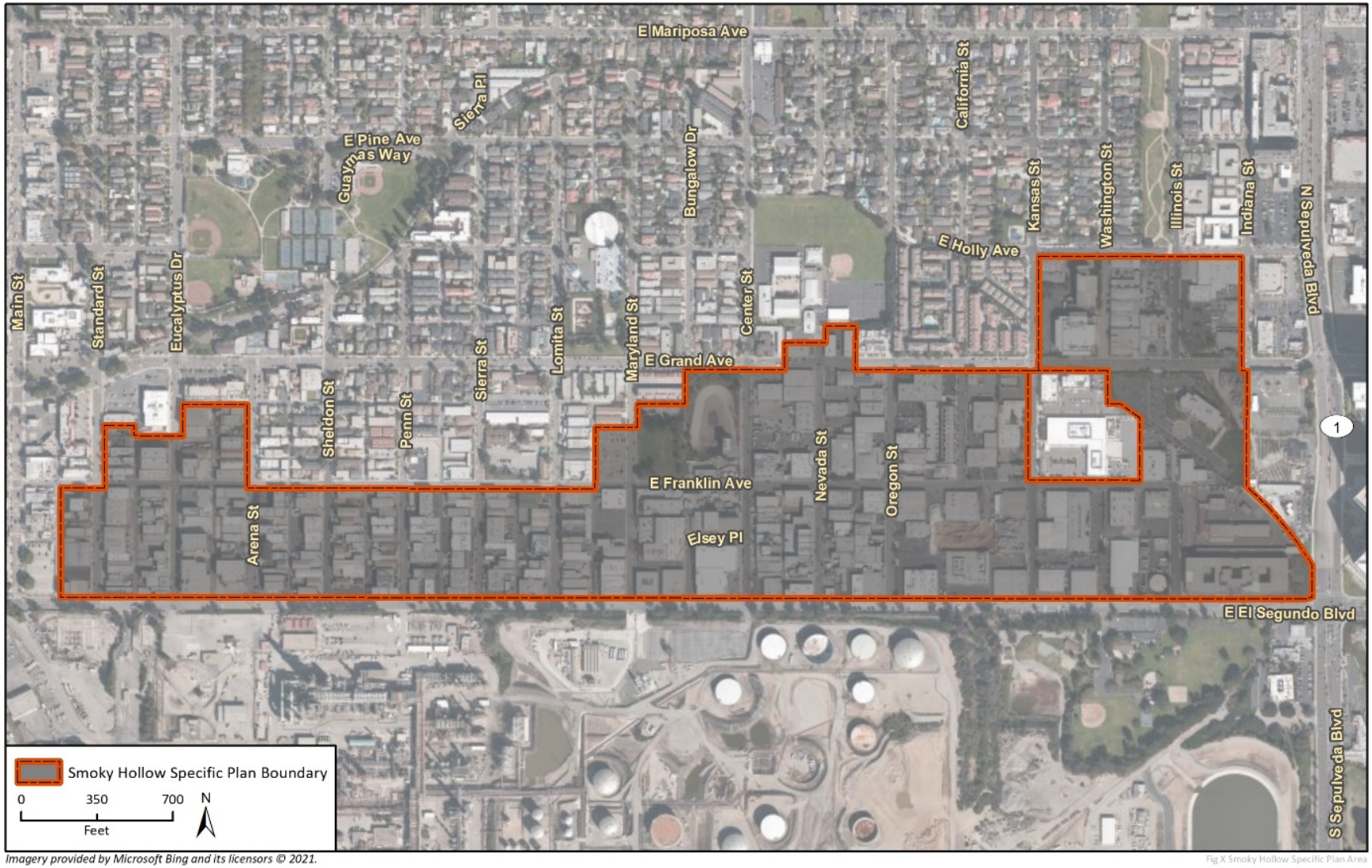

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Fig X Smoky Hollow Specific Plan Area

6. General Plan Designation and Zoning

The project sites have a General Plan land use designation of Smoky Hollow Specific Plan (SHSP). The project sites are zoned Smoky Hollow East (SH-E). The SH-E district provides a transitional land use area between higher-intensity office uses east of Sepulveda Boulevard and the smaller, single-parcel industrial and creative businesses of the western portion of the SHSP area. The SH-E zoning district provides for the development of incubator industrial, research, and technological uses; medium-sized light industrial and manufacturing; and creative office uses.

7. Environmental Setting

City of El Segundo

The City of El Segundo is located within the South Bay Region of the County of Los Angeles, approximately 20 miles southwest of downtown City of Los Angeles. The Los Angeles International Airport is located to the north of the City of El Segundo, the Los Angeles County unincorporated community of Del Aire and the City of Hawthorne are located to the east, the City of Manhattan Beach is located to the south, and the Hyperion Water Reclamation Plant, Dockweiler Beach, and the Pacific Ocean are located to the west. Regional access to the City of El Segundo is provided via Interstate 105 (I-105; Imperial Highway), I-405 (San Diego Freeway), and Sepulveda Boulevard/Pacific Coast Highway (PCH).

The City is approximately 5.5 square miles in size and is an urban community with a broad mix of land uses, including housing, commercial, office, industrial, open space/recreation, and public serving uses. The City of El Segundo is primarily built out and is typically flat with most elevations in that area ranging from zero feet above mean sea level (amsl) at the beach to about 170 feet amsl inland.

Project Sites

The project sites are located approximately 1.8 miles east of the Pacific Ocean and situated within a coastal area referred to as the Western Los Angeles Basin (Basin). The Basin is characterized by an extensive coastal belt of non-migrating dunes and wind-blown sand, which is referred to as the El Segundo Sand Hills (Sand Hills). The Sand Hills, located at, and in the vicinity of the project sites, are made up of stabilized dunes that, prior to development, had crests ranging from 85 to 185 feet amsl. The Sand Hills have since been developed, but old sand hill soils remain beneath the surface of project sites and their vicinity.

The proposed project is located on two adjacent sites, the North Site on the northeast corner of the intersection of Grand Avenue and Kansas Street and the South Site on the southwest corner of the same intersection. The North Site gently slopes to the west, with elevations ranging from 102 to 119 feet amsl in the western portion of the site and elevations from 115 to 123 feet amsl in the eastern portion of the site. The North Site is currently developed with three industrial buildings of one to three stories in height totaling approximately 99,029 square feet (sf). The North Site also contains an approximately 25,000-sf surface parking lot (refer to Figure 2). The North Site has a number of trees along the perimeter of the site, as well as ornamental trees and vegetation in the parking area and

around project site buildings. Buildings on the North Site were formerly used for semiconductor manufacturing, an electrical laboratory, and maintenance and parts repair.

The South Site generally slopes to the south, with elevations ranging from 111 feet amsl in the southeastern portion of the site to 135 feet amsl in the northwest. The South Site consists of two single-story industrial buildings totaling approximately 22,903 sf and 38,700 sf of surface parking/vacant paved areas. The South Site contains a few scattered trees near the perimeters of the project site parcel, as well as ornamental trees and vegetation around project site buildings. The entire South Site was formerly used for semiconductor manufacturing and research and development.

A Site Characterization Report was prepared by ERM-West, Inc. (ERM) for the project sites, at the request of the California Department of Toxic Substances Control (DTSC) (see Appendix C). The Site Characterization Report contains a history of the sites' uses, summaries of the Phase I and Phase II Environmental Site Assessments (ESAs) and other investigations completed, remedial actions completed to date, and regulatory oversight and actions related to the former industrial uses. According to the Site Characterization Report, the North Site was formerly occupied by a semiconductor manufacturing facility that included a clarifier, wastewater treatment system, 10,000-gallon diesel underground storage tank (UST), 6,000-gallon wastewater UST, and 6,000-gallon waste solvent UST. The USTs, clarifier, and wastewater treatment system were removed from the North Site in 1998 and a Tank Closure Certification was obtained indicating that no further action was required. The North Site also contained a maintenance and parts repair building and a railroad line was present in the southwestern portion until the early 1980s.

The South Site was formerly occupied by a semiconductor manufacturing facility that included a 3,000-gallon UST that stored tetrachloroethylene (PCE) near the southwest corner of the building that is proposed to be demolished. The PCE UST was removed in 1984 and a PCE leak was detected. Soil vapor extraction was completed throughout the 1990s, and in 1997 the South Site received a case closure letter from the Los Angeles Regional Water Quality Control Board (LARWQCB). In addition, the South Site formerly contained aboveground storage tanks (ASTs) that stored liquid nitrogen and hydrogen and a railroad. The project is also located in an area with historical use as an oil field, and one historical oil well that was plugged and abandoned in 1948, was located in the central portion of the North Site.

The Site Characterization Report concluded that there are residual volatile organic compounds (VOCs) present in shallow soil vapor near the former PCE UST on the South Site. However, the VOCs detected in soils throughout the rest of the site appear to be sourced from contaminated groundwater flowing below the site, and/or from contaminated soil vapor originating from nearby properties with reported concentrations at levels significantly greater than those detected on the South Site. Based on the results of indoor air quality sampling completed in the existing buildings on the South Site, soil contamination does not pose a substantial health risk to commercial occupants. The Site Characterization Report recommended the preparation of a Soil Management Plan (SMP) approved by DTSC that would include provisions for the proper handling of soils during construction; the installation of soil vapor barriers in the proposed new structures; soil venting along the northern boundary of the North Site as needed; two rounds of post-development indoor air quality sampling within the new buildings; and, implementation of a land use covenant (LUC) that would restrict the site to commercial and industrial uses and would require annual inspections by DTSC to ensure compliance. In March 2020, DTSC approved the proposed SMP and in June 2020, DTSC approved the Site Characterization Report and remedy selection (the proposed LUC) for the project. The LUC is being prepared by DTSC

and will be signed by the property owner and DTSC and recorded at the Los Angeles County Recorder's Office upon completion.

Surrounding Land Uses

As shown on Figure 2, the site is in an urbanized area and is surrounded by commercial residential and industrial development. Detailed descriptions of the land uses adjacent to North Site and South Site are provided below.

North Site

- **North.** To the north of the North Site, immediately across Holly Avenue, is a single-family residential neighborhood consisting of one- to two-story homes, as well as a small park, Kansas Park that contains a playground. Freedom Park, a linear park with walking trails, is located to the northeast of the North Site, across Holly Avenue.
- **East.** To the east of the North Site, immediately across Washington Street is commercial development, which includes automotive repair, scooter and motorbike sales, and other similar uses.
- **South.** To the south of the North Site, immediately across East Grand Avenue, is a commercial complex.
- **West.** To the west of the North Site, across Kansas Street is a multifamily residential complex (also located to the north of the South Site).

South Site

- **North.** Located to the north of the South Site, immediately across East Grand Avenue, is a multifamily residential complex.
- **East.** To the east of the South Site, immediately across Kansas Street, is an office complex that includes private and government office buildings.
- **South.** To the south of the South Site, across East Franklin Avenue, is an office/commercial complex, beyond which the Chevron Park and the Chevron Refinery are located.
- **West.** To the west of the South Site, across California Street, is a retail and office complex.

8. Project Description

Project Characteristics

North Site

The proposed project would involve demolition of two of the existing structures on the project site. The Grand Building, located at 1521 Grand Avenue on the North Site, which is a two-story concrete and steel building, would be preserved. The proposed project includes three buildings on the North Site: the Grand Building, one new office building, and a parking garage. The proposed activities on the North Site would include:

- Construction of a 38,101-sf addition to the Grand Building that would be structurally preserved in place, for a total building area of 86,757 sf. The two-story (with one subterranean level) Grand Building would have a maximum height of approximately 34 feet from grade to the top of the parapet.

- Demolition of an existing three-story, tilt-up concrete building, and a one-story concrete building, and replacement with a new four-story office building totaling 62,953 sf with a proposed height of 50 feet and 7-inches[1] from the average grade to the top of the parapet, including a rooftop ("Holly Building").
- Construction of a new six-story, aboveground parking structure totaling 156,681 sf with 474 parking spaces. The parking structure would be 57 feet and 4-inches in height from the average grade plan to the top of the parapet.

The proposed site plan for the North Site is provided in Figure 4.

South Site

Proposed development on the South Site includes one office building and an aboveground parking garage. The proposed activities on the South Site would include:

- Demolition of all existing structures onsite.
- Construction of a new three-story office building totaling 93,507 sf with a maximum height of approximately 45 feet and 7-inches to the top of the parapet.
- Construction of a new six-story parking structure totaling 130,684 sf with 384 parking spaces.
- Construction of an 886-sf café on the ground floor of the proposed parking garage (located at the northwest corner of Franklin Avenue and Kansas Street) with approximately 16 outdoor dining seats on the east side of the café.

Figure 5 illustrates the proposed site plan for the South Site. Table 1 provides a summary of the proposed project.

Architecture, Open Space, and Landscaping

The proposed architecture of the proposed new buildings would reflect an industrial aesthetic through exposed steel structure and robust raw materials, such as weathered metal panel and polished concrete block. Faceted metal surfaces would fetter across a suspended façade as an abstracted reference to the articulated flaps of an aircraft's wing. In addition, the project would include two painted murals on the North Site and two painted murals on the South Site.

The proposed project would add 27,429 sf of new landscaping consisting of drought-tolerant and California native plant species (see Figure 6 and Figure 7). The project would optimize the use of the site to increase landscaping on the site and provide 27,357 sf of private open space for office tenants in rooftop patios and 55,101 sf of public open space including outdoor plazas and pedestrian walkways with benches and trees to provide shade. These open space areas would be equipped with complimentary Wi-Fi to enhance digital connectivity in the City. The project also proposes to improve the pedestrian environment by adding decorative crosswalks with enhanced paving material at the Kansas Street/Grand Avenue and Franklin Avenue/Kansas Street crosswalks.

[1] Current development standards allow a maximum building height of 50 feet with a proposed Community Benefit Plan (height can exceed by 5 feet for top of parapet)

Table 1 Project Summary

Project Site	
North Site	140,926 sf (3.24 acres)
South Site	85,111 sf (1.95 acres)
Total	**226,037 sf (5.2 acres)**
Existing Development and Proposed Demolition	
North Site	99,029 sf
South Site	22,903 sf
Total	**121,932 sf**
Total to be demolished	**73,276 sf**
Proposed Buildings and FAR	
North Site Offices	101,054 sf (new construction) 48,656 sf (existing building to remain)
South Site Offices	93,507 sf
South Site Café	886 sf
North Site Parking Structure	156,681 sf
South Site Parking Structure	129,798 sf
New Construction	**481,926 sf**
Total Development	**530,582 sf**
North Site FAR[1]	1.06
South Site FAR[1]	1.11
Total Site FAR[1]	**1.08**
Maximum Building Heights[2]	
North Site	50 feet and 7-inches
South Site	45 feet and 7-inches
Landscaping, Open Space, and Parking	
North Site Parking	474 spaces
South Site Parking	384 spaces
Total Parking	**858 spaces**
Landscape Area	27,429 sf (12 percent of total site area)
Private Open Space	27,357 sf
Public Open Space	55,101 sf
Total Open Space[3]	**82,458 sf**

sf: square feet

[1] FAR includes the office and café uses but does not include the parking structures.

[2] Above the average grade to top of parapet per ESMC Section 15-1-6

[3] Open space includes both pedestrian hardscape and planting.

Figure 4 North Site Proposed Site Plan

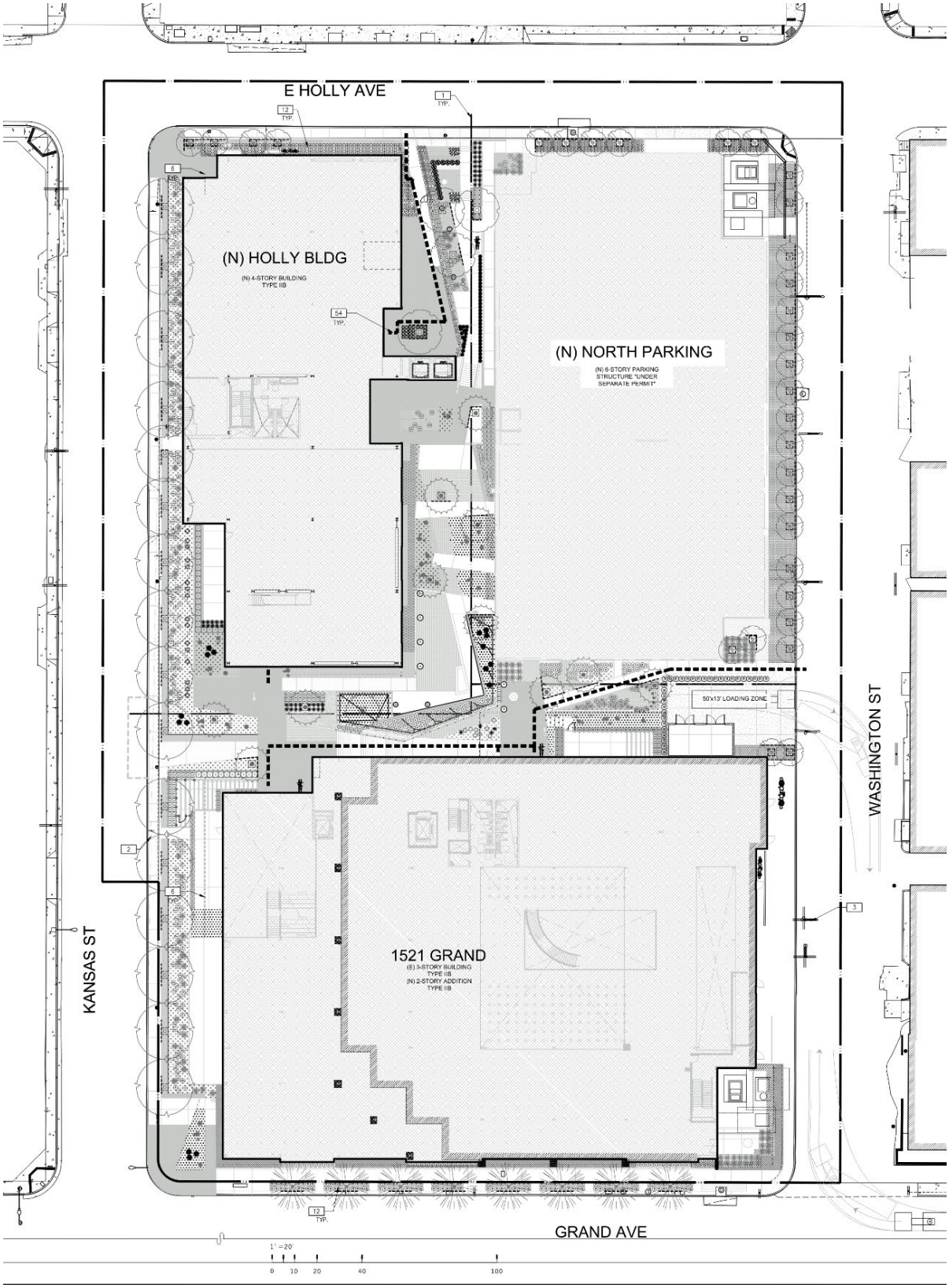
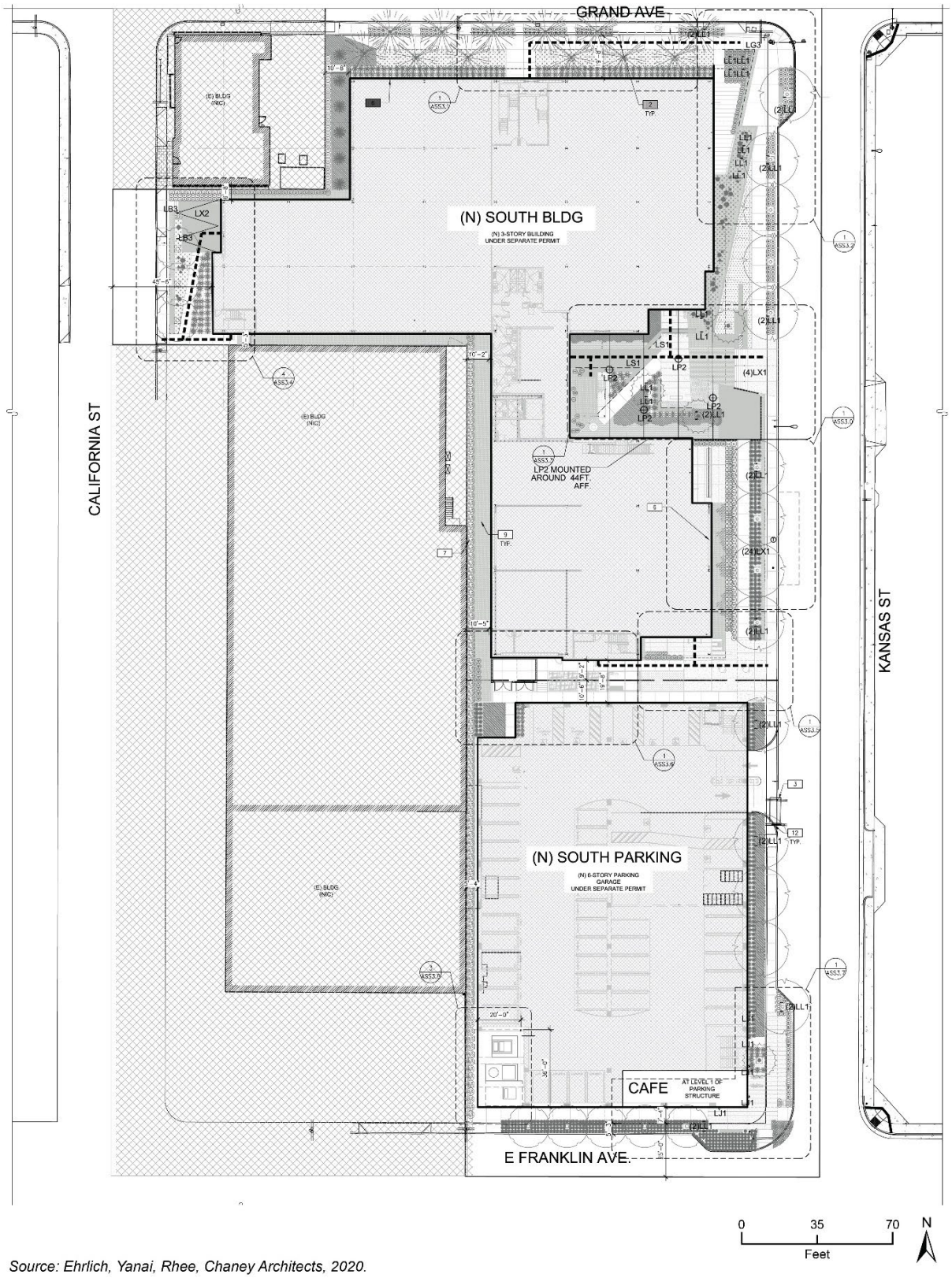


Figure 5 South Site Proposed Site Plan



Source: Ehrlich, Yanai, Rhee, Chaney Architects, 2020.

Figure 6 North Site Conceptual Landscaping Plan

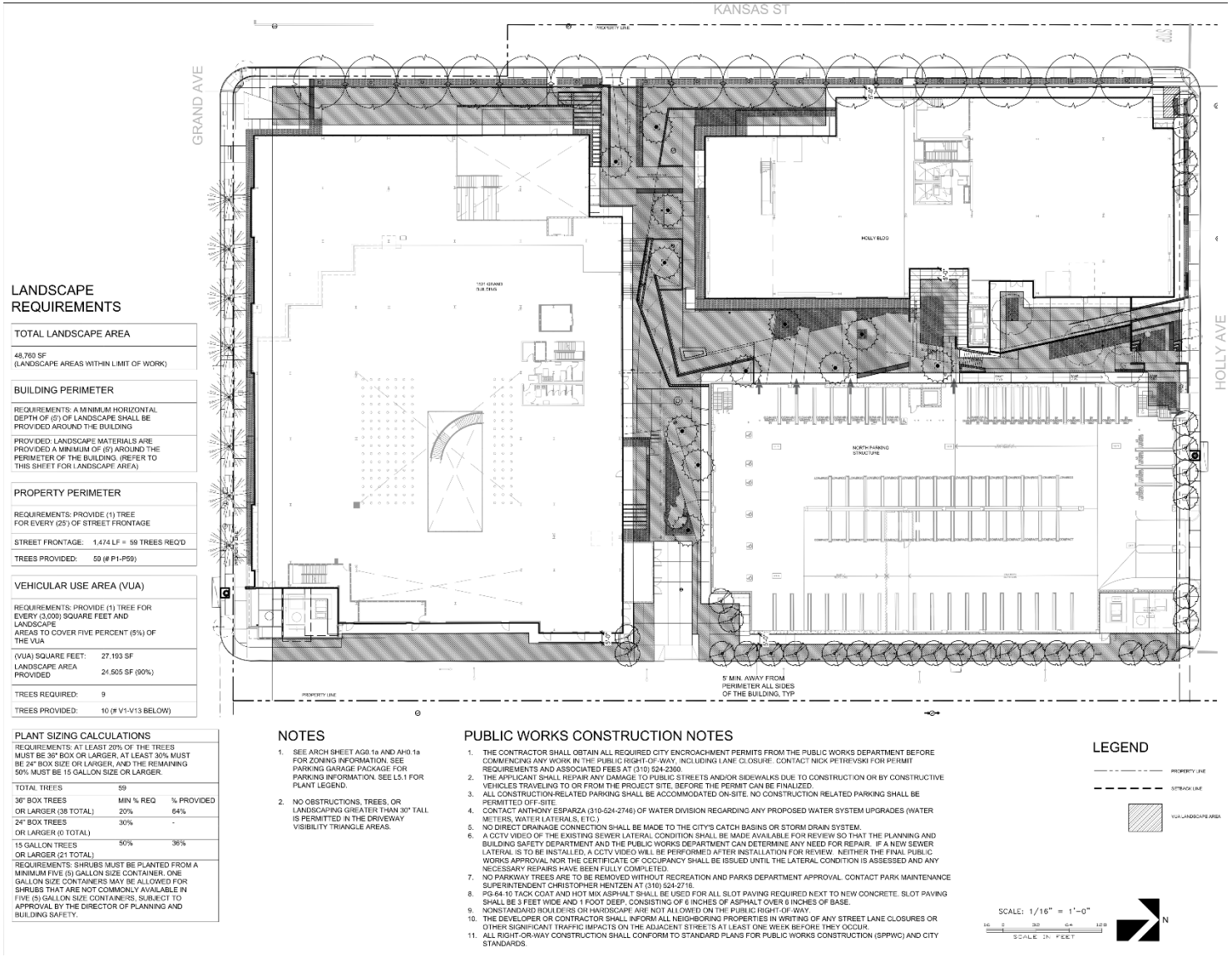
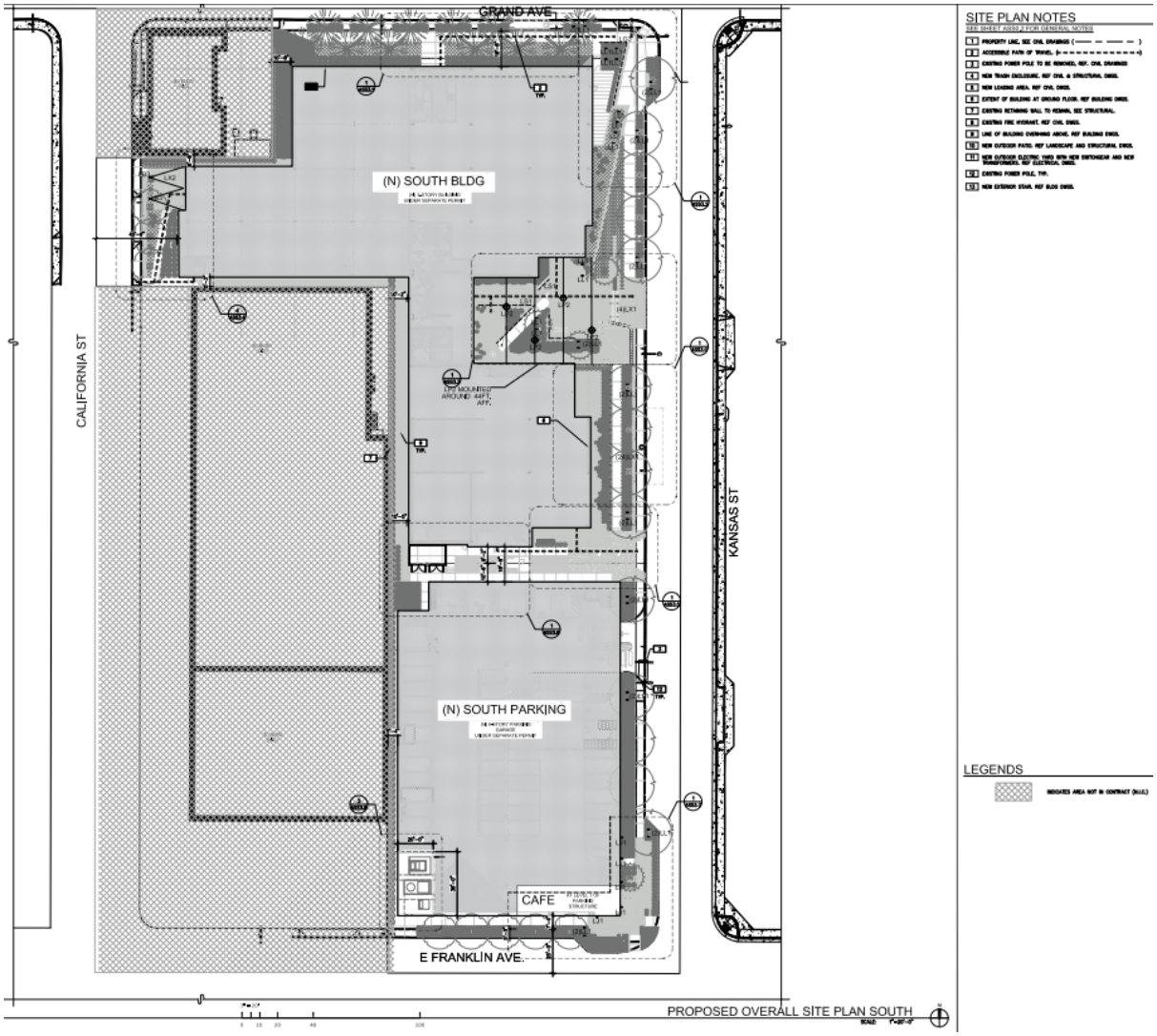


Figure 7 South Site Conceptual Landscaping Plan



Site Access and Parking

Vehicular access to the North Site is anticipated to be provided by East Holly Avenue, and 474 parking spaces would be provided in the proposed North Site parking structure. Truck and delivery vehicle access to the North Site is anticipated to be provided by Washington Street, a private street. Additional site access studies for the North Site are ongoing, and the North Site access would be confirmed and further described in the Subsequent Environmental Impact Report (EIR) for the project. Vehicular access, including truck and delivery vehicles, to the South Site would be provided by Kansas Street, and 384 parking spaces would be provided in the South Site parking structure.

The project would also include 54 electric vehicle (EV) charging stations within the parking structures for both project sites, as well as bicycle parking spaces on both sites. The aboveground parking structures would be designated for the use of office tenants during work hours but would become free public parking in the evenings and on weekends.

The project sites are also accessible via Beach Cities Transit line 109, which runs along Grand Avenue and has bus stops located at the intersection of Grand Avenue and Kansas Street. Pedestrian access to the North Site would be provided via existing sidewalks along East Holly Avenue, Kansas Street, and Grand Avenue. Pedestrian access to the South Site would be provided by existing sidewalks along California Street, Kansas Street, and Grand Avenue to the South Site.

Utilities and Infrastructure Improvements

The project is located in a portion of the City's developed area where utilities and public infrastructure are already in place. The applicant is proposing to underground all low voltage utilities lines between Franklin Avenue and Grand Avenue for the South Site and underground all low voltage utility lines on Grand Avenue, Holly Avenue and Kansas Street for the North Site so that the visual character of the area would not be disrupted by overhead utility lines. The project will also include low-impact development and best management practices (BMP) features for stormwater retention on the site, including groundwater infiltration basins.

Sustainability Features

All buildings proposed by the project would exceed the 2019 California Building Energy Efficiency Standards (Title 24) by 7.2 to 12.4 percent. Energy efficiency features would include highly efficiency heating, ventilation, and cooling (HVAC) systems, efficient light-emitting diode (LED) lighting, and expansive windows to allow for natural lighting. The project would include low flow plumbing fixtures that would reduce indoor water consumption by approximately 20 percent, as well as drought tolerant landscaping and water efficient landscaping irrigation in compliance with the California Green Building Standards Code (CALGreen). The inclusion of 54 EV charging spaces and bicycle parking spaces to encourage the use of more sustainable modes of travel for accessing the project site.

Project Construction

Construction of the North Site and South Site are anticipated to commence in November 2021 and December 2021, respectively. Construction activities on each site would last approximately 21 months, ending in July 2023 and August 2023. Grading of the North Site is estimated to involve 5,965 cubic yards of cut and 3,210 cubic yards of fill, resulting in

2,755 cubic yards of soil export. Grading of the South Site is anticipated to involve 11,385 cubic yards of cut and 2,130 cubic yards of fill, resulting in 3,830 cubic yards of soil export (the remainder 5,425 cubic yards for export would be kept onsite for precise grading). In accordance with the recommendations of the Preliminary Geotechnical Investigation Reports for the project sites, construction activities would include removal and recompaction of existing artificial fill in the upper four to seven feet of soils. Maximum excavations across the project sites would be 12.5 feet below existing grade. The proposed construction haul routes are shown in Figure 8. Construction staging and worker parking would be provided on the project site, and along Washington Avenue. A traffic control plan would be submitted to the City that would regulate working parking, construction staging, and roadway improvements during project construction. In accordance with the Construction General Permit (Order No. 2009-0009-DWQ, as amended by 2010-0014-DWQ and 2012-0006-DWQ), the proposed project would implement a Storm Water Pollution Prevention Plan (SWPPP) that would include the use of best management practices (BMPs) during project demolition, grading, and construction.

Community Benefits Plan

The proposed project involves the redevelopment of two adjacent sites for an office development including construction of three office buildings, two parking garages, and an outdoor café. The proposed project requests to deviate from the building height and density development standards contained in the SHSP. Due to the requested deviations, the proposed project requires site plan approval and a Community Benefits Plan (CBP) to provide additional or enhanced amenities. The project requests the following for a CBP:

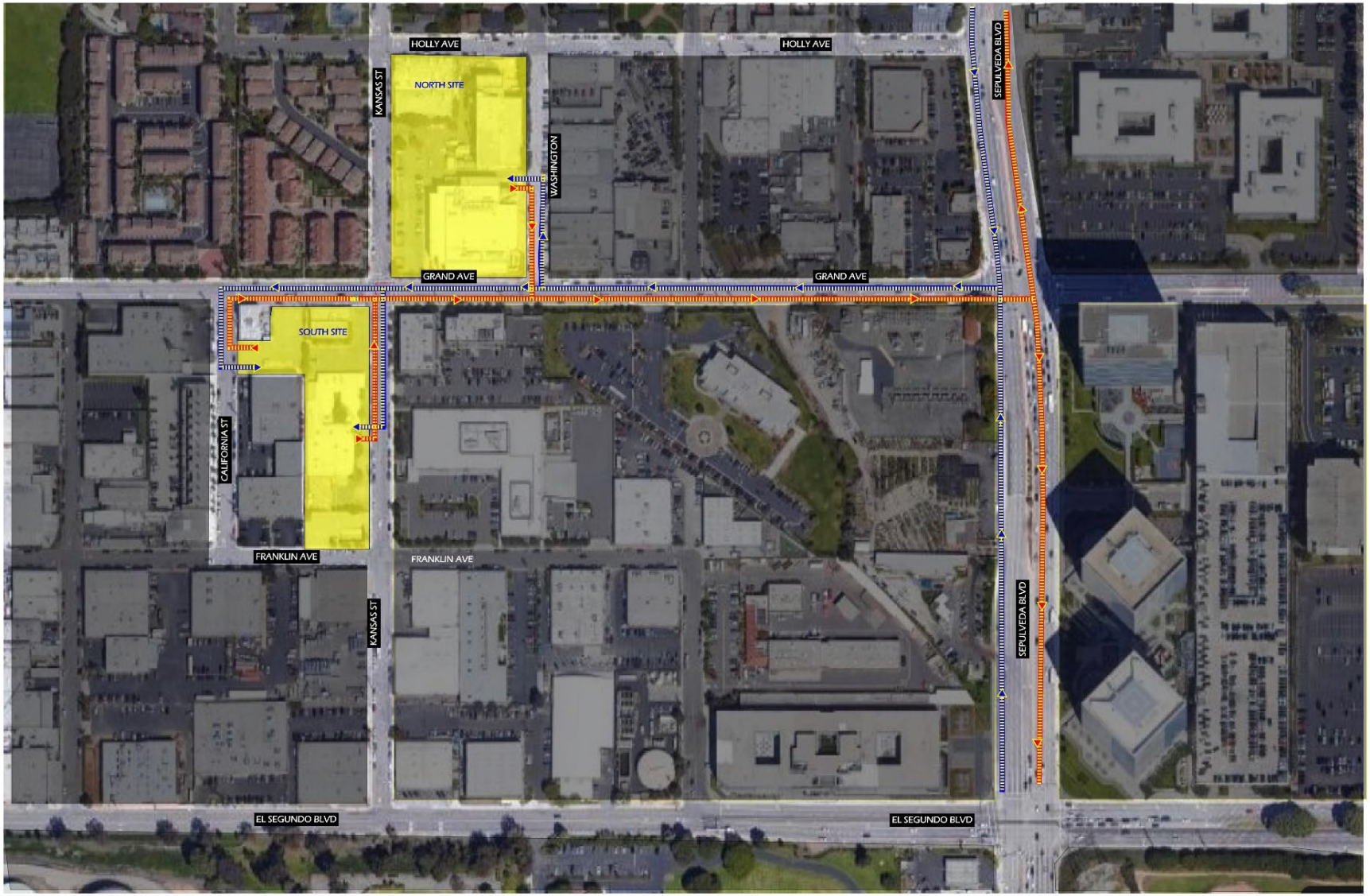
- **Additional Building Height.** Proposed building heights of up to 50 feet would exceed the SHSP permitted height of 35 feet.
- **Additional Building Density.** The proposed 1.06 floor area ratio (FAR) (an additional 8,784 sf) on the North Site and 1.11 FAR (an additional 99,282 sf) on the South Site exceeds the SHSP permitted FAR of 1.0.

In exchange for the above deviations, the proposed project offers the following community benefits and improvements, at the applicant's expense, as required by SHSP Section 4.5.2:

- **Public Art.** The applicant proposes two painted murals on the South Site, along the eastern portion of the site along Kansas Street. Specifically, one at the Café and the other on the façade of the South building. The applicant also proposes two painted murals on the North Site, one proposed along the northern portion of the site along Holly Avenue on the northern parking structure, and the other on the east elevation of the Holly building on the elevator tower. A resolution of approval is required and would be reviewed by the City's Arts Committee prior to installation. The proposed painted murals are provided as a community benefit in addition to the requirements of the Cultural Arts Fee (Cultural Development Program) established by City Council Ordinance 1594.
- **Compliance with Specific Plan Design Guidelines.** Although the proposed project's compliance with the design guidelines is voluntary, the project itself has a significant impact on the appearance of individual buildings and on the character of Smoky Hollow. The Specific Plan requires that the project must provide an exemplary project and/or streetscape design. In addition, the proposed community benefit must not principally benefit the project or occupants of the project to qualify as a community benefit. As a result, while the project design complies with 29 of the 32 design guidelines, it can only take partial credit as a community benefit because it benefits the project as well as the district or the neighborhood.

- **Public Bicycle Parking.** Both long and short-term bicycle parking is proposed to be provided within the two parking structures. Signage would be required indicating public bicycle parking is available.
- **Provision of Public Wi-Fi in Public and Common Areas.** Provision of free Wi-Fi is a benefit to not only the tenants using the buildings and their guests, but also the community, as it provides an open-air place to work and collaborate online. The applicant has agreed to provide public Wi-Fi in both the public and common areas of the project, enhancing the digital connectivity of the sites.
- **Provision of Street Furniture and Public Gathering Spaces.** The proposed outdoor amenities include a combination of public and private spaces on both sites, including pedestrian plazas, outdoor meeting spaces, and a private rooftop deck for building tenants. Outdoor plazas, interconnecting areas and areas adjacent to pedestrian walkways are intended to be public space, and outdoor public benches are proposed on the two main corners of the sites. The outdoor café area would provide outdoor seating and public gathering space, including outdoor seating.
- **Undergrounding of Utilities.** The applicant has decided to move all low voltage above ground utilities below ground on the east of the South Site, and south, west and north of the North Site. Undergrounding utilities improves service reliability, increases public safety, and enhances the aesthetics of the Smoky Hollow area.
- **Public Café.** The applicant is proposing to provide an 886 square foot public café and associated outdoor dining area on the ground floor of the South Site parking structure. The outdoor café area along Kansas Street would provide approximately 338 square feet of outdoor dining space including street furniture proposed for the corner of Kansas Street and East Franklin Avenue.
- **Decorative Crosswalks.** The North Site and South Site are located at opposite street corners from each other and would be connected by a proposed decorative crosswalk that faces the southwestern corner of the Grand Building and the northeast corner of the building on the South Site. Each corner incorporates a variety of enhanced paving materials and planting that leads to the access of each building onsite. The applicant also proposes a decorative crosswalk at the intersection of Franklin Avenue and Kansas Street.
- **Additional Public Parking.** 474 parking spots would be provided in the North site parking structure, which is 100 spaces in excess of the 374 parking spaces required per the SHSP. In the South Site parking structure 384 parking spots would be provided, which is 150 in excess of the 234 parking spaces required per the SHSP. Parking in Smoky Hollow is required at 2.5 spots per 1,000 sf. This additional benefit of public parking would alleviate impacted parking issues found throughout Smoky Hollow.

Figure 8 Construction Site Access and Hauling Routes



9. Regulatory Setting

The following presents a discussion of other plans and documents that affect the project sites.

Smoky Hollow Specific Plan

The proposed project is located in the central portion of the City of El Segundo, within the SHSP, which extends east to west and is bounded by residential neighborhoods to the north, Indiana Street and Sepulveda Boulevard to the east, the Chevron oil refinery (and El Segundo Boulevard) to the south, and downtown El Segundo to the west. El Segundo Boulevard and Franklin Avenue run east/west the length of the SHSP area (see Figure 3). The Specific Plan area covers approximately 0.2 square mile (120 acres), or just over three percent of the City's total area. With a variety of lot sizes located on small streets, the land use pattern and character of the SHSP area are largely shaped by the original industrial uses that developed during the mid-20th century to serve the Los Angeles International Airport, aerospace/defense, and nearby refinery industries.

The SHSP is a "specific plan" under State planning law and is one of several policy and regulatory tools used by the City of El Segundo to implement the City's General Plan. The SHSP implements the General Plan through the establishment of more detailed policies, regulations, and actions specifically focused on the SHSP area, and generally provides for the reuse and focused redevelopment of properties within the 120-acre plan area at higher intensities. It also allows for a greater proportion of land uses related to office and research and development compared to the existing light industrial uses. The SHSP also provides for improvements to the circulation system, increased on street parking, streetscape improvements, and enhanced development standards and design guidelines (City of El Segundo 2018a).

Smoky Hollow Specific Plan Environmental Impact Report

The SHSP Final EIR was adopted in August 2018 (State Clearinghouse [SCH] No. 2017031071) in accordance with Sections 15086, 15088, 15089 and 15132 of the California Environmental Quality Act (CEQA) Guidelines. The EIR adopted a Mitigation Measure Monitoring and Reporting Program to mitigate any impacts from the implementation of the SHSP (City of El Segundo 2018c). The EIR concluded that there were potential impacts that required mitigation for Biological Resources, Cultural Resources, and Transportation. The mitigation measures adopted for the SHSP are shown in Table 2 and apply to every project within the SHSP. Therefore, the proposed project would be required to comply with the previously adopted mitigation measures as project design features and would incorporate them by reference.

Table 2 Smoky Hollow Specific Plan Mitigation Measures

Identified Impact	Mitigation Measure
Biological Resources	
Potential impacts on special-status species, nesting birds, and migratory birds.	**BIO MM 7-1.** To avoid impacts to nesting birds, construction activities and construction noise should occur outside the avian nesting season (prior to February 1 or after September 1). If construction and construction noise occurs within the avian nesting season (during the period from February 1 to September 1), areas within 100 feet of a development site shall be thoroughly surveyed for the presence of nests by a qualified biologist no more than five days before commencement of any vegetation removal. If it is determined that the Project Site is occupied by nesting birds covered under the Migratory Bird Treaty Act, mitigation measure 7-2 shall apply.
Potential impacts on special-status species, nesting birds, and migratory birds.	**BIO MM 7-2.** If pre-construction nesting bird surveys result in the location of active nests, no grading, vegetation removal, or heavy equipment activity shall take place within an appropriate setback from occupied nests as determined by a qualified biologist. Protective measures (e.g., established setbacks) shall be required to ensure compliance with the Migratory Bird Treaty Act and California Fish and Game Code requirements. The qualified biologist shall serve as a construction monitor during those periods when construction activities occur near active nest areas to ensure that no inadvertent impacts occur. A report of the findings, prepared by a qualified biologist, shall be submitted to the CDFW prior to construction-related activities that have the potential to disturb any active nests during the nesting season.
Cultural Resources, Paleontological Resources, and Tribal Cultural Resources	
Adverse change in the significance of a historic resource	**CULT MM 8-1.** Prior to issuing any permit for demolition or redevelopment of a building in the Specific Plan area that is 50 years old or greater, an assessment of the building must take place by a person who meets the *Secretary of the Interior's Professional Qualifications and Standards* for history, architectural history, architecture, or historic architecture to assess if it meets the criteria for inclusion on a historic register. If a building meets the criteria for inclusion on the California or National registers, the City will have to prepare and file a completed DPR 523 form with the South Central Coastal Information Center and the California Office of Historic Preservation, and the building will be treated as a historic resource under CEQA, subject to all regulations that relate to the treatment of historic resources.
Adverse change in the significance of an archaeological, paleontological or tribal cultural resource	**CULT MM 8-2.** Prior to the commencement of grading or demolition of subsurface structures, a professional archaeologist who meets U.S. Secretary of the Interior's Professional Qualifications and Standards, shall conduct a brief archaeological and paleontological informational session for construction personnel. The training session may consist of an in-person meeting or a written handout describing: (1) how to identify archaeological and paleontological resources that may be encountered during earth-moving activities and (2) the procedures to be followed in such an event, including contact information for the appropriate entities if archaeological or paleontological resources are discovered.

Identified Impact	Mitigation Measure
Adverse change in the significance of an archaeological, paleontological or tribal cultural resource	**CULT MM 8-3.** In the event that archaeological or paleontological resources are unearthed during ground-disturbing activities, the ground- disturbing activities shall be halted or diverted away from the vicinity of the find so that the find can be evaluated. A buffer area of at least 50 feet shall be established around the find, where construction activities will not be allowed to continue until a qualified archaeologist or paleontologist has examined the newly discovered artifact(s) and has evaluated the area of the find. Work shall be allowed to continue outside the buffer area. If the archaeologist identifies the find as a tribal cultural resource or suspects it to be a tribal cultural resource, the City will contact the Native American Heritage Commission (NAHC) to report the discovery, and will contact local Native American tribal representatives as directed by the NAHC. Should the newly discovered artifact(s) be determined to be a tribal cultural resource, Native American construction monitoring will be initiated. The City shall coordinate with the archaeologist and tribal representative(s) to develop an appropriate treatment plan.
Transportation	
Conflict with measures of effectiveness for the performance of the circulation system	**MM TR 18-1.** Improvement to the impacted intersections will be performed as follows at the time the City determines that such improvements are needed to maintain desired levels of service: ▪ Sepulveda Boulevard/Grand Avenue: New right-turn overlap phases on all approaches. ▪ Sepulveda Boulevard/El Segundo Boulevard: Second eastbound left-turn lane new right-turn overlap phase at northbound approach. Prior to the issuance of a certificate of occupancy, individual development projects that would result in a net increase in vehicle trips, as determined by the City based on project-specific traffic studies, will be required to pay to the City of El Segundo a fair-share contribution for the above improvements. The City shall have the responsibility of ensuring that the improvements specified above will be constructed at that point in time necessary to avoid identified significant impacts.
Conflict with measures of effectiveness for the performance of the circulation system	**MM TR 18-2.** No fair-share funding agreements or mechanisms are in place or currently available that would allow the City to contribute to specific Caltrans projects in the vicinity of the plan area. As future development occurs within the Smoky Hollow Specific Plan that would trigger thresholds for additional CEQA analysis, the City will contact Caltrans to discuss traffic study requirements, mitigation, and possible fair-share funding contributions.

Source: City of El Segundo 2018c

10. Required Approvals

The City of El Segundo is the Lead Agency for the proposed project. As the Lead Agency, the City of El Segundo City Council has the ultimate authority to approve or deny the project. The proposed project would require the following approvals:

- Community Benefit Plan to permit exceptions to height and floor area ratio (FAR or intensity of site) base development standards per the Specific Plan.
- Site Plan Review to ensure that the project is consistent with the goals, policies and objectives of the general plan, the Specific Plan, and the El Segundo Municipal Code (ESMC).
- Vesting tentative tract maps for the purpose of commercial condominium, merger, and subdivision purposes.

No discretionary approvals would be required from any other agency.

11. Have California Native American tribes affiliated with the project area requested consultation pursuant to Public Resources Code Section 21080.3? If so, has had consultation been initiated?

On January 27, 2021, the City sent notification letters to representatives from the Gabrieleño Band of Mission Indians – Kizh Nation. The City received a response from Andy Salas, chairman of the Gabrieleño Band of Mission Indians – Kizh Nation. On March 24, 2021, the City participated in a conference call with Andy Salas and Matt Teutimez, representatives of Gabrieleño Band of Mission Indians – Kizh Nation, to commence the Assembly Bill (AB) 52 consultation process. The tribal consultation is currently ongoing.

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Environmental Factors Potentially Affected

This project would potentially affect the environmental factors checked below, involving at least one impact that is "Potentially Significant" or "Less than Significant with Mitigation Incorporated" as indicated by the checklist on the following pages.

■ Aesthetics	□ Agriculture and Forestry Resources	■ Air Quality
■ Biological Resources	■ Cultural Resources	■ Energy
■ Geology/Soils	■ Greenhouse Gas Emissions	■ Hazards & Hazardous Materials
■ Hydrology/Water Quality	■ Land Use/Planning	□ Mineral Resources
■ Noise	□ Population/Housing	□ Public Services
□ Recreation	■ Transportation	■ Tribal Cultural Resources
■ Utilities/Service Systems	□ Wildfire	■ Mandatory Findings of Significance

Determination

Based on this initial evaluation:

□ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

□ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions to the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

□ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

■ I find that the proposed project MAY have a "potentially significant impact" or "less than significant with mitigation incorporated" impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. A SUBSEQUENT ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potential significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Leila M Carver

Signature

5/12/21

Date

Leila Carver

Printed Name

Contract Planner

Title

Environmental Checklist

1 Aesthetics

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Except as provided in Public Resources Code Section 21099, would the project:				
a. Have a substantial adverse effect on a scenic vista?	☐	☐	☐	■
b. Substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	■
c. In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	■	☐	☐	☐
d. Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?	■	☐	☐	☐

a. Would the project have a substantial adverse effect on a scenic vista?

The SHSP EIR concluded that the SHSP area and vicinity contain no important scenic vistas and are largely urban scale developed land uses and neighborhoods. The SHSP EIR determined that implementation of the SHSP would have no significant impacts to scenic vistas and no mitigation was required (City of El Segundo 2018b). Furthermore, the El Segundo General Plan does not identify any designated scenic vistas within the City (City of El Segundo 1992).

The project sites, though within the jurisdiction of the SHSP, are located approximately 1.8 miles east of the coastline and scenic views of the Pacific Ocean are not available from the project area due to existing development within the project vicinity. The nearest scenic vista is located in the Palos Verdes Estates area, approximately 8.3 miles southwest of the project sites. The project sites are not visible from scenic vistas in Palos Verdes Estates. The proposed project involves construction of new office, café, and parking uses that

currently contains light industrial development. Though the project would increase development intensity and building heights compared to existing uses, there are no scenic vistas available in the vicinity of the project sites, and therefore the proposed project would not have no impacts to scenic vistas. Further analysis of this issue is not warranted.

NO IMPACT

b. Would the project substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

There are no roadways in the SHSP area that are designated or eligible for listing as a state scenic highway or locally designated scenic route according to the SHSP EIR. In addition, the SHSP area does not contain scenic resources (City of El Segundo 2018b).

The nearest officially designated state scenic highway, State Route 27, is located approximately 13.7 miles northwest of the project sites and the closest roadway eligible for designation as a state scenic highway is State Route 1 located approximately 6.1 miles northwest of the project sites (California Department of Transportation [Caltrans] 2021). The project sites are not visible from these scenic highways. The project is not nearby or visible from any state scenic highways Further, the projects sites do not contain rock outcroppings and are already developed with industrial buildings and appurtenant structures that were determined not to be historic by the Cultural Resources Evaluation prepared for the project (see Appendix A). Though the project site contains trees, and the proposed project would involve the removal and replacement of some trees on the site during construction, the project landscaping plan would provide for the replacement of trees on site to meet the City's Water Efficient Landscaping Ordinance (WELO). Therefore, the proposed project would have no impacts to scenic resources such as trees, rock outcroppings, and historic buildings within a state scenic highway and further analysis of this issue is not warranted.

NO IMPACT

c. Would the project, in non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

The SHSP area and vicinity are largely built out with industrial, office, commercial, and limited residential uses. The project includes redevelopment of two industrial sites within the SHSP area with new office, retail, and parking uses. The proposed development would exceed the SHSP permitted height and density standards and would increase development intensity on the project sites compared to existing uses.

Because implementation of the proposed project has the potential to change the overall scale and mass of development within the community and would exceed the permitted height and FAR for the site, project impacts related to zoning and other regulations governing scenic quality could potentially be significant and will be evaluated in detail in the Subsequent EIR.

POTENTIALLY SIGNIFICANT IMPACT

d. Would the project create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?

The SHSP area and vicinity currently have high ambient levels of night lighting for private property security and street lighting. The SHSP EIR found that lighting and glare would increase with implementation of the SHSP due to increased development within the plan area (City of El Segundo 2018b).

The proposed project sites are currently developed with industrial buildings and surface parking lots that include exterior build safety and security lighting, parking lot lighting, adjacent street lighting, and glass and metal building materials that could produce glare. Therefore, the project sites currently contribute to light and glare sources within the SHSP area. Further, implementation of the proposed project would increase development intensity compared to existing uses on the sites and would introduce new potential sources of light and glare that could adversely affect daytime or nighttime views in the area. Therefore, project impacts related to light and glare could potentially be significant and will be evaluated in detail in the Subsequent EIR.

POTENTIALLY SIGNIFICANT IMPACT

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2 Agriculture and Forestry Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	■
b. Conflict with existing zoning for agricultural use or a Williamson Act contract?	☐	☐	☐	■
c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)); timberland (as defined by Public Resources Code Section 4526); or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	☐	☐	☐	■
d. Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	■
e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	■

a. Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

b. Would the project conflict with existing zoning for agricultural use or a Williamson Act contract?

c. Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)); timberland (as defined by Public Resources Code Section 4526); or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?

d. Would the project result in the loss of forest land or conversion of forest land to non-forest use?

e. Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?

The following analysis discusses potential project impacts related to *Items a.* through *e.*, as listed above. The SHSP EIR determined that the SHSP area has no prime or other important farmland and would not have impacts to agricultural land or Williamson Act contracts (City of El Segundo 2018b). According to the Farmland Mapping and Monitoring Program of the California Resources Agency, there are no prime or other important farmland designations within City limits (City of El Segundo 2018b). The project sites and the surrounding area are fully urbanized and do not contain any Williamson Act contracted land. Therefore, the proposed project would not convert farmland to non-agricultural use, nor would it conflict with zoning for agricultural use or a Williamson Act contract.

The City does not have any land zoned as forest land or timberland or timberland zoned as Timberland Production. Maps produced by the Forest and Range Assessment Project indicate that the SHSP area is within an urban area with no forest resources. Therefore, the SHSP EIR determined that implementation of the SHSP would have no impact to forest land and no mitigation was required (City of El Segundo 2018b). Similarly, given its location, the proposed project would have no impacts related to forest resources. As described, above there are no agricultural- or forest-related resources in or near the project sites. Therefore, the proposed project would not involve changes to the environment that could result in the conversion of Farmland or forestland to non-farmland or non-forestland uses. The project would have no impact to these resources and further analysis of this issue is not warranted.

NO IMPACT

3 Air Quality

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Conflict with or obstruct implementation of the applicable air quality plan?	■	□	□	□
b. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	■	□	□	□
c. Expose sensitive receptors to substantial pollutant concentrations?	■	□	□	□
d. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	□	□	■	□

a. Would the project conflict with or obstruct implementation of the applicable air quality plan?

The SHSP EIR determined that buildout of the Specific Plan would not result in population or employment growth that would exceed the growth assumptions contained within the South Coast Air Quality Management District (SCAQMD) 2016 Air Quality Management Plan (AQMP), and would therefore not conflict with or obstruct the AQMP (City of El Segundo 2018b).

The proposed project involves the redevelopment of two sites with existing commercial/ industrial structures within the SHSP area. The project would include demolition of existing structures on the sites and construction of new office and café uses. The project includes the expansion of one existing office building and develop two new office buildings, one with a ground floor café, with two parking structures intended for the office building occupants. The proposed project therefore has the potential to increase employment opportunities within the City, which could result in indirect population growth that could conflict with the applicable air quality management plan. Therefore, this issue will be evaluated in detail in the Subsequent EIR.

POTENTIALLY SIGNIFICANT IMPACT

b. Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

c. Would the project expose sensitive receptors to substantial pollutant concentrations?

The following analysis describes potential impacts related to *Items b.* and *c.*, as listed above. The SHSP EIR concluded that buildout of the Specific Plan would not result in emissions of criteria pollutants during construction that would exceed the applicable SCAQMD thresholds, including the localized significance thresholds (LSTs) for impacts to sensitive receptors. Therefore, the SHSP EIR found that the Specific Plan would have less than significant construction-related impacts to air quality. In addition, the SHSP EIR determined that operational air pollutant emissions associated with buildout of the Specific Plan would not exceed the SCAQMD thresholds for criteria pollutants or the LSTs for impacts to sensitive receptors. Therefore, the SHSP was found to have less than significant impacts related to criteria pollutant emissions and the exposure of sensitive receptors to air pollutants (City of El Segundo 2018b).

The proposed project would include demolition of existing structures, expansion of one existing structure, and construction of two new office buildings and two aboveground parking structures. Construction activities would include demolition, grading, site preparation, building construction, paving, and architectural coating phases. This would result in emissions of criteria pollutants due to the use of heavy-duty construction equipment and fugitive dust generated during ground disturbing activities.

Project operation would involve office and café uses. Operation of the project would primarily result in criteria pollutant emissions from vehicle trips of employees and visitors traveling to the sites, as well as small quantities of emissions from landscaping equipment, energy use, and cleaning products. As there is a potential for construction and operation of the proposed project to emit criteria pollutants in excess of the applicable thresholds and expose sensitive receptors to pollutants, these issues will be evaluated in detail in the Subsequent EIR.

POTENTIALLY SIGNIFICANT IMPACT

d. Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

According to the SCAQMD *CEQA Air Quality Handbook*, land uses that are associated with odor complaints include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding (SCAQMD 1993). The SHSP EIR concluded that based on the types of proposed uses anticipated for the SHSP area, odor impacts would be less than significant, and no mitigation was required.

The construction and operation of the proposed office and cafe components of the project would not introduce any land uses or industrial operations that are associated with odor complaints. Any odor issues associated during construction of the proposed project would be temporary and occur during project construction activities only. Odors from office and café uses during project operation would occur primarily from food preparation activities and disposal of refuse. Odors from food preparation would be similar to odors from existing commercial, industrial, and residential uses surrounding the project sites. In addition, SCAQMD controls emissions from restaurant operations under Rule 1138, thus preventing objectionable odors from affecting surrounding land uses. With regard to refuse disposal, the office and café components of the proposed project would dispose of waste in appropriate trash containers, which would be covered and closed as required by the El Segundo Municipal Code. The proposed project would also comply with SCAQMD Rule 402, which prohibits the discharge of air contaminants that would cause injury, detriment,

nuisance, or annoyance to the public. Therefore, less than significant impacts associated with odors would result and further analysis of this issue is not warranted.

LESS THAN SIGNIFICANT IMPACT

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4 Biological Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	■	☐
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	■	☐
c. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	■	☐
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	■	☐
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	■	☐	☐	☐
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	■

a. Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

b. Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

c. Would the project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

The following analyzes potential impacts to *Items a.* through *d.*, as listed above. The SHSP EIR stated that the planning area is highly developed and does not support special-status species, riparian habitat or other sensitive habitats, wetlands, or migratory wildlife corridors or nursery sites (City of El Segundo 2018b). No suitable habitat for special-status species exists. The area is almost entirely paved and developed with buildings and streets, with vegetation limited to small areas occupied by street trees and public and private landscaped areas occupied by ornamental trees, shrubs, and lawns. The only water body is the concrete-lined flood control basin that does not support vegetation or habitat for special-status species. Furthermore, no established wildlife movement corridors or nursery sites occur in or near the SHSP area, and wildlife movement in the area is severely limited by urban development. Dense development and the Los Angeles International Airport are located to the north, the Chevron refinery is to the south, dense commercial and office development are to the east, and dense residential development to the west. Urban parks and schools in the vicinity have lawns and trees, but they are small and isolated from other vegetated areas by surrounding development (City of El Segundo 2018b).

Similarly, the project sites are fully developed, mostly paved, and do not support special-status species, riparian habitat, other sensitive habitats, wetlands, migratory wildlife corridors, or wildlife nursery sites. The nearest mapped wetland and riparian area is the Ballona Wetlands Ecological Reserve, located approximately 3.7 miles northwest of the project sites (U.S. Fish and Wildlife Service [USFWS] 2021a). The nearest mapped critical habitat is located approximately 1.8 miles west of the project sites along the Pacific coastline which provides habitat for the western snowy plover (*Charadrius alexandrines nivosus*; USFWS 2021b). Due to the distance between the project sites and designated wetlands and critical habitat, the proposed project activities would not affect these resources. Additionally, the project sites are not part of a migratory wildlife corridor and does not contain nursery habitat, nor is it located in proximity to any such areas. Therefore, the project would not have significant impacts to special-status species, sensitive habitats, wetlands, wildlife corridors, or nursery habitat.

However, all birds and their nests are protected by the federal Migratory Bird Treaty Act and/or the California Fish and Game Code. Construction of the proposed project could impact nesting birds if any are present during tree removal, trimming, and/or other construction activities that occur during the nesting season. The SHSP EIR concluded that with implementation of Mitigation Measures 7-1 and 7-2, impacts to nesting birds would be less than significant. As described in the Regulatory Setting, the proposed project would be required to include the SHSP EIR mitigation measures as project design features.

Compliance with these project design features would reduce potential impacts to migratory and nesting birds to less than significant levels, and further analysis of these issues is not warranted.

LESS THAN SIGNIFICANT IMPACT

e. Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

The SHSP includes design standards to promote landscaped and green spaces in new developments and to utilize native and drought-tolerant plants in landscaping, which is consistent with the landscape goals and policies in the El Segundo General Plan and with landscaping and water conservation ordinances in the El Segundo Municipal Code. The SHSP EIR concluded that any project within the SHSP area would be required to comply with the provisions of the El Segundo Street Tree Ordinance (Municipal Code Title 9, Chapter 3) and that implementation of the Specific Plan would therefore not conflict with the any local policies or ordinances protecting biological resources (City of El Segundo 2018b).

The proposed project would include new drought-tolerant landscaping and trees throughout the project sites and in project frontages along the public right-of-way, which would align with the goals and policies of the SHSP and General Plan. However, the project would require the removal of some trees during demolition activities. Therefore, the proposed project may have impacts related to local policies such as a tree preservation ordinance and these issues will be evaluated in detail in a Subsequent EIR.

POTENTIALLY SIGNIFICANT IMPACT

f. Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

There are no Habitat Conservation Plans (HCPs) or Natural Community Conservation Plans (NCCPs) in the SHSP area (City of El Segundo 2018b) and, therefore, within the project sites. The nearest adopted NCCP/HCP is the City of Rancho Palos Verdes NCCP/HCP, which is located approximately 11.3 miles south of the project sites (California Department of Fish and Wildlife 2019). The proposed project does not involve any activities within the City of Rancho Palos Verdes NCCP/HCP. Therefore, the proposed project would have no impact to HCPs or NCCPs. This is consistent with the findings of the SHSP EIR.

NO IMPACT

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5 Cultural Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?	☐	☐	☐	■
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	■	☐	☐	☐
c. Disturb any human remains, including those interred outside of formal cemeteries?	■	☐	☐	☐

a. Would the project cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?

The SHSP EIR stated that no federal, State, or locally designated historic resources occur within the SHSP area. The SHSP EIR concluded that some buildings within the SHSP area are over 50 years in age and have the potential to be considered historical resources if they meet local, State, or national criteria for inclusion on a historic register. Any modification, redevelopment, or demolition of a building or structure that meets the criteria to be considered a historic resource could result in significant impact under CEQA if it is not adequately mitigated for. However, the SHSP EIR included Mitigation Measure 8-1, which would reduce impacts from implementation of the SHSP to less than significant (City of El Segundo 2018b).

The project proposes to demolish four structures and construct an addition to one existing structure. In accordance with SHSP EIR Mitigation 8-1, a Cultural Resources Evaluation of the five existing buildings on both project sites was conducted in April 2019 by Michael Baker International (see Appendix A). The evaluation concluded that none of the buildings would be eligible for listing in the California Register under Criteria 1, 2, 3, and 4 due to lack of association with a historic context. Additionally, the resources were evaluated in accordance with Section 15064.5(a)(2)(3) of the CEQA Guidelines using the criteria outlined in Section 5024.1 of the California Public Resources Code, and the Cultural Resources Evaluation determined that they do not qualify as historical resources for the purposes of CEQA. Therefore, the proposed project would not have significant impacts to historic resources pursuant to Section 15064.5 and further analysis of this issue is not warranted.

NO IMPACT

b. Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

The SHSP EIR stated that the because the SHSP area is a developed, paved, urban area, it is likely that former archaeological resources within the plan area were previously destroyed by development that took place prior to the introduction of CEQA. Although resources are likely to have been destroyed by prior development, it is possible that archaeological resources exist beneath the surface in undisturbed soils. Contact with any such resources during construction activities could result in significant impacts. The SHSP EIR developed two mitigation measures for proposed projects developed in accordance with the SHSP that would reduce potential impacts to less than significant levels, as shown in Table 2 (City of El Segundo 2018b).

Likewise, the project sites have been previously graded and developed, and there are no known archaeological resources present. The project sites are underlain by four to seven feet of artificial fill, below which is old sand dune soils. In accordance with the recommendations of the Preliminary Geotechnical Investigations (see Section 7, *Geology and Soils*, for further discussion), construction of the project would include removal and recompaction of the existing artificial fill on the site. Project excavations would extend a maximum of 12.5 feet belowground surface for overexcavation of artificial fill. Because the project excavations would extend into undisturbed, native soils, there is the potential for project construction to impact previously undiscovered archaeological resources. Therefore, this issue will be assessed in detail in a Subsequent EIR.

POTENTIALLY SIGNIFICANT IMPACT

c. Would the project disturb any human remains, including those interred outside of formal cemeteries?

The SHSP EIR concluded that the potential for the discovery of human remains is low. No recorded cemeteries or other burial places occur within the SHSP planning area. It is highly likely that past development would have discovered human remains during construction work. Although other archaeological finds could have been missed at the time, it is unlikely that human remains would have been discovered and left in situ or re-interred within the SHSP area (City of El Segundo 2018b).

Likewise, the project sites are fully developed, and it is unlikely that human remains exist onsite. However, because the project excavations would extend into undisturbed, native soils, there is the potential for project construction to impact previously undiscovered human remains. Therefore, this issue will be assessed in detail in a Subsequent EIR.

POTENTIALLY SIGNIFICANT IMPACT

6 Energy

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	■	□	□	□
b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	■	□	□	□

a. Would the project result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

b. Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

The following analysis describes potential project impacts related to *Items a.* and *b.*, listed above. At the time of adoption of the SHSP EIR, CEQA did not require that projects be analyzed for energy impacts. Therefore, the SHSP EIR did not analyze any potential impacts to due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation. SHSP consistency with renewable energy or energy efficiency plans also was not assessed. As there is a potential for impacts related to energy resources, these issues will be evaluated in detail in the project Subsequent EIR.

POTENTIALLY SIGNIFICANT IMPACT

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7 Geology and Soils

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
1. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?	☐	☐	■	☐
2. Strong seismic ground shaking?	☐	☐	■	☐
3. Seismic-related ground failure, including liquefaction?	☐	☐	☐	■
4. Landslides?	☐	☐	☐	■
b. Result in substantial soil erosion or the loss of topsoil?	☐	☐	■	☐
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	■	☐
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	■	☐
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	■
f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	■	☐	☐	☐

a.1. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?

a.2. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking?

The following analysis describes potential project impacts related to *Items a.1.* and *a.2.*, listed above. According to the SHSP EIR, the City of El Segundo is located within the Peninsular Ranges geomorphic province. This province is characterized by elongated northwest-trending mountain ridges separated by straight-sided, sediment-filled valleys. Dominant geological features include northwest to west-northwest trending folds and faults. The SHSP EIR concluded that the SHSP area is not located within an Alquist-Priolo Special Study Zone, and that no faults traverse the SHSP area. The SHSP EIR stated that although the area did not have any faults traversing over the area, the area could experience strong seismic ground shaking and related effects in the event of an earthquake on one of the identified active or potentially active faults in the region (City of El Segundo 2018b).

A fault that has ruptured in at least the last 11,700 years is considered to have a higher potential of future seismicity and is considered an active fault by the Alquist-Priolo Earthquake Fault Zoning Act. Faults with evidence of longer earthquake frequency events are considered to have a lower potential of future seismicity. Preliminary Geotechnical Investigations and associated addendums were completed for the project sites by Albus-Keefe & Associates, Inc. in December 2019 (see Appendix B). The Preliminary Geotechnical Investigation Reports for the North Site and South Site concluded that no faults run through the project sites and the sites are not located in an Alquist-Priolo Fault Zone; therefore, the project sites are not at risk of fault rupture. Furthermore, implementation of the project would not exacerbate the existing risk of fault rupture, as the project would not include uses such as hydraulic fracturing or minerals extraction which can exacerbate earthquake risks.

Though the project site is not located above an Alquist-Priolo Fault Zone, strong ground shaking at the project sites may occur in the event of a sufficiently large earthquake on this or other nearby faults. To reduce geologic and seismic impacts, the City regulates development through the requirements of the California Building Code (CBC). The purpose of the CBC is to establish minimum standards to safeguard the public health, safety, and general welfare through structural strength, means of egress, and general stability by regulating and controlling the design, construction, quality of materials, use and occupancy, location, and maintenance of all building and structures within its jurisdiction. The earthquake design requirements of the CBC consider the occupancy category of the structure, site class, soil classifications, and various seismic coefficients. The CBC provides standards for various aspects of construction, including but not limited to excavation, grading, earthwork, construction, preparation of the site prior to fill placement, specification of fill materials, fill compaction and field testing, retaining wall design and construction, foundation design and construction, and seismic requirements. It includes provisions to address issues such as (but not limited to) construction on expansive soils and soil strength loss. In accordance with California law, project design and construction would be required to comply with provisions of the CBC.

Furthermore, the Preliminary Geotechnical Investigation Reports include recommendations for earthwork such as grading specifications, site clearing, ground preparation, fill placement,

and temporary excavations. Further recommendations are outlined for preliminary foundation design in regard to allowable structural bearing, lateral resistance, conventional slabs on grade, and foundation observations to ensure that the proposed buildings are structurally equipped to withstand seismic ground shaking. Because the project would comply with the CBC and recommendations of the Preliminary Geotechnical Report and because the project would not exacerbate existing ground shaking hazards, impacts related to fault rupture and seismically induced ground shaking would be less than significant.

LESS THAN SIGNIFICANT IMPACT

a.3. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction?

According to the results of the Preliminary Geotechnical Investigations, the depth to historic high groundwater in the projects sites is greater than 50 feet below ground surface (bgs) and the sites are underlain by dense natural deposits. As such, the potential for liquefaction at the project sites is considered very low. Furthermore, the project sites are not located within a mapped California Geologic Survey (CGS) liquefaction hazard zone (CGS 2021). Therefore, the proposed project would have no impact related to risk of loss, injury, or death involving seismic-related ground failure, including liquefaction.

NO IMPACT

a.4. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving landslides.

The SHSP EIR did not identify any unstable geologic formations beneath the SHSP area that could contribute to landslides. Therefore, the EIR determined that implementation of the SHSP would have no impact related to landslides (City of El Segundo 2018b). The project sites are not located nearby any hillsides or unstable slopes. The Preliminary Geotechnical Investigations confirmed that landslides would not be anticipated at the sites. Therefore, the proposed project would not result in the risk of loss, injury, or death involving landslides and there would be no impact. Further analysis of this issue is not warranted.

NO IMPACT

b. Would the project result in substantial soil erosion or the loss of topsoil?

The SHSP EIR concluded that grading and construction activities in the SHSP may result in minor erosion or the minor loss of some topsoil, but standard grading and construction erosion control techniques (e.g., for reducing surface water runoff over exposed soil) would mitigate these potential impacts (City of El Segundo 2018b).

In accordance with the Construction General Permit (Order No. 2009-0009-DWQ, as amended by 2010-0014-DWQ and 2012-0006-DWQ), the proposed project would be required to implement a SWPPP that includes the use of BMPs during project demolition and construction. BMPs such as covering of stockpiles, use of desilting basins, limitations on work during high-wind events, and post-construction revegetation and drainage requirements would be implemented and would reduce erosion and topsoil loss due to project construction. Therefore, project impacts would be less than significant and further analysis of this issue is not warranted.

LESS THAN SIGNIFICANT IMPACT

c. Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

d. Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

The following analysis describes potential project impacts related to *Items c.* and *d.*, listed above. The SHSP EIR did not identify any unstable geologic formations beneath the SHSP area that could contribute to landslides, lateral spreading, subsidence, liquefaction, or soil collapse. Therefore, the EIR determined that implementation of the SHSP would have no impact (City of El Segundo 2019).

The Preliminary Geotechnical Investigation for the North Site determined that the upper six to seven feet of the site are comprised of artificial fill, with old sand dune deposits below the artificial fill extending to at least 51.5 feet bgs. Ground water was not encountered during soil sampling. On the South Site, the upper four feet of soils consists of artificial fill, with old sand dune deposits extending from below the artificial fill to at least 51.5 feet bgs. No groundwater was encountered on the South Site during soil sampling. According to the results of the Preliminary Geotechnical Investigations, both project sites are characterized by very low potential for liquefaction and low potential for expansion. The Preliminary Geotechnical Investigations included a recommendation for the removal and recompaction of existing artificial fill on the project sites to ensure stable ground conditions and that static settlement values for the sites are within tolerable limits (see Appendix B). Therefore, with compliance with the recommendations of the Preliminary Geotechnical Investigations, impacts related to unstable geologic formations would be less than significant. As project excavations would primarily be limited to the existing disturbed layer of artificial fill, it is not anticipated that paleontological resources would be encountered during construction. Furthermore, the proposed project would implement SHSP EIR Mitigation Measures 8-2 and 8-3 as project design features to ensure that project construction would not result in impacts, directly or indirectly, that would destroy a unique paleontological resource. Therefore, the project would have less than significant impacts related to paleontological resources and further analysis of this issue is not warranted.

LESS THAN SIGNIFICANT IMPACT

e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

The SHSP EIR determined that the SHSP area would utilize piped wastewater collection and treatment systems, so there would be no impacts related to soils that would not be able to support septic systems (City of El Segundo 2018b). Likewise, the proposed project would connect to the sanitary sewer system and would not utilize septic tanks. Therefore, there would be no impact related to septic tanks.

NO IMPACT

f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Paleontological resources include fossil remains, as well as fossil localities and rock or soil formations that have produced fossil material. The SHSP EIR indicated no records of recorded vertebrate fossil localities within the project areas. The SHSP EIR concluded that although no vertebrate fossils are recorded, the sedimentary nature of the soils underlying the SHSP area have the potential to contain previously undiscovered fossilized remains. The SHSP EIR determined that with implementation of Mitigation Measures 8-2 and 8-3, as described in Table 2, impacts to paleontological resources would be less than significant (City of El Segundo 2018b).

The project sites have been previously graded and developed, and no known paleontological resources exist. As described above, the project sites are underlain by four to seven feet of artificial fill, below which is old sand dune soils. In accordance with the recommendations of the Preliminary Geotechnical Investigations, construction of the project would include removal and recompaction of the existing artificial fill on the site. Project excavations would extend a maximum of 12.5 feet belowground surface for overexcavation of artificial fill. Because the project site is within an area of high paleontological sensitivity and project excavations would extend into undisturbed, native soils, there is the potential for project construction to impact previously undiscovered paleontological resources. Therefore, this issue will be assessed in detail in a Subsequent EIR.

POTENTIALLY SIGNIFICANT IMPACT

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8 Greenhouse Gas Emissions

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	■	□	□	□
b. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	■	□	□	□

a. Would the project generate Greenhouse Gas emissions, either directly or indirectly, that may have a significant impact on the environment?

b. Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

The following analysis describes potential impacts related to *Items a.* and *b.*, as listed above. The SHSP EIR concluded that buildout of the Specific Plan would result in greenhouse gas (GHG) emissions that would exceed the applicable thresholds and would therefore represent a significant and unavoidable impact. The SHSP EIR also determined that although increased development intensity within the Plan Area would result in significant GHG emissions, the SHSP would be consistent with the goals and intent of applicable plans, policies, and regulations adopted for the purposes of reducing GHG emissions (City of El Segundo 2018b).

The proposed project includes the redevelopment of two sites with existing commercial/ industrial structures within the SHSP area and would involve demolition of older structures and the additional activities of new construction. The project proposes to expand one existing building and develop two new office buildings, including a ground floor café, as well as two aboveground parking structures. Project construction and operation would result in greenhouse gas (GHG) emissions, which could potentially have impacts to the environment or conflict with applicable GHG reduction policies. Therefore, these issues will be evaluated in detail in the Subsequent EIR.

POTENTIALLY SIGNIFICANT IMPACT

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9 Hazards and Hazardous Materials

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	■	☐
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	■	☐	☐	☐
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?	■	☐	☐	☐
d. Be located on a site that is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	■	☐	☐	☐
e. For a project located in an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	■
f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	■	☐
g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?	☐	☐	☐	■

a. Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

The SHSP EIR determined implementation of the SHSP, including construction and operation of land uses such as commercial and office uses, in accordance with the zoning districts established, would not result in a significant hazard due to the routine transport, use, and disposal of hazardous materials (City of El Segundo 2018b). The proposed project would involve construction and operation of office and café uses on sites currently used and designated by the SHSP for industrial uses. The occasional use or disposal of hazardous materials generally associated with these types of uses include unused paint, aerosol cans, cleaning agents (solvents), landscaping-related chemicals, and other common cleaning products and household substances. These materials are generally disposed of at non-hazardous Class II and III landfills (along with municipal solid waste). With compliance with the required procedures and guidelines during construction and throughout operation, impacts to the public and the environment associated with the proposed project due to the routine transport, use, and disposal of hazardous materials would be less than significant. The project does not include any proposed changes or new information that would result in new or substantially more severe significant impacts than those identified in the SHSP EIR. Accordingly, impacts would be less than significant under the proposed project and further analysis of this issue is not warranted.

LESS THAN SIGNIFICANT IMPACT

b. Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

The proposed project would involve demolition of existing structures on the project sites, except the Grand Building on the North Site, which would be preserved; and construction of new office buildings, a café, and two parking structures on sites that formerly contained industrial uses. The SHSP EIR determined that implementation of the SHSP would involve the continued use and storage of hazardous materials, which could be released in the event of an accident. However, compliance with existing regulations and safety codes would reduce the likelihood of accidental release of hazardous materials. In addition, the SHSP emphasizes development of more creative office-type uses rather than traditional heavy industry and auto-repair uses and could be anticipated to reduce the use of hazardous materials within the plan area as businesses turn over (City of El Segundo 2018b). The proposed project is an example of creative offices replacing former industrial uses, as discussed in the SHSP EIR.

Construction of the project would involve the use of potentially hazardous materials such as vehicle fuels and fluids that could be released should an accidental leak or spill occur. In addition, the project soils are known to contain contamination. Construction activities involving disturbance of contaminated soils could potentially create a significant hazard for construction workers and adjacent properties through upset or accident conditions. Therefore, this issue requires further assessment and will be analyzed in the Subsequent EIR.

Though construction activities have the potential to result in upset or accidental releases of hazardous materials, operation of the office and restaurant uses would not involve the use or storage of significant quantities of hazardous materials. As discussed under *Response (a)*, operational use of hazardous materials would be limited to small quantities of cleaning solvents, paints, and landscaping maintenance materials. Although it is anticipated

operation of the project would not create a significant hazard to the public or the environment through any reasonably foreseeable upset and accident conditions involving the release of hazardous materials this potential impact will be analyzed in the Subsequent EIR.

POTENTIALLY SIGNIFICANT IMPACT

c. Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?

El Segundo Middle School is located approximately 0.14 mile west of the project site. The SHSP EIR concluded that construction and operation of land uses planned under the SHSP would not release hazardous materials or substances into the environment that would cause impacts to El Segundo Middle School, provided that businesses comply with the applicable federal, State, and local Fire Department requirements regard the handling of hazardous materials (City of El Segundo 2018b). Project construction would involve the temporary use of potentially hazardous materials such as vehicle fuels and fluids that could be released should an accidental leak or spill occur. However, standard construction BMPs for the use and handling of such materials would avoid or reduce the potential for such conditions to occur. Any use of potentially hazardous materials during construction of the project would comply with all local, State, and federal regulations regarding the handling of potentially hazardous materials, including Title 49 of the Code of Federal Regulations and Title 22, Division 4.5 of the California Code of Regulations. However, as discussed above under *Item b.*, project construction has the potential for accidental release of hazardous substances associated with onsite soil contamination. Therefore, construction activities associated with the proposed project have the potential to emit hazardous emissions or handle hazardous substances within 0.25 mile of a school and this issue will be further assessed in a Subsequent EIR.

Risk of spills and hazardous emissions release would cease after construction is completed. Operation of the proposed project would involve office and restaurant uses. Operation and maintenance activities would likely involve the use of common household materials such as cleaning and degreasing solvents, fertilizers, and pesticides. Use of these materials would be subject to compliance with existing regulations, standards, and guidelines established by the federal, state, and local agencies related to storage, use, and disposal of hazardous materials. The transport, use, and storage of hazardous materials during construction of the project would be subject to all applicable State and federal laws, such as the Hazardous Materials Transportation Act, Resource Conservation and Recovery Act, the California Hazardous Material Management Act, and the California Code of Regulations, Title 22. Other than small quantities of materials used in the maintenance of offices and restaurants, the project would not involve the emissions or handling of acutely hazardous materials, substances, or waste. Therefore, project operation would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school. However, as construction has the potential to for accidental release of hazardous substances, this issue will be studied further in the Subsequent EIR.

POTENTIALLY SIGNIFICANT IMPACT

d. Would the project be located on a site that is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

The project sites are contained within a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 due to the history of contamination on the site. A Site Characterization Report was completed for the project sites and soil contamination was found to be present. Therefore, this issue requires further analysis and will be studied in a Subsequent EIR.

POTENTIALLY SIGNIFICANT IMPACT

e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?

The project site is located approximately 0.8 mile south of Los Angeles International Airport (LAX). The SHSP EIR determined that the SHSP plan area, including the project site, is located outside of the airport influence area established by the Los Angeles County Airport Land Use Commission. Therefore, the SHSP area and project site are not within the area subject to the LAX Comprehensive Land Use Plan (City of El Segundo 2018b). Therefore, the project would not result in a safety hazard or excessive noise for people residing or working in the project and no impact would occur under the proposed project, and further analysis of this issue is not warranted.

NO IMPACT

f. Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

The SHSP EIR determined that implementation of the SHSP would not interfere with the City's adopted Emergency Operations Plan (EOP) because projects proposed pursuant to the SHSP would be reviewed to ensure that new development would not create barriers to evacuation plans (City of El Segundo 2018b). In addition, the El Segundo Fire Department and El Segundo Police Department concluded that increased development intensity in the plan area due to implementation of the SHSP would not result in significant impacts to emergency services (City of El Segundo 2018b).

The project would not involve the development of structures that could potentially impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Construction activities have the potential to temporarily impact traffic and vehicle speeds on adjacent roadways; however, these impacts would be temporary and emergency access to these roadways would not be blocked by project construction. Furthermore, the applicant would coordinate with the City to ensure appropriate construction staging areas and adequate vehicular and pedestrian access are temporarily provided on adjacent roadways.

The proposed project would include construction of new buildings consisting of office, parking, and café uses. Although the proposed project would increase development intensity on the site, operation of the project would not require the development of additional streets, the closing of existing streets, or the introduction of new features that would interfere with or obstruct an adopted emergency response plan. Vehicular access to the North Site parking structure would be provided by local roadways such as East Holly Avenue or Washington Street and the South Site parking structure would be accessed off

Kansas Street. There would also be pedestrian and bicycle access points and internal walking paths provided throughout the project sites.

As concluded in the SHSP EIR, the proposed project would be required to comply with all applicable City codes and regulations pertaining to emergency response and evacuation plans maintained by the police and fire departments, as well as fire protection and security on the site. The El Segundo Fire Department (ESFD) has completed a review of the proposed project and indicated that provided Washington Street remains a fire apparatus access roadway, the project complies with the applicable State and local building and fire codes, and the applicant submit a Fire/Life Safety Plan for ESFD approval, the proposed project would not result in safety hazards or interfere with emergency response and evacuation. In addition, the EL Segundo Fire and Police Departments have been contacted regarding the proposed project (refer to Section 15, *Public Services*) and indicated that the proposed project would not result in any impacts to emergency services. As a result, the proposed project would not conflict with applicable emergency response and evacuation plans, and impacts would be less than significant. Further analysis of this issue is not warranted.

LESS THAN SIGNIFICANT IMPACT

g. Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?

The project sites are located in an urbanized area that includes commercial, office, residential, and industrial uses and roadways. As described in The SHSP EIR, the SHSP area is highly urbanized and does not contain any very high fire hazard severity zones (VHFHSZs); therefore, the risk of wildfire throughout the SHSP plan area is minimal and the SHSP would have no impacts related to wildfire (City of El Segundo 2018b). According to the California Department of Forestry and Fire Protection (CalFIRE), the nearest VHFHSZ is located approximately 3.5 miles northwest of the project site in the wetland area adjacent to Marina Del Rey (CalFIRE 2020). Given the distance and intervening structures and development between the project sites and nearest VHFHSZ, the risk of wildfire at the project sites is low. Furthermore, the proposed would be required to comply with applicable codes, regulations, and standard measures for fire protection. In addition, the developer would be required to provide proof of compliance with applicable building and fire code requirements. These requirements include, but are not limited to, items such as types of roofing materials, building construction, fire hydrant flows, hydrant spacing, access and design, fire sprinkler systems, and other hazard reduction programs, as set forth by the fire department and the Uniform Fire Code. Therefore, the project would not result in impacts to people and structures as a result of wildland fires, and further analysis of this issue is not warranted.

NO IMPACT

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10 Hydrology and Water Quality

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	■	□	□	□
b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	■	□	□	□
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
(i) Result in substantial erosion or siltation on- or off-site;	■	□	□	□
(ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;	■	□	□	□
(iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	■	□	□	□
(iv) Impede or redirect flood flows?	■	□	□	□
d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	□	□	□	■
e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	■	□	□	□

a. Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

b. Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

c.(i) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would result in substantial erosion or siltation on- or off-site?

c.(ii) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

c.(iii) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

c.(iv) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would impede or redirect flood flows?

e. Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

The following analysis describes potential project impacts related to *Items a.*, *b.*, *c.*, and *e.* listed above. The SHSP EIR concluded that with compliance with existing regulations such as the National Pollutant Discharge Elimination System and the El Segundo Municipal Code Chapter 5-4, buildout of the SHSP would not significantly impact water quality, drainage patterns and runoff, or groundwater quality. In addition, because groundwater is not used as a water source within the City, buildout of the SHSP would not impact groundwater management or supplies (City of El Segundo 2018b).

The proposed project includes the redevelopment of two sites with existing commercial/ industrial structures within the SHSP area. The project would include demolition of four existing structures, remodeling/expanding one existing structure, and constructing two new buildings and two aboveground parking structures on the project site to serve office and café uses. Ground disturbing activities associated with project construction could result in impacts to water quality, and the altered site layout could result in changes to site hydrology and stormwater flows. Therefore, project impacts related to hydrology and water quality could be potentially significant and will be evaluated in detail in the Subsequent EIR.

POTENTIALLY SIGNIFICANT IMPACT

d. In flood hazard, tsunami, or seiche zones, would the project risk release of pollutants due to project inundation?

The SHSP EIR states that the SHSP area is not located within a 200-year flood hazard area, seiche zone, or tsunami inundation area. Therefore, the SHSP EIR determined that implementation of the SHSP would not result in the release of pollutants due to inundation (City of El Segundo 2018b). Similarly, the project site, with its location in the SHSP, is not subject to flooding according to the Federal Emergency Management Agency (FEMA; FEMA 2008). Furthermore, operation of the proposed office and café uses would not involve the use or storage of substantial quantities of hazardous materials. Therefore, the proposed project would not risk the release of pollutants due to any flood hazard, tsunami, or seiche zones, and there would be no impact. No further analysis of this issue is required.

NO IMPACT

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11 Land Use and Planning

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Physically divide an established community?	☐	☐	☐	■
b. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	■	☐	☐	☐

a. Would the project physically divide an established community?

The SHSP EIR stated that future development activity in the SHSP would not disrupt or divide the physical arrangement of the community due to its location and the types of land uses within and adjacent to the SHSP. The SHSP EIR concluded that any new development in the SHSP would result in a modest intensification of land uses but would not alter the existing pattern of land use nor create any physical divisions within the SHSP (City of El Segundo 2018b). The project site is within a commercial and industrial area of the City and is developed with buildings and surface parking lots. The proposed project would incorporate a pedestrian connection between the two portions of the project site and would provide internal walking paths to enable pedestrians to easily traverse the site. Therefore, redevelopment of the project site would not physically divide an established community and there would be no impact. Further analysis of this issue is not warranted.

NO IMPACT

b. Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

The SHSP EIR stated that implementation of the SHSP would increase development intensity and lead to a shift in land uses from industrial to offices and related uses. As indicated in the SHSP EIR, the SHSP area is anticipated to experience a net increase in development of 517,094 sf by the year 2040 due to implementation of the Specific Plan. Meanwhile, light industrial uses are expected to decline by almost 60 percent during this same period. The SHSP EIR concluded that policies, standards, and regulations outlined in the SHSP were consistent with existing City regulations and would not conflict with existing City General Plan policies for the purposes of avoiding or mitigating environmental effects (City of El Segundo 2018b).

The proposed project would replace existing industrial land uses on the project site with office and café uses, consistent with the overall intent of the SHSP to transition the land uses of the SHSP area from largely light industrial and commercial uses to more office uses. However, the proposed project would exceed the allowable height and floor area ratio established by the SHSP and would require a Community Benefits Plan for approval.

Therefore, significant environmental impacts due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect consistency with land use policies will be evaluated in detail in the Subsequent EIR.

POTENTIALLY SIGNIFICANT IMPACT

12 Mineral Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	■	☐
b. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	■	☐

a. Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

b. Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

The following analysis describes potential project impacts related to *Items a.* and *b.*, listed above. The SHSP EIR stated that the entire City lies above the El Segundo Oil Field. From 1935 to 1987, 76 wells were drilled, and produced over 13.6 million barrels of oil. Although there are several wells still operating in the City, there are no oil wells in operation within the SHSP area.

The City is also in the San Fernando Valley Production-Consumption Region and is classified as Mineral Resources Zone 3 (MRZ-3). This classification is defined as “Areas containing mineral deposits the significance of which cannot be evaluated from available data.” The SHSP EIR also indicated that the City is already highly urbanized and does not have any undeveloped land available for mineral extraction activities. Therefore, the EIR determined the SHSP would have less than significant impacts to mineral resources and no mitigation was required (City of El Segundo 2018b).

Though the project site is located within MRZ-3 designated land and lies above an oil field, there are no existing mineral extraction operations on the project site. Further even though the proposed project would not preclude the possibility of future mineral extraction activities on the site, minerals cannot be reasonably extracted given existing onsite development and surrounding land uses, which include residential uses and a nearby school. Therefore, the project would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state. Furthermore, the project would not result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan. Project impacts related to mineral resources would be less than significant and further analysis of this issue is not warranted.

LESS THAN SIGNIFICANT IMPACT

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13 Noise

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project result in:				
a. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	■	□	□	□
b. Generation of excessive groundborne vibration or groundborne noise levels?	■	□	□	□
c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	□	□	□	■

a. Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

b. Would the project result in generation of excessive groundborne vibration or groundborne noise levels?

The SHSP EIR indicated that, dependent on the distance and intensity of equipment used there for any future projects, there could be project specific noise and vibration impacts associated with construction of future projects developed in accordance with the SHSP, (City of El Segundo, 2018b). The SHSP EIR also considered operational noise impacts and detailed traffic and noise studies were prepared for to evaluate the potential future increases in traffic-related noise levels associated with SHSP build-out. The SHSP EIR noise analysis identified a significant and unavoidable noise impact due to increased traffic-related noise due to build-out of the SHSP (City of El Segundo, 2018b).

Construction of the proposed project would involve demolition, site preparation, grading, building construction, and paving activities that would generate noise and groundborne vibration during the temporary construction period. Therefore, the proposed project may cause the generation of a substantial temporary increase in ambient noise levels and groundborne vibration in the vicinity of the project sites during project construction. In addition, new vehicles trips generated by operation of the proposed project could potentially

result in increased traffic noise levels in the project vicinity that could exceed the applicable noise standards. Therefore, these issues will be studied further in the Subsequent EIR.

POTENTIALLY SIGNIFICANT IMPACT

c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people be residing or working in the project area to excessive noise levels?

The SHSP area and project sites are located in the vicinity of LAX and Hawthorne Municipal Airport (HMA). The SHSP EIR determined that the SHSP area is not located within the LAX or HMA planning boundaries, including any private airstrips. Therefore, any development facilitated by the SHSP, including the proposed project site, would not expose people to excessive noise levels from aircraft and impacts would be less than significant (City of El Segundo 2018b). Likewise, the proposed project would not expose any potential workers to excessive airport noise from LAX or HMA and there would be no impact. Further analysis of this issue is not warranted.

NO IMPACT

14 Population and Housing

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Induce substantial unplanned population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?	☐	☐	■	☐
b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	■

a. Would the project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

The SHSP EIR stated the SHSP prohibits development of new residential developments within the plan area, and rather emphasizes commercial, office, and industrial development. The SHSP EIR indicated that implementation of the SHSP would generate an estimated 951 additional jobs, which could result in an increase in population within the City and adjoining areas if future employees and their families relocate to areas closer to their jobs. However, the SHSP EIR concluded that indirect population growth associated with new jobs in the plan area would be accounted for under both the SCAG 2040 projection and City General Plan Buildout forecast and would not result in substantial unplanned population growth(City of El Segundo 2018b).

The proposed project does not include any residential units and as part of the project, a land use covenant prohibiting residential use on the site would be implemented; therefore, there would be no direct growth impacts related to population or housing. The project sites currently contain 4,697 sf of office use, 66,576 sf of research and development/laboratory uses, and 47,962 sf of manufacturing. According to the United States Green Building Council (USGBC), general office uses have one employee per 304 sf, research and development uses have one employee per 405 sf, and manufacturing facilities have one employee per 535 sf (USGBC 2008). Therefore, existing development on the project site would generate an estimated 270 jobs.[2] The proposed project would include 243,217 sf of office uses and 886 sf of café uses. According to the USGBC, high turnover restaurants, such as the proposed café, have one employee per 100 sf (USGBC 2008). Therefore, the proposed project uses would generate an estimated 809 jobs, for a net increase of 539 jobs on the project sites.[3]

[2] (4,697 sf x 1 employee/304 sf) + (66,576 sf x 1 employee/405 sf) + (47,962 sf x 1 employee/535 sf) = 270 employees
[3] (243,217 sf x 1 employee/304 sf) + (886 sf x 1 employee/100 sf) = 809 employees

According to SCAG, the City's employment count is anticipated to increase from 48,300 in 2016 to 52,400 by 2045, an increase of 4,100 employees (SCAG 2020). Employment growth associated with the proposed project would account for approximately 13 percent of SCAG's projected employment growth (SCAG 2020). Increased employment may result in some amount of indirect population growth to the degree that new employees do not already live within the City and choose to relocate to the City; however, employment growth associated with the project would be within SCAG's long-term employment forecasts and would not exceed regional employment projections. Furthermore, the project sites are within a developed area of the City already served by existing roadways and utilities. Therefore, indirect population growth generated by the proposed project would not result in substantial unplanned population growth, and impacts would be less than significant. Further analysis of this issue is not warranted.

LESS THAN SIGNIFICANT IMPACT

b. Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

The proposed project would not involve the demolition of existing housing. As such, the project would not result in the displacement of any existing City residents or require the construction of replacement housing elsewhere and there would be no impact. Further analysis of this issue is not warranted.

NO IMPACT

15 Public Services

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
1. Fire protection?	☐	☐	■	☐
2. Police protection?	☐	☐	■	☐
3. Schools?	☐	☐	■	☐
4. Parks?	☐	☐	■	☐
5. Other public facilities?	☐	☐	■	☐

a.1. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered fire protection facilities, or the need for new or physically altered fire protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives?

a.2. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered police protection facilities, or the need for new or physically altered police protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives?

The following analysis describes potential project impacts related to *Items a.1.* and *a.2.*, listed above. According to the SHSP EIR, implementation of the Specific Plan would result in increased development intensity, particularly for office and commercial uses. New development could result in incremental increases in demand for fire and police services. New projects developed in accordance with the SHSP would be required to pay impact fees for fire and police services, which would offset potential impacts. In addition, the City of El Segundo Fire Department (ESFD) and City of El Segundo Police Department (ESPD) indicated that implementation of the SHSP would not result in significant impacts to service ratios or create the need for new or physically altered facilities (City of El Segundo 2018b).

The ESFD and ESPD would also provide emergency services to the proposed project. The ESFD includes 14 firefighters, administrative staff, two stations, four fire engines, two paramedic rescues, a heavy urban search and rescue unit, and assorted other trucks for rescue services (City of El Segundo 2021a). The ESFD is the primary emergency response agency in the City and is responsible for fire suppression, emergency medical response, environmental safety, fire prevention, home and business inspections, and plan checks (City of El Segundo 2018b). The nearest fire station is Fire Station No.1, located 0.9 roadway mile west of the project sites. Fire Station No.2 is also located within a short driving distance of the project sites, 1.1 roadway miles to the northeast. The ESPD consists of 62 sworn offices, administrative staff, one police station, two bureaus (Support Services and Field Operations), and two patrol divisions (West Division and East Division). The ESPD is responsible for responding to emergency calls and traffic incidents, traffic and parking enforcement, animal control, community engagement, crime investigations, patrol and safety, a K-9 program, and providing safety for special community events (City of El Segundo 2021b). The project sites are served by the ESPD West Patrol Division and the police station is located approximately one roadway mile west of the project site (City of El Segundo 2021c).

The proposed project would add new office and café uses to project sites that currently contains office and industrial development. The project would increase development intensity and employment opportunities, which could result in an incremental increase in demand for fire and police services. However, the ESFD and ESPD have reviewed the project plans and indicated that they have adequate staffing and facilities to serve the proposed project, and that the proposed project would not result in significant impacts to their services provided the project comply with the requirements established during the project's Plan Check process. The proposed project would be designed to accommodate emergency access, including police and fire access. ESFD has verified that fire access routes have been designed to meet the minimum width and turning dimensions and that all buildings would be constructed to meet the current building code requirements for fire safety, including a Fire/Life Safety Plan for the project sites, automatic fire sprinkler and alarm systems, and fire control rooms. In addition, the proposed project would be subject to development impact fees for ESFD and ESPD, which would help offset incremental demand for emergency services. Therefore, the proposed project would not result in substantial adverse physical impacts associated with the provision of new or physically altered fire and police protection facilities, or the need for new or physically altered fire protection facilities. Project impacts would be less than significant and further analysis of these issues is not warranted.

LESS THAN SIGNIFICANT IMPACT

a.3. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered schools, or the need for new or physically altered schools, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives?

The SHSP EIR found that the development of the Specific Plan would result in intensified office, commercial, and industrial uses but would not include a substantial residential component that would directly increase the population or number of students in the area. The SHSP EIR indicated that implementation of the SHSP would generate an estimated 951 additional jobs, which could result in an increase in population within the City and adjoining areas as future employees and their families relocate to areas closer to their jobs (City of El Segundo 2018b). However, the SHSP EIR concluded that construction of new

schools or alteration of existing school facilities would not result from implementation of the Specific Plan. With the payment of development impact fees, implementation of the SHSP was determined to have less than significant impacts to school facilities or services (City of El Segundo 2018b).

The proposed project would not include residential units and would therefore not directly add new students to the City. However, the project could indirectly increase the population of the City through new employment opportunities, as discussed in Section 14, *Population and Housing*. The proposed project would result in a net increase of approximately 539 employees on the project sites. As discussed in Section 14, *Population and Housing*, employment growth associated with the project would be within SCAG's long-term employment forecasts and would not exceed regional employment projections, nor would the employment growth exceed the anticipated job growth for the SHSP area described in the SHSP EIR.

Increased employment may result in some amount of growth to the degree that new employees and their families move to the City and students are added to the capacity of schools. However, the project would be subject to the payment development impact fees that would offset the incremental increase in demand for schools within the City. Pursuant to Section 65995 (3)(h) of the California Government Code (Senate Bill 50, chaptered August 27, 1998), the payment of statutory fees "...is deemed to be full and complete mitigation of the impacts of any legislative or adjudicative act, or both, involving, but not limited to, the planning, use, or development of real property, or any change in governmental organization or reorganization." Therefore, the project would not result in substantial adverse physical impacts associated with the provision of new or physically altered schools, or the need for new or physically altered schools and further analysis of this issue is not warranted.

LESS THAN SIGNIFICANT IMPACT

a.4. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered parks, or the need for new or physically altered parks, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives?

The SHSP EIR noted that implementation of the Specific Plan would not result in the loss of parks or recreational facilities, but that increased development intensity could lead to additional use of parks within the City. The SHSP EIR determined that incremental increases in demand for parks and recreational facilities due to increased development would be offset by development impact fees. In addition, the SHSP includes design standards that encourage the provisioning of recreational facilities in new development projects, such as providing for streetscapes and pedestrian walkways that residents and workers in the City would be able to enjoy (City of El Segundo 2018b).

The nearest parks from the project sites are the Freedom Park, a linear park with a walking path located approximately 275 feet northeast of the project sites, and a neighborhood park consisting of a grassy area with children's play structures located at the northwest corner of Kansas Street and Holly Avenue, approximately 75 feet northwest of the North Site. As discussed in Section 14, *Population and Housing*, the project would not include new residential development that would directly increase the population on the project site and increase demand for nearby parks. However, implementation of the proposed project would introduce new employees to the project area who could choose to utilize parks nearby the project site while at work.

While it is unlikely that most employees would utilize nearby parks while at work, there is the potential for the project to incrementally increase some employee demand for parks and recreational facilities in the project site vicinity. Employees working on the project site would not be anticipated to utilize the neighborhood park, which is primarily used by families with children, and impacts to this park are not anticipated. Employees could potentially use Freedom Park for walking or exercise during breaks; however, this would not represent a substantial increase in use of the park. Furthermore, the project would improve the pedestrian environment through new decorative crosswalks, walking paths, enhanced landscaping, new sidewalks along Kansas Street, and new public open spaces adjacent to the public right-of-way. These improvements would provide walking and recreational opportunities for employees. In addition, development of the proposed project would require the payment of development impact fees that would go towards maintaining, improving, and expanding parks within the City and would offset the incremental increase in demand for parks and recreational facilities from new employees. The project would not result in substantial adverse physical impacts associated with the provision of new or physically altered parks, or the need for new or physically altered parks. Therefore, the proposed project would have less than significant impacts to parks and recreational facilities and further analysis of this issue is not warranted.

LESS THAN SIGNIFICANT IMPACT

a.5. Would the project result in substantial adverse physical impacts associated with the provision of other new or physically altered public facilities, or the need for other new or physically altered public facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives?

The SHSP EIR evaluated impacts to other public services in the SHSP planning area, such as the El Segundo Public Library, and determined that implementation of the SHSP would not significantly impact library services. The SHSP EIR notes that implementation of the SHSP could lead to an increase in the local daytime (employee) population, but that the fee study prepared to establish the library fee did not find a strong link between non-residential development and library service impacts. As the SHSP would primarily involve an increase in office and commercial developments, impacts to libraries were found to be less than significant (City of El Segundo 2018b).

The proposed project would result in a net increase of 191,526 sf of new office uses within the SHSP area, which could incrementally increase the demand for other public services, such as libraries. However, as described in the SHSP EIR, nonresidential uses such as those proposed by the project were not found to create substantial demand for library services within the City. Additionally, increased property tax revenues and subventions provided by the project would help offset any increased demands for other governmental services, such as public libraries. Therefore, the proposed project would have less than significant impacts associated with the provision of new or physically altered public facilities, or the need for other new or physically altered public facilities in order to maintain acceptable service ratios, response times or other performance objectives. Further analysis of this issue is not warranted.

LESS THAN SIGNIFICANT IMPACT

16 Recreation

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	■	☐
b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	■	☐

a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

The following analysis describes potential project impacts related to *Items a.* and *b.*, listed above. The SHSP EIR indicated that the SHSP area is in the vicinity of eight public parks: Freedom Park, Recreation Park, Library Park, Hilltop Park, Acacia Park, Washington Park, Candy Cane Park, and Constitution Park (City of El Segundo 2018b). The SHSP includes mostly non-residential development (primarily new commercial and office uses). These types of uses do not generate a substantial direct demand for regional or local park facilities or recreational services. However, to the degree the SHSP would induce or attract new residents and housing to the City, there may be a small indirect increase in the need for park facilities and services as the SHSP builds out. The SHSP EIR determined that with payment of City development impact fees, projects implemented in accordance with the SHSP would have no impacts to regional or local park facilities (City of El Segundo 2018b).

As described in Section 15, *Public Services*, the nearest parks to the project site are the neighborhood park and Freedom Park, located approximately 75 feet northwest and 275 feet northeast of the project sites, respectively. While it is unlikely that most employees would utilize nearby parks while at work, there is the potential for the project to incrementally increase demand for parks and recreational facilities in the project site vicinity. Employees working on the project site would not be anticipated to utilize the neighborhood park, which is primarily used by families with children, and impacts to this park are not anticipated. Employees could potentially use Freedom Park for walking or exercise during breaks; however, this would not represent a substantial increase in use of the park. Furthermore, the proposed project would be subject to Development Impact Fees (DIF) for park facilities which would assist with the City's recreational budget for local park facilities or services created by new and/or more intense development. Any indirect increase in demand for parks and recreational facilities created by the proposed project would be offset by the

payment of DIF. Therefore, the proposed project would not require the construction or expansion of recreational facilities and impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

17 Transportation

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	■	□	□	□
b. Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?	■	□	□	□
c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible use (e.g., farm equipment)?	■	□	□	□
d. Result in inadequate emergency access?	□	□	■	□

a. Would the project conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

b. Would the project conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?

c. Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible use (e.g., farm equipment)?

The following analysis describes potential project impacts related to *Items a.* through *c.*, as listed above. The SHSP EIR determined that buildout of the SHSP would result in an additional 12,677 daily vehicle trips due to new commercial, office, and industrial uses within the plan area. The SHSP EIR found that the implementation of the SHSP would not result in significant impacts to public transit, bicycle, and pedestrian facilities and would not create safety hazards due to geometric design features or incompatible uses. The SHSP EIR did not assess VMT impacts and consistency with CEQA Guidelines Section 15064.3, subdivision (b) as this subject was not a CEQA issue at the time the SHSP EIR was certified (City of El Segundo 2018b).The proposed project would involve the redevelopment of two sites with existing commercial/industrial structures within the SHSP area. The project proposes to expand one existing building and development of two new office buildings, a ground floor café, and two aboveground parking structures. Construction of the proposed project could result in temporary impacts to the circulation system. In addition, the project would increase development intensity which could result in increased vehicle trips on area roadways and associated VMT. As there is a potential for construction and operation of the

proposed project to have impacts related to transportation, traffic, bicycle, parking, and pedestrian movements, these issues will be evaluated in detail in the Subsequent EIR.

POTENTIALLY SIGNIFICANT IMPACT

d. Would the project result in inadequate emergency access?

The SHSP EIR determined that implementation of the SHSP would not result in inadequate emergency access because projects proposed pursuant to the SHSP would be reviewed to ensure that new development would be subject to provisions within the City's Fire Code regarding emergency access (City of El Segundo 2018b). Likewise, the proposed project would be subject to the City Fire Code requirements and Fire Department conditions of approval for the project as described in the *Project Description* Section of this document.

The project would not involve the development of structures that could potentially impair emergency access to the project site and surrounding area. Construction activities have the potential to temporarily impact traffic and vehicle speeds on adjacent roadways; however, these impacts would be temporary and emergency access to these roadways, including Washington Street, would not be blocked by project construction. Furthermore, the applicant would coordinate with the City to ensure appropriate construction staging areas and adequate emergency vehicle access to the project site and adjacent roadways are maintained throughout the construction period.

The proposed project would include construction of new buildings consisting of office, parking, and café uses. Although the proposed project would increase development intensity on the site, operation of the project would not require the closing of existing streets or the introduction of new features that would obstruct emergency access. Emergency access to the North Site parking structure would be provided by local roadways such as East Holly Avenue or Washington Street and the South Site would be accessed off Kansas Street. As required by the Fire Department, the proposed project would be designed to accommodate emergency access, including police and fire access. ESFD has verified that fire access routes have been designed to meet the minimum width and turning dimensions and that all buildings would be constructed to meet the current building code requirements for fire safety. Additionally, the applicant would submit a Fire/Life Safety Plan that includes emergency site access during project construction, permanent Fire Department access during operation, the locations of fire hydrants and sprinkler systems, and fire alarm system specifications prior to issuance of building permits for the project. Therefore, the proposed project would not result in inadequate emergency access during project construction and operation and impacts would be less than significant. Further analysis of this issue is not warranted.

LESS THAN SIGNIFICANT IMPACT

18 Tribal Cultural Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in a Public Resources Code Section 21074 as either a site, feature, place, or cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)?	■	□	□	□
b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	■	□	□	□

a. Would the project cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code Section 21074 that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)?

b. Would the project cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code 21074 that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1?

The following analysis describes potential project impacts related to *Items a.* and *b.*, listed above. Assembly Bill 52 (AB 52) adds tribal cultural resources to the specific cultural resources protected under CEQA and requires lead agencies to notify relevant tribes about

development projects. It also mandates lead agencies to consult with tribes, if requested, and sets the principles for conducting and concluding the required consultation process.

The SHSP EIR noted that prior to the arrival of the Spanish, the El Segundo and Los Angeles coastal areas were first settled by the Tongva (also known as the Gabrieleños) and Chumash Native American tribes. The SHSP EIR indicated that no prehistoric sites or artifacts have been discovered in the SHSP planning area or within one-half mile of it (City of El Segundo 2018b). As the project is within the SHSP planning area, there are no known tribal cultural resources on the project sites. However, previously undiscovered tribal cultural resources could potentially exist within undisturbed soils and could be impacted by project construction activities.

The City of El Segundo is currently in consultation with the Gabrieleño Band of Mission Indians - Kizh Nation to further assess the potential for previously undiscovered tribal cultural resources on the project. Results of the meeting will be reported, and this issue will be studied in detail in the Subsequent EIR.

POTENTIALLY SIGNIFICANT IMPACT

19 Utilities and Service Systems

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	■	□	□	□
b. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	■	□	□	□
c. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	■	□	□	□
d. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	■	□	□	□
e. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	■	□	□	□

a. *Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?*

b. *Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?*

c. Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

d. Would the project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

e. Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

The following analysis describes potential project impacts related to *Items a.* through *e.*, as listed above. The SHSP EIR concluded that implementation of the SHSP would not result in impacts to wastewater treatment facilities, stormwater drainage facilities, or water supply. The SHSP EIR concluded that implementation of the SHSP would not result in the need for construction of new water or wastewater facilities, or expansion of existing facilities. The SHSP EIR also determined that buildout of the SHSP would not result in impacts related to solid waste (City of El Segundo 2018b).

The proposed project would involve the construction and operation of office and café uses on sites with existing industrial/commercial development. The proposed project would increase development by 194,561 sf, which could potentially increase demand for electricity, natural gas, and water, as well as increased generation of solid waste and wastewater compared to existing conditions. The proposed project could also require upgrades to the existing utilities. Therefore, there is potential for the proposed project to have significant impacts related to utilities and these issues will be evaluated in detail in the Subsequent EIR.

POTENTIALLY SIGNIFICANT IMPACT

20 Wildfire

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a. Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	■
b. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☐	■
c. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	■
d. Expose people or structures to significant risks, including downslopes or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	■

a. *If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project substantially impair an adopted emergency response plan or emergency evacuation plan?*

b. *If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project, due to slope, prevailing winds, and other factors, exacerbate wildfire risks and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?*

c. *If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?*

d. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project expose people or structures to significant risks, including downslopes or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

The SHSP EIR did not analyze impacts related to state responsibility areas or lands classified as very high fire hazard severity zones. The project sites are located in an urbanized area that includes commercial, office, residential, and industrial uses and roadways. As described in The SHSP EIR, the SHSP area is highly urbanized and does not contain any Very High Fire Hazard Severity Zone (VHFHSZs); therefore, the risk of wildfire throughout the SHSP area is minimal and no impacts related to wildfire would occur (City of El Segundo 2018b).

According to the California Department of Forestry and Fire Protection (CalFIRE), the nearest VHFHSZ is located approximately 3.5 miles northwest of the project sites in the wetland area adjacent to Marina Del Rey (CalFIRE 2020). Given the distance and intervening structures and development between the project sites and nearest VHFHSZ, the risk of wildfire is low. Furthermore, the proposed project would be required to comply with applicable codes, regulations, and standard measures for fire protection. The developer would be required to provide proof of compliance with applicable building and fire code requirements, as well as El Segundo Fire Department (ESFD) Plan Check requirements. These requirements include, but are not limited to, items such as types of roofing materials, building construction, fire hydrant flows, hydrant spacing, access and design, fire sprinkler systems, and other hazard reduction programs such as the Fire/Life Safety Plan, as set forth by the ESFD and the Uniform Fire Code. Therefore, the project would not result in impacts to people and structures as a result of wildland fires, and further analysis of this issue is not warranted.

NO IMPACT

21 Mandatory Findings of Significance

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Does the project:				
a. Have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	■	□	□	□
b. Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	■	□	□	□
c. Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	■	□	□	□

a. Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

In Section 4, *Biological Resources*, it was found that the proposed project would not substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or substantially reduce the number or restrict the range of a rare or endangered plant or animal with the incorporation of project design features shown in Table 2. Potential impacts to fish, wildlife, and plants would be less than significant.

As discussed in Section 5, *Cultural Resources*, Section 7, *Geology and Soils*, and Section 18, *Tribal Cultural Resources*, there is the potential for impacts to previously undiscovered archaeological, paleontological, and tribal cultural resources, these issues will be analyzed in detail in a Subsequent EIR.

POTENTIALLY SIGNIFICANT IMPACT

b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?

As discussed in Sections 1 through 20, above, the proposed project may result in significant impacts to aesthetics, air quality, biological resources, cultural resources, energy, GHG emissions, hazards and hazardous materials, hydrology and water quality, land use and planning, noise, paleontological resources, transportation, tribal cultural resources, and utilities. Potential cumulative impacts in these issue areas, for which potentially significant impacts have been identified, will be analyzed in detail in a Subsequent EIR.

POTENTIALLY SIGNIFICANT IMPACT

c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

In general, impacts to human beings are associated with air quality, GHG emissions, hazards and hazardous materials, and noise. As discussed in Section 3, *Air Quality*, Section 8, *Greenhouse Gas Emissions*, Section 9, *Hazards and Hazardous Materials*, and Section 13, *Noise*, impacts related to these issue areas could potentially be significant. Therefore, the proposed project could potentially have harmful environmental effects that could affect humans either directly or indirectly, and this issue will be analyzed if detail in a Subsequent EIR.

POTENTIALLY SIGNIFICANT IMPACT

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List of Preparers

Rincon Consultants, Inc. prepared this IS under contract to the City of El Segundo. Persons involved in data gathering analysis, project management, and quality control are listed below.

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Appendices – Table of Contents

Appendix A Cultural Resources Identification and Evaluation Memorandum
Appendix B Preliminary Geotechnical Investigation Reports and Addendums
Appendix C Site Characterization Report

Appendix A

Cultural Resources Identification and Evaluation Memorandum

Michael Baker INTERNATIONAL

We Make a Difference

April 15, 2019

Paul Samaras, Principal Planner
CITY OF EL SEGUNDO
350 Main Street
El Segundo, CA 90245

RE: CULTURAL RESOURCES IDENTIFICATION AND EVALUATION MEMO FOR THE GRIFFIN CAPITAL REDEVELOPMENT PROJECT IN THE CITY OF EL SEGUNDO, LOS ANGELES COUNTY, CALIFORNIA

Dear Mr. Samaras:

In consideration of the Griffin Capital Development Project (project), Michael Baker International staff completed a South Central Coastal Information Center (SCCIC) records search, field survey, literature and historical map review, and California Register of Historical Resources (California Register) evaluations to determine whether the project site contains significant historical resources as defined by CEQA Section 15064.5(a). Methods, results, and recommendations are summarized below; figures are provided in **Attachment 1**.

PROJECT DESCRIPTION

As part of the project, Griffin Capital is purchasing and redeveloping the following properties. The following is a list of buildings with build dates and proposed project activities:

233 Kansas Street (APN 4139-006-063)
The building was constructed in 1956 and is planned for demolition.

247 Kansas Street (APN 4139-006-064)
The building was constructed in 1948 and is planned for demolition.

348 Kansas Street (APN 4139-008-010)
The building was constructed in 1952 and is planned for demolition.

330 Kansas Street (APN 4139-008-056)
The building was constructed in 1980. Project plans include interior remodeling.

318 Kansas Street/1521 East Grand Avenue (APN 4139-008-047)
The building was constructed in 1997. Project plans include interior remodeling.

CULTURAL RESOURCES IDENTIFICATION METHODS

The results of the SCCIC records search, historical map search, pedestrian survey, and California Register evaluations are presented below.

2729 Prospect Park Drive, Suite 220, Rancho Cordova, CA 95670
P: (916) 361-8384 F: (916) 361-1574

SOUTH CENTRAL COASTAL INFORMATION CENTER

SCCIC staff conducted a records search (File No. 19983.5947) for the project on March 7, 2019. The SCCIC, as part of the California Historical Resources Information System, California State University, Fullerton, an affiliate of the California Office of Historic Preservation (OHP), is the official state repository of cultural resources records and reports for Los Angeles County. As part of the records search, the following federal and California inventories were reviewed:

- California Inventory of Historic Resources (OHP 1976).
- California Points of Historical Interest (OHP 1992 and updates).
- California Historical Landmarks (OHP 1996).
- Directory of Properties in the Historic Property Data File (OHP 2012). The directory includes the listings of the National Register of Historic Places (National Register), National Historic Landmarks, California Register, California Historical Landmarks, and California Points of Historical Interest.

Results

No cultural resources were identified within the project area; two were identified within a quarter-mile search radius as identified below. Neither resource is a historical resource as defined by CEQA Section 15064.5(a).

Resource Name/#	Description	OHP Status Code
P-19-192402	Railroad segment	N/A
1700 East Grand Avenue	Military Entrance Processing Station	6Y - Not eligible for inclusion in the National Register

One cultural resources study was completed in the project area and five were completed within the search radius, as identified below.

Author	Date	Title	In project area?	Resources identified in project area?
Wlodarski, Robert J.	1986	*Negative Archaeological Survey Report for O7-LA-1 23.4/25.2*.	No	No
Stickel, Gary E.	1993	*Draft Report a Phase I Cultural Resources Literature Search for the West Basin Water Reclamation Project.*	Yes	No

Author	Date	Title	In project area?	Resources identified in project area?
Maki, Mary K.	2005	*Records Search Results for the Chevron El Segundo Refinery, El Segundo, Los Angeles County.*	No	No
Bonner, Wayne H.	2007	*Direct APE Historic Architectural Assessment for Royal Street Communications, LLC Candidate LA2640A (SCE El Nido), 1703 East Mariposa Avenue, El Segundo, Los Angeles County, California.*	No	No
Harper, Caprice D. and Francesca Smith	2008	*Preliminary Cultural Resources Survey for the Formation of the Wiseburn Unified School District Project, Cities of El Segundo and Hawthorne, and Unincorporated Los Angeles County, CA.*	No	No
Metro	2011	*Crenshaw/LAX Transit Corridor Project Final Environmental Impact Report/Final Environmental Impact Statement.*	No	No

HISTORICAL MAP REVIEW

Michael Baker International staff reviewed literature and historic maps for archaeological, ethnographic, historical, and environmental information about the project area and the vicinity. Below is a list of resources reviewed, followed by a narrative description of the results for the project area.

- Official Map of Los Angeles County (Rowan 1888)
- Official Map of Los Angeles County (Wright 1898)
- Venice, Calif. 1:24,000 scale topographic quadrangle (USGS 1924)
- Venice, Calif. 1:24,000 scale topographic quadrangle (USGS 1934)
- Venice, Calif. 1:24,000 scale topographic quadrangle (USGS 1950)
- Aerial single-frame photograph ARM6018001L0487 (USGS 1960)
- Aerial single-frame photograph 1VASK00010031 (USGS 1963)
- Venice, Calif. 1:24,000 scale topographic quadrangle (USGS 1964)
- Aerial single-frame photograph ARM6631405R1241 (USGS 1966)

Results

The project area was originally within the boundaries of Rancho Sausal Redondo; however, no features are depicted in the project area until at least 1924. A 1924 topographic map depicts the Pacific Electric railroad through the project area. By 1950, the project area contains the railroad, and five buildings including 247 Kansas Street. A 1960 aerial of the project area depicts 233, 247, and 348 Kansas Street. The project area remains unchanged until 1980 when 330 Kansas Street was constructed. The railroad is no longer extant within the project area. (Rowan 1888; Wright 1898; USGS 1924, 1934, 1950, 1960, 1963, 1964, 1966; ParcelQuest 2019; Historicaerials.com 2019)

PEDESTRIAN SURVEY

Michael Baker International's architectural historian, Margo Nayyar, conducted a built environment field survey of the project area on March 21, 2019. The survey was conducted to photograph buildings proposed for demolition (233, 247, and 348 Kansas Street) in support of the California Register evaluations (see **Attachment 2**).

No archaeological survey was completed because exposed soils are not extant within the project area.

HISTORIC CONTEXT

Eric Lidow was born to a Jewish family in Vilnius, Lithuania, in 1912 during a period of Russian control. He later moved to Berlin, where he completed a master's degree in electrical engineering from the Technical University of Berlin. He reportedly helped several Jews escape Nazi Germany before WWII broke out. Lidow immigrated to New York in 1937, the same year he graduated (Jarvey 2013). Arriving in New York with only $14 and limited English skills, he found work washing dishes. After two years, Lidow moved to California where he started the Selenium Corporation of America in 1939 or 1940. After growing to over 200 employees, the company was acquired by the Sperry Corporation in 1944 (Sperry went on to become a major electronics and aerospace manufacturer). Lidow continued working with the company until 1946 (Funding Universe 2005; Jarvey 2013).

Eric's father Leon, a Holocaust survivor, immigrated to the Unites States by 1947. The father and son team established the International Rectifier Corporation (IR) in Inglewood, California, in August 1947 (Jarvey 2013). The startup began with a staff of six and focused on advancing the process Lidow had developed for manufacturing selenium rectifiers (rectifiers convert alternating electrical current [AC] to direct electrical current [DC]). The group worked to develop, improve, and manufacture electrical rectifiers, semiconductors, and photoelectric cells. Their specialized technology was "pioneering" and "predated the development of the transistor by more than four months" (though it does not appear that IR was assigned any patents during this period) (Funding Universe 2005; US Patent Office 2019).

Jagadish Chandra Bose invented the earliest "cat's whisker" semiconductor at the turn of the twentieth century, though it proved unreliable and problematic (a semiconductor is a solid

substance with a conductivity level somewhere between that of an insulator and that of a conductor; semiconductors are used to control flows of energy, depending upon conditions). Engineers at Bell Labs began improving the "cat's whisker" design starting in 1939; they gradually made improvements until the testing material, germanium crystals, had been perfected. As understanding of semiconducting evolved, scientists at labs and universities across the country began developing the technology for mass production. William Shockley, John Bardeen, and Walter Brattain are credited with inventing the first transistor (a semiconductor device) in 1947. Brattain filed three patents for this device in 1946 and early 1947 (US Patent Office, "Light-sensitive electric device," US2537255A, US2537256A, and US2537257A).

IR presumably coupled Bell Labs' findings with their own to take a strong foothold in the semiconductor industry. One source notes IR as "the oldest independent power semiconductor manufacturer in the world" prior to its merger with Infineon in 2015 (Funding Universe 2005). One of IR's inventions at the Inglewood location, in 1948, was selenium plates which were 50 percent larger than existing plates. In 1949, IR introduced selenium photo cells, selenium diodes, and selenium cartridge rectifiers. In 1950, it improved the "single crystal P-N junction technology" to allow rectifiers to be made smaller and withstand greater temperature extremes. It also introduced selenium stack rectifiers (for battery charging) by 1951 (Infineon.com 2019).

In 1951, IR relocated from its original location on Victoria Street in Inglewood, California, to 1521 East Grand Avenue in El Segundo. The address was formerly occupied by Kwikly Inc., a manufacturer of frozen meals (San Bernardino County Sun [SBCS] 1950:14). The building was demolished sometime between 1994 and 1997. In the 1950s, IR gained momentum, and the new home in El Segundo provided greater space for expanding facilities. At the time, the Pacific Electric Railroad fronted IR's property, making it a strategic location. The company soon owned buildings at over 15 addresses along Kansas Street, East Grand Avenue, Nevada Street, and Center Street.

Known International Rectifier Addresses in El Segundo	
Address	**Approximate construction date and notes**
120 Kansas Street	1958
145 Kansas Street	1957
222 Kansas Street	1960 - New 80,000-square-foot facility begins production.
223 Kansas Street	1955
233 Kansas Street	1956
247 Kansas Street	1948

Known International Rectifier Addresses in El Segundo	
Address	**Approximate construction date and notes**
318 Kansas Street	Unknown
330 Kansas Street	1979 - IR breaks ground for HEXFET wafer fabrication.
337 Kansas Street	Unknown
340 Kansas Street	Unknown
344 Kansas Street	Unknown
348 Kansas Street	1952
1111 E Grand Avenue	1959 - 8,000 square foot building used by IR's Astro-Power Division to produce solar energy converters.
1521 E Grand Avenue	1950 - original building; 1997 – new building.
200 Nevada Street	1955 - used as a machine shop.
201 Nevada Street	1955 - built to produce selenium rectifiers for the radio and television industry.
200 Center Street	1959 - IR opens pilot plant for the manufacture of encapsulated miniature silicon diodes.
(El Segundo Herald 1983:1)	

Innovations during the 1950s included the "technological leap" from selenium to germanium-based rectifiers in 1954, and silicon-based rectifiers in 1959. The silicon-based rectifier was "small[er] than a thimble," and "replaces other units up to 100 times larger" (Los Angeles Times 1959). The company owned patents to at least 40 inventions during the 1950s, primarily involving rectifiers, photoelectric energy, and selenium photo electric cells (US Patent Office 2019). In 1957, IR built a branch company in Japan, followed by another subsidiary in Great Britain in 1958 (Funding Universe 2005). In 1959, IR was awarded a $500,000 contract with Lockheed Martin's Aircrafts, Missiles, and Space Division to work on U.S. space program projects. Specifically, the contract was to build "silicon solar cells that convert sunlight energy into electrical currents" (SBCS 1959:6).

IR debuted "the world's first" solar-powered car in 1960. Additional international branches were established in Italy in 1961, India in 1965, Canada in 1966, and Mexico in 1973. In the late 1960s, competitors began producing silicon control rectifiers, leading to financial instability. Eric's sons Derek and Alexander joined IR in 1975 and 1977, at the same time the semiconductor industry was undergoing a substantial transformation in technology. Until this point, rectifiers functioned primarily using bipolar transistors, but the industry was shifting toward using power MOSFETs (metal-oxide-semiconductor-field-effect-transistor), which were "more efficient, faster, and smaller" than bipolars (Funding Universe 2005). Alexander Lidow introduced the HEXFET-Power-MOSFET, with a hexagonal shape, in 1979. The product helped make energy use more efficient; it eventually became IR's staple product, with IR controlling over half the power-MOFSET market. In 1987, the success of this invention led to construction of HEXFET America, an $82 million production plant in Temecula, California (Funding Universe 2005).

In 1989, Eric Lidow divided the company, giving control of one half to each son. The split did not provide positive results for the company and its clients; thus, in 1992, the company reunified. Expansion continued as the Temecula plant was enlarged in 1997, followed by the construction of a manufacturing plant in Wales in 1998. Alexander Lidow became the CEO in 1999, which ushered in unprecedented growth. IR began to acquire other companies, giving the company new technology that enabled it to expand its aerospace and defense markets. In 2004, sales surpassed $1 billion (Funding Universe 2005). Finally, Infineon Technologies, headquartered in Neubiberg, Germany, acquired IR in 2015 for $3 billion (Mil and Aero Staff 2015).

During its 68-year span, IR was the assignor to over 2,000 patents, many of which now belong to Infineon.

Architecturally, the buildings at 233, 247, and 348 Kansas Street are modest examples Contemporary-style architecture. They display many of the identifying features such as low-pitched gable roof with overhanging eaves, exposed roof beams, curtain walls, and use of natural materials such as brick. However, prominent examples of the Contemporary style are located throughout El Segundo and Los Angeles County including the Scientific Data Systems Corporation (SDS), Manufacturing Building (built 1965-1966) at 555 South Aviation Boulevard in El Segundo (PCAD 2019a). It was designed by the influential architectural firm, Craig Ellwood and Associates, and consisted of 260,000 square feet of manufacturing space, and was:

> constructed with tilt-up concrete panels attached to an exposed exterior structural system of steel columns. The administration and factory spaces are unified through similar materials, finishes and design concept based upon structure. Craig Ellwood and Associates designed the SDS Administration Engineering Building, 701 South Aviation Boulevard, El Segundo based on the ideas of the earlier SDS building, but without the exposed structure attached to the exterior. The square floor plan was divided into a grid by structural columns and had a central atrium. Ellwood designed two other buildings for SDS between 1966-1968 using the same materials, finishes, and structure as the first two facilities. The four SDS building all located adjacent to each other form a cohesive campus with a holistic

Modern design and without architectural or spatial hierarchy. Other notable Modern factory buildings designed by Craig Ellwood's office are the Xerox Corporation Manufacturing Facility (1967) located at 800 E. Bonita Ave, Pomona, (demolished), and the Torrington Manufacturing Company (1953) located at 16300 Roscoe Boulevard, Van Nuys, (demolished). The Magnavox Building (1960) in Torrance, designed by Torrance Risley and Gould, and the Firestone Store, Offices and Warehouse (1958) in Commerce designed by Pereira & Luckman are also good example of post-World War II Modern factories in the Los Angeles area. (PCR 2009:4-5)

Scientific Data Systems (now Xerox), El Segundo, California, designed by Craig Ellwood and Associates (1965-1966)

A similar contemporary-style manufacturing building was constructed in 1960 at 222 Kansas Street (demolished circa 2009) and designed by the California firm Thonis, Harrison, & Wolfe. Despite the stylistic similarities, it is not known whether 233, 247, or 348 Kansas Street buildings were designed by the same firm. Even so, Thonis, Harrison & Wolfe does not appear to have gained particular significance during its tenure because it is not listed in the Pacific Coast Architecture Database of significant architectural firms or identified during electronic database searches (PCAD 2019b; google.com 2019).

CALIFORNIA REGISTER EVALUATIONS

The buildings located at 233 Kansas Street, 247 Kansas Street, and 348 Kansas Street were evaluated and recommended ineligible for inclusion in the California Register. See **Attachment 2** for the complete individual evaluations presented on DPR 523 forms.

233 Kansas Street

Criterion 1 – The building at 233 Kansas Street was constructed circa 1956, apparently as a new headquarters building for IR. This date is corroborated by historical aerial photographs and historical mapping, as well as visual inspection. It operated as IR's headquarters until 1968, at which time the company's executives moved to the Charles Luckman & Associates Building (9220 Sunset Boulevard, West Hollywood, CA) in order to be closer to the firms with whom they

conducted business (Los Angeles Times 1968:129). The building also served as home to the company's Semiconductor Division for many years. It is not known which, if any, of IR's products were invented or produced in this building.

In its 68-year span, IR had grown into a "worldwide provider of analog, digital, and mixed signal chips that convert electricity into power for electronics, computers, appliance and cars," among many other inventions. In 2013, the company had almost 5,000 employees and a market cap of $1.32 billion (Jarvey 2013). IR was also the assignor to over 2,000 patents by the time it merged with Infineon in 2015. While IR was a formidable electronics company, its inventions, patents, and influence over the rectifier and semiconductor niche do not appear to have made a significant contribution to the broad patterns of our history. Other companies, labs, and engineers are credited with introducing the basic concepts of IR's technologies, including rectifiers, solar cells, and transistors. For example, Bell Labs in New Jersey is credited with introducing the transistor, and solar cells were developed by many scientists, including Einstein, since the 1880s.

Further, IR does not appear to have been significant at a local level, within the community of El Segundo. El Segundo began to develop alongside Standard Oil's second oil refinery, in 1910. In 1928, Mines Field (now known as Los Angeles International Airport) became the airfield to serve the expanding Los Angeles area. The airport bolstered the community's aerospace industry, leading to the establishment of many related enterprises. Thus, the oil refinery and the aerospace employed a large percentage of El Segundo's workers, and anchored the local economy. IR was not a small company, but its presence in El Segundo did not have a significant impact on the area because it is not documented as a significant employer or area business leader.

To be considered eligible for listing under Criterion 1, 233 Kansas Street must be associated with an event important to history, such as the IRs invention of selenium plates, single crystal P-N junction technology, selenium stack rectifiers, silicon solar cells, or the world's first solar-powered car, mentioned above. However, research failed to conclusively link the building with any of these inventions, and a property cannot eligible if its historic associations are speculative (NPS 1995:12).

Therefore, 233 Kansas Street does not appear eligible for inclusion in the California Register under Criterion 1 because it does not appear to be associated with an event that has made a significant contribution to the broad patterns of history at the local, state, or national level.

Criterion 2 – The Lidow family (including Leon, Eric, Alexander, and Derek) was instrumental in founding and growing IR into a multinational corporation. However, it is not evident that these individuals made a significant contribution to local, state, or national history. Therefore, 233 Kansas Street does not appear eligible under California Register Criterion 2.

Criterion 3 – The building at 233 Kansas Street is a modest example of contemporary-style architecture and is not comparable to local resources that represent excellent examples of the style including the Scientific Data Systems Corporation, Manufacturing Building in El Segundo, as described above. Furthermore, 233 Kansas Street is not known to represent the work of a master because the architect is unknown. Therefore, the building at 233 Kansas Street does not display a

distinctive type, period, or method of construction; does not represent the work of a master engineer or designer; and is not a superior example of an architectural style. The building is not eligible under California Register Criterion 3.

Criterion 4 – The property is not likely to yield valuable information that will contribute to our understanding of human history because the property is not and never was the principal source of important information pertaining to subjects such as mid-twentieth century offices. Therefore, the property does not appear eligible for listing under California Register Criterion 4.

Lastly, 233 Kansas Street maintains integrity of location, setting, design, materials, workmanship, feeling, but lacks association with a historic context. It appears largely unchanged since the time of construction.

247 Kansas Street

Criterion 1 – The building at 247 Kansas Street was constructed circa 1948. This date is corroborated by historical aerial photographs and historical mapping, as well as visual inspection. It is not known which, if any, of IR's products were invented or produced in this building.

In its 68-year span, IR had grown into a "worldwide provider of analog, digital, and mixed signal chips that convert electricity into power for electronics, computers, appliance and cars," among many other inventions. In 2013, the company had almost 5,000 employees and a market cap of $1.32 billion (Jarvey 2013). IR was also the assignor to over 2,000 patents by the time it merged with Infineon in 2015. While IR was a formidable electronics company, its inventions, patents, and influence over the rectifier and semiconductor niche do not appear to have made a significant contribution to the broad patterns of our history. Other companies, labs, and engineers are credited with introducing the basic concepts of IR's technologies, including rectifiers, solar cells, and transistors. For example, Bell Labs in New Jersey is credited with introducing the transistor and solar cells were developed by many scientists, including Einstein, since the 1880s.

Further, IR does not appear to have been significant at a local level, within the community of El Segundo. El Segundo began to develop alongside Standard Oil's second oil refinery, in 1910. In 1928, Mines Field (now known as Los Angeles International Airport) became the airfield to serve the expanding the Los Angeles area. The airport bolstered the community's aerospace industry, leading to the establishment of many related enterprises. Thus, the oil refinery and the aerospace employed a large percentage of El Segundo's workers, and anchored the local economy. IR was not a small company, but its presence in El Segundo did not have a significant impact on the town because it is not documented as a significant employer or area business leader.

To be considered eligible for listing under Criterion 1, 247 Kansas Street must be associated with an event important to history, such as the IRs invention of selenium plates, single crystal P-N junction technology, selenium stack rectifiers, silicon solar cells, or the world's first solar-powered car, mentioned above. However, research failed to conclusively link the building with any of these inventions, and a property cannot eligible if its historic associations are speculative (NPS 1995:12).

Therefore, 247 Kansas Street does not appear eligible for inclusion in the California Register of Historical Resources (California Register) under Criterion 1 because it does not appear to be associated with an event that has made a significant contribution to the broad patterns of history at the local, state, or national level.

Criterion 2 – The Lidow family (including Leon, Eric, Alexander, and Derek) was instrumental in founding and growing IR into a multinational corporation. However, it is not evident that these individuals made a significant contribution to local, state, or national history. Therefore, 247 Kansas Street does not appear eligible under California Register Criterion 2.

Criterion 3 – This building was constructed circa 1948, is a modest example of contemporary-style architecture and is not comparable to local resources that represent excellent examples of the style including the Scientific Data Systems Corporation, Manufacturing Building in El Segundo, as described above. Furthermore, 247 Kansas Street is not known to represent the work of a master because the architect is unknown. Therefore, the building at 247 Kansas Street does not display a distinctive type, period, or method of construction; does not represent the work of a master engineer or designer; and is not a superior example of an architectural style. The building is not eligible under California Register Criterion 3.

Criterion 4 – The property is not likely to yield valuable information that will contribute to our understanding of human history because the property is not and never was the principal source of important information pertaining to subjects such as mid-twentieth century offices. Therefore, the property does not appear eligible for listing under California Register Criterion 4.

Lastly, 247 Kansas Street maintains integrity of location, setting, design, materials, workmanship, feeling, but lacks association with a historic context. It appears largely unchanged since the time of construction.

In conclusion, 247 Kansas Street appears ineligible for listing in the California Register under Criteria 1, 2, 3, and 4 due to lack of association with a historic context. Additionally, the resource was evaluated in accordance with Section 15064.5(a)(2)–(3) of the CEQA Guidelines using the criteria outlined in Section 5024.1 of the California Public Resources Code, and it is not a historical resource for the purposes of CEQA.

348 Kansas Street

Criterion 1 – The building at 348 Kansas Street was constructed circa 1952; this date is corroborated by historical aerial photographs and historical mapping, as well as visual inspection. It is not known which, if any, of IR's products were invented or produced in this building.

In its 68-year span, IR had grown into a "worldwide provider of analog, digital, and mixed signal chips that convert electricity into power for electronics, computers, appliance and cars," among many other inventions. In 2013, the company had almost 5,000 employees and a market cap of

$1.32 billion (Jarvey 2013). IR was also the assignor to over 2,000 patents by the time it merged with Infineon in 2015. While IR was a formidable electronics company, its inventions, patents, and influence over the rectifier and semiconductor niche do not appear to have made a significant contribution to the broad patterns of our history. Other companies, labs, and engineers are credited with introducing the basic concepts of IR's technologies, including rectifiers, solar cells, and transistors. For example, Bell Labs in New Jersey is credited with introducing the transistor and solar cells were developed by many scientists, including Einstein, since the 1880s.

Further, IR does not appear to have been significant at a local level, within the community of El Segundo. El Segundo began to develop alongside Standard Oil's second oil refinery, in 1910. In 1928, Mines Field (now known as Los Angeles International Airport) became the airfield to serve the expanding the Los Angeles area. The airport bolstered the community's aerospace industry, leading to the establishment of many related enterprises. Thus, the oil refinery and the aerospace employed a large percentage of El Segundo's workers, and anchored the local economy. IR was not a small company, but its presence in El Segundo did not have a significant impact on the town because it is not documented as a significant employer or area business leader.

To be considered eligible for listing under Criterion 1, 348 Kansas Street must be associated with an event important to history, such as the IRs invention of selenium plates, single crystal P-N junction technology, selenium stack rectifiers, silicon solar cells, or the world's first solar-powered car, mentioned above. However, research failed to conclusively link the building with any of these inventions, and a property cannot eligible if its historic associations are speculative (NPS 1995:12).

Therefore, 348 Kansas Street does not appear eligible for inclusion in the California Register of Historical Resources (California Register) under Criterion 1 because it does not appear to be associated with an event that has made a significant contribution to the broad patterns of history at the local, state, or national level.

Criterion 2 – The Lidow family (including Leon, Eric, Alexander, and Derek) was instrumental in founding and growing IR into a multinational corporation. However, it is not evident that these individuals made a significant contribution to local, state, or national history. Therefore, 348 Kansas Street does not appear eligible under California Register Criterion 2.

Criterion 3 – This building at 348 Kansas Street is a modest example of contemporary-style architecture and is not comparable to local resources that represent excellent examples of the style, including the Scientific Data Systems Corporation, Manufacturing Building in El Segundo, as described above. Furthermore, 348 Kansas Street is not known to represent the work of a master because the architect is unknown. Therefore, the building at 348 Kansas Street does not display a distinctive type, period, or method of construction; does not represent the work of a master engineer or designer; and is not a superior example of an architectural style. The building is not eligible under California Register Criterion 3.

Criterion 4 – The property is not likely to yield valuable information that will contribute to our understanding of human history because the property is not and never was the principal source

of important information pertaining to subjects such as mid-twentieth century offices. Therefore, the property does not appear eligible for listing under California Register Criterion 4.

Lastly, 348 Kansas Street maintains integrity of location, setting, design, materials, workmanship, feeling, and association. It appears largely unchanged since the time of construction.

In conclusion, 233, 247, and 348 Kansas Street appear ineligible for listing in the California Register under Criteria 1, 2, 3, and 4 due to lack of association with a historic context. Additionally, the resources were evaluated in accordance with Section 15064.5(a)(2)–(3) of the CEQA Guidelines using the criteria outlined in Section 5024.1 of the California Public Resources Code, and they are not historical resources for the purposes of CEQA.

FINDINGS

The SCCIC records search, field survey, historic map review, and California Register evaluations identified no historical resources as defined by CEQA Section 15064.5(a) within the project area.

PREPARERS' QUALIFICATIONS

This report and California Register evaluations were prepared by Michael Baker International Architectural Historian Margo Nayyar. Ms. Nayyar is a cultural resources manager with eight years of cultural resources management experience in California. Her experience includes built environment surveys, historic context development, archival research, evaluation of historic-era resources using guidelines outlined in the National, California, and various local registers; preparation of cultural resources technical studies pursuant to CEQA and Section 106 of the NHPA; municipal preservation planning; and providing Certified Local Government training to interested local governments. She also specializes in producing HABS/HAER/HALS (Historic American Buildings Survey, the Historic American Engineering Record, and Historic American Landscapes Survey) heritage documentation. Ms. Nayyar meets the Secretary of the Interior's Professional Qualification Standards for history and architectural history.

The California Register evaluations were also completed by Michael Baker International Architectural Historian Katherine Molnar. Ms. Molnar is a cultural resources manager with 12 years of experience completing historic resource surveys, National Register and California Register evaluations, historic context development, criteria of effects evaluations, programmatic agreement preparation, archival records research, deed research, and HABS/HAER documentation. Ms. Molnar meets the Secretary of the Interior's Professional Qualification Standards for history and architectural history.

Sincerely,

Margo Nayyar, MA
Architectural Historian

Attachments:
Attachment 1 – Figures
Attachment 2 – DPR Forms

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Appendix B

Preliminary Geotechnical Investigation Reports and Addendums

ALBUS-KEEFE & ASSOCIATES, INC.
GEOTECHNICAL CONSULTANTS

December 19, 2019
J.N.: 2858.00

Mr. William Messori
Griffin Capital Company, LLC
Griffin Capital Plaza
1520 E. Grand Avenue
El Segundo, California 90245

Subject: **Preliminary Geotechnical Investigation Report, Proposed Commercial Development, Northeast Corner of E. Grand Avenue and Kansas Street, El Segundo, California.**

Dear Mr. Messori,

Pursuant to your request, ***Albus-Keefe & Associates, Inc***. is pleased to present to you our geotechnical investigation report for the subject development. This report presents a summary of our review of readily available geologic literature and referenced geotechnical reports, subsurface exploration, laboratory testing, and engineering analyses. Conclusions and recommendations relative to the proposed site development are also presented in this report based on the findings of our work.

We appreciate this opportunity to be of service to you. If you should have any questions regarding the contents of this report, please do not hesitate to call.

Sincerely,

ALBUS-KEEFE & ASSOCIATES, INC.

David E. Albus
Principal Engineer

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1.0 INTRODUCTION

1.1 PURPOSE AND SCOPE

The purposes of this investigation were to evaluate the subsurface soil conditions within the project area, to evaluate their engineering characteristics, and to provide preliminary geotechnical conclusions and recommendations relevant to design and construction of the proposed development. The scope of this investigation included the following:

- Review of readily available geologic and seismic data for the site and surrounding area,
- Exploratory drilling and soil sampling,
- Laboratory testing of selected soil samples,
- Engineering analyses of data obtained from our review, exploration and laboratory testing,
- Evaluation of site seismicity, liquefaction potential, bearing capacity, earth pressures and settlement potential,
- Preparation of this report.

1.2 SITE LOCATION AND DESCRIPTION

The site is located at the northeast corner of E. Grand Avenue and Kansas Street, El Segundo, California. The site is bounded by E. Grand Ave. to south, Kansas St. to west, East Holly Ave. to north, and Washington St. to east. The rectangular-shaped site encompasses approximately 3.24 acres of land and consists of 6 parcels of land. The site is presently developed with three one- to two-story industrial buildings. The building within the northwest portion the site include a partial subterranean level. The remainder of the property is improved with asphalt-paved parking and drive aisles.

Based on GoogleEarth (2019) ground surface elevations range from approximately 123 ft Mean Sea Level (MSL) at the middle of the east property line to about 115 ft MSL at the northeast and southeast corners of the site. Along the west property line, elevations range from approximately 119 ft MSL at the southwest corner to about 102 ft MSL close to the existing building at the northwest corner of the site.

Drainage is generally directed to the north as sheet flow toward Kansas Street and East Holly Avenue. Vegetation is located within the landscape planters and consist of medium-sized shrubs, small to medium shrubs, and grass.

© 2019 Google

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SITE LOCATION MAP

Griffin Capital Company, LLC
1521 E. Grand Avenue,
City of El Segundo, California

NOT TO SCALE

FIGURE 1

1.3 PROPOSED DEVELOPMENT

Based on our review of the referenced Conceptual Site Plan, we understand the site will be developed for commercial use consisting of two commercial buildings and a parking structure. Several alternatives have been provided that involve remodeling the existing two-story buildings or remodeling one building and constructing a new building. Various configurations of the building layouts have been provided with only the north half of the site requiring new construction. As much as 7-stories for the office building have been proposed. The proposed parking structure is proposed with 2 to 6 levels of parking.

No grading or structural plans were available in preparation of this report. However, we anticipate that some cut and filling of the site will be required to achieve future surface configuration and we expect future foundation loads will be moderate.

2.0 INVESTIGATION

2.1 SUBSURFACE INVESTIGATION

Subsurface exploration for this investigation was conducted on December 11, 2019 and consisted of drilling three soil borings to depths ranging from 31.5 feet to 51.5 feet below the existing ground surface (bgs) using a truck-mounted, continuous flight, hollow-stem-auger drill rig. Representatives of Albus-Keefe & Associates, Inc. logged the exploratory borings. The locations of the borings are depicted on the enclosed Geotechnical Map, Plate 1.

Bulk, relatively undisturbed and Standard Penetration Test (SPT) samples were obtained at selected depths within the exploratory borings for subsequent laboratory testing. Relatively undisturbed samples were obtained using a 3-inch O.D., 2.5-inch I.D., California split-spoon soil sampler lined with brass rings. SPT samples were obtained from the boring using a standard, unlined SPT soil sampler. During each sampling interval, the sampler was driven 18 inches with successive drops of a 140-pound automatic hammer falling 30 inches. The number of blows required to advance the sampler was recorded for each six inches of advancement. The total blow count for the lower 12 inches of advancement per soil sample is recorded on the exploration log. Samples were placed in sealed containers or plastic bags and transported to our laboratory for analyses. The borings were backfilled with a cement-bentonite mix upon completion of sampling.

One additional boring was drilled adjacent to exploratory boring B-6 for percolation testing. A general discussion on the feasibility of storm water infiltration is provided in this report. However, details and results of percolation tests are reported under a separate cover.

2.2 LABORATORY TESTING

Selected samples obtained from our subsurface exploration were tested in our soil laboratory. Tests consisted of maximum dry density and optimum moisture content, in-situ moisture content and dry density, expansion index, soluble sulfate content, consolidation, direct shear strength, grain-size analysis, chloride content, minimum resistivity, and pH. A description of laboratory test criteria and a summary of the test results are presented in Appendix B.

3.0 GEOLOGIC CONDITIONS

3.1 GEOLOGIC SETTING

The subject site is situated within a portion of the western Los Angeles Basin that is uniquely characterized by an extensive coastal belt of Late Pleistocene-age sand dune deposits extending to significant depth. The dune deposits were likely deposited in a near shore, non-marine environment and primarily include wind-blown sands that are locally mantled with fine-grained silts and clays associated with lacustrine deposition during episodic periods of severe flooding. The dune sands are generally granular and non-expansive. However, the clay-rich lacustrine deposits typically exhibit moderate to high expansive properties.

3.2 SITE-SPECIFIC SOIL CONDITIONS

Descriptions of the earth materials encountered during our investigation are summarized below and are presented in detail on the Exploration Logs presented in Appendix A.

Soil materials encountered at the site consisted of previously placed engineered fills (Af) underlain by old sand dune deposits (Qos). In general, the fill materials are present in the upper 6 to 7 feet and consisted of brown fine-to-medium sand, sand with silt, and silty sand. The fill soils are generally slightly moist and medium dense to very dense with some pores and rootlets present.

Old sand dune deposits (Qso) were encountered below the artificial fill and extending to at least 51.5 feet below existing ground surface. The old dune sand is mostly composed of silty sands and fine- to medium-grained sand with little or no fines content. These deposits were slightly moist, light brown to tan brown, and dense to very dense. The upper surface of the deposit can be weathered and somewhat porous.

A more detailed description of the interpreted soil profile at each of the boring locations, based upon the soil cuttings and soil samples, are presented in Appendix A. The stratigraphic descriptions in the logs represent the predominant materials encountered during investigation. Relatively thin, often discontinuous layers of different material may occur within the major divisions.

3.3 GROUNDWATER CONDITIONS

Groundwater was not encountered by this firm at the time of explorations to the maximum depth explored (51.5 feet below existing ground surface). A review of the referenced Seismic Hazard Zone Report 036 (Venice 7.5-Minute Quadrangle), indicates that historical high groundwater level for the general site area is greater than 50 feet below the existing ground surface.

3.4 FAULTING

Geologic literature does not indicate the presence of active faulting within the site. The site does not lie within an "Earthquake Fault Zone" as defined by the State of California in the Alquist-Priolo

Earthquake Fault Zoning Act. Table 3.1 provides a summary of all the known active faults within 10 miles of the site.

TABLE 3.1
SUMMARY OF ACTIVE FAULTS

Name	Distance (miles)	Slip Rate (mm/yr.)	Preferred Dip (degrees)	Slip Sense	Rupture Top (km)	Fault Length (km)
Newport-Inglewood, alt 1	3.92	1	88	strike slip	0	65
Newport Inglewood Connected alt 1	3.92	1.3	89	strike slip	0	208
Palos Verdes	4.44	3	90	strike slip	0	99
Palos Verdes Connected	4.44	3	90	strike slip	0	285
Newport Inglewood Connected alt 2	4.65	1.3	90	strike slip	0	208
Puente Hills (LA)	8.53	0.7	27	thrust	2.1	22
Santa Monica Connected alt 2	8.53	2.4	44	strike slip	0.8	93
Santa Monica Connected alt 1	9.06	2.6	51	strike slip	0	79
Santa Monica, alt 1	9.06	1	75	strike slip	0	14

4.0 ANALYSES

4.1 SEISMICITY

We have performed probabilistic seismic analyses utilizing the Applied Technology Council (ATC) online application conforming with ASCE7-10. From our analyses, we obtain a PGA of 0.597 in accordance with Figure 22-7 of ASCE 7-10. The site amplification factor, F_{PGA}, for Site Class D at this range of PGA is 1.0. Therefore, site modified peak ground acceleration, PGA_M = 1.0 x 0.597 = 0.60g. The mean event associated with a probability of exceedance equal to 2% over 50 years has a moment magnitude of 6.8 and the mean distance to the seismic source is 7.3 miles.

4.2 STATIC SETTLEMENT

As of the time of this report, no loads or foundation configurations are available. Nevertheless, we have performed settlement analyses for typical column loads, wall loads, and footing dimensions anticipated for this project. The subsurface profile and parameters needed for settlement analyses were

developed based on the results of our field investigation and material characteristics established from lab test results.

The existing fill materials are only moderately compacted and we have assumed will be recompacted as an engineered fill. The underlying dune sand deposits are generally very dense but exhibit a weathered zone in one of our borings (B-4). At this location, the weathered zone exhibits the characteristics of hydrocollapse (consolidation upon wetting). At this location, we estimate hydrocollapse of the weathered zone could result in about 2 inches of settlement under future foundation loads due to wetting. Where the foundations would be supported by compacted fill or unweathered dune sands, we estimate settlement due to future foundation loads could be up to about ¾ inches for a column load of about 800 kips and bearing pressure of 3,500 psf. We estimate a total settlement of ½ inch for a continuous footing with a width of 3.5 feet and wall load of 12 kips/ft.

4.3 LIQUEFACTION

Engineering research of soil liquefaction potential (Youd, et al., 2001) indicates that generally three basic factors must exist concurrently in order for liquefaction to occur. These factors include:

- A source of ground shaking, such as an earthquake, capable of generating soil mass distortions.
- A relatively loose silty and/or sandy soil.
- A relative shallow groundwater table (within approximately 50 feet below ground surface) or completely saturated soil conditions that will allow positive pore pressure generation.

The liquefaction susceptibility of the onsite soils was evaluated by analyzing the potential concurrent occurrence of the above-mentioned three basic factors. The liquefaction evaluation for the site was completed under the guidance of Special Publication 117A: Guidelines for Evaluating and Mitigating Seismic Hazards in California (CDMG, 2008).

Historical high groundwater is anticipated at a depth of at least 50 feet below the site. Therefore, the potential for liquefaction to occur beneath the site is considered very low. Furthermore, the site is not located within a mapped California Geologic Survey liquefaction hazard zone.

5.0 CONCLUSIONS

5.1 FEASIBILITY OF PROPOSED DEVELOPMENT

From a geotechnical point of view, the proposed site development is considered feasible provided that the recommendations presented in this report are incorporated into the design and construction of the project. Furthermore, it is also our opinion that the proposed development will not adversely impact the stability of adjoining properties if the recommendations presented in this report are incorporated into site construction.

5.2 GEOLOGIC HAZARDS

5.2.1 Ground Rupture

No active faults are known to project through the site nor does the site lie within the bounds of an "Earthquake Fault Zone" as defined by the State of California in the Alquist-Priolo Earthquake Fault Zoning Act. As such, the potential for ground rupture due to a fault displacement beneath the site is considered very low.

5.2.2 Ground Shaking

The site is situated in a seismically active area that has historically been affected by generally moderate to occasionally high levels of ground motion. The site lies in relative close proximity to several active faults; therefore, during the life of the proposed developments, the property will probably experience similar moderate to occasionally high ground shaking from these fault zones, as well as some background shaking from other seismically active areas of the Southern California region. Potential ground accelerations have been estimated for the site and are presented in Section 4.1 of this report. Design and construction in accordance with the current California Building Code (CBC) requirements is anticipated to address the issues related to potential ground shaking.

5.2.3 Landsliding

Geologic hazards associated with landsliding are not anticipated at the site.

5.2.4 Liquefaction

The depth to historic high groundwater reported by the CGS in the site vicinity is greater than 50 feet below the ground surface (Seismic Hazard Zone Report 036) and the site is underlain by dense natural deposits. As such the potential for liquefaction at the site is considered very low. Furthermore, the site is not located within a mapped California Geologic Survey liquefaction hazard zone.

5.3 STATIC SETTLEMENT

Provided the recommendations in this report are implemented, total static settlement is estimated to be less than 1 inch for proposed structures provided the maximum static column load is about 1,000 kips and the maximum wall load is about 15 kips/ft. Differential settlement is anticipated to be on the order of 1/2 inch over a distance of 30 feet. These values are considered within tolerable limits of proposed structures.

5.4 SOIL EXPANSION

Based on our laboratory test results and the USCS visual manual classification, the near-surface soils are generally anticipated to possess a **Very Low** expansion potential. Testing for soil expansion will be required subsequent to rough grading and prior to construction of foundations and other concrete work to confirm these conditions. Expansive soils can undergo volume changes when they become wetted or dried. These changes can affect the overlying structures and other surface improvements. Given the expansion potential anticipated at the site, only nominal steps will be needed to mitigate adverse effects such as minor steel reinforcing of foundations and slabs, and moisture preparation and jointing details for flatwork.

5.5 EXCAVATION AND MATERIAL CHARACTERISTICS

Existing artificial fill (typically 6 to 7 feet thick) and weathered, porous portions of the Dune Sands (up to about 4 feet thick where present) are anticipated to be unsuitable to support proposed site development in their current condition. This condition can be mitigated by removing and recompacting these materials. Once these materials are removed, they are anticipated to be suitable for reuse as compacted fill.

Temporary construction slopes and trench excavations can likely be cut vertically up to a height of 4 feet within the onsite materials provided that no surcharging of the excavations is present. Temporary excavations greater than 4 feet in height will likely require side laybacks to 1:1 (H:V) or flatter to mitigate the potential for sloughing. Portions of the site below a depth of 8 feet may encounter friable sands that will tend to slough or run. Cuts in these materials will likely require a layback of 1.5:1 (H:V) at any height.

Demolition of the existing site improvements will generate a considerable amount of concrete and asphaltic concrete debris. Significant portions of concrete and asphaltic concrete debris can likely be reduced in size to less than 4 inches in maximum dimension and incorporated within fill soils during earthwork operations.

Onsite disposal systems, clarifiers, and other underground improvements may be present on site. If encountered during future rough grading, these improvements will require proper abandonment or removal.

Off-site improvements, streets, and rights-of-way exist near and along the property lines. Furthermore, some of the existing improvement at the site may be remain in place. The presence of the existing offsite improvements and onsite improvements to remain in place will limit removals of unsuitable materials. Special grading techniques, such as slot cutting or shoring may be required where these conditions limit the lateral extent of removals. Shoring will likely be required for excavation for the subterranean level near property lines.

Subsurface soils are anticipated to be relatively easy to excavate with conventional heavy earthmoving equipment. Removal and recompaction of the site materials will result in some moderate shrinkage and subsidence. Design of site grading will require consideration of this loss when evaluating earthwork balance issues.

The existing near surface soils are typically below optimum moisture content. As such, moisturizing of site materials will likely be required prior to placement as compacted fill

5.6 SHRINKAGE AND SUBSIDENCE

Volumetric changes in earth quantities will occur when excavated onsite soil materials are replaced as properly compacted fill. We estimate the existing artificial fills and upper collapsible Dune Sand deposits will shrink approximately 10 to 20 percent. Reprocessing of removal bottoms are anticipated to result in negligible subsidence. The estimates of shrinkage and subsidence are intended as an aid for project engineers in determining earthwork quantities. However, these estimates should be used

with some caution since they are not absolute values. Contingencies should be made for balancing earthwork quantities based on actual shrinkage and subsidence that occurs during the grading process.

5.7 INFILTRATION OF STORM WATER

Preliminary testing was performed to evaluate the feasibility of onsite infiltration. Based on our exploration and testing, the site is feasible for infiltration of storm water using either shallow basins, shallow chamber systems, or dry wells. Soils in the upper 20 feet are anticipated to provide moderate infiltration rates which would apply to shallow basins and chamber systems. Soils below 20 feet exhibit high infiltration rates which lend well to the use of dry wells.

Provided the site is developed following the recommendations provided in the next sections, infiltration of storm water is not anticipated to worsen any existing geotechnical hazards such as liquefaction, site stability, or expansive soils. The locations of infiltration BMPs will require appropriate setbacks from property lines and structures. Specific design and construction recommendations will be provided under a separate report.

6.0 RECOMMENDATIONS

6.1 EARTHWORK

6.1.1 General Earthwork and Grading Specifications

All earthwork and grading should be performed in accordance with all applicable requirements of CAL/OSHA and the grading requirements of the City of El Segundo, California, in addition to recommendations presented herein.

6.1.2 Pre-Grade Meeting and Geotechnical Observation

Prior to commencement of grading, we recommend that a meeting be held between the owner, grading contractor, civil engineer, City Inspector, and geotechnical consultant to discuss proposed work and logistics. We also recommend that a geotechnical consultant be retained to provide soil engineering and engineering geologic services during site grading. This is to observe compliance with the design specifications or recommendations, and to allow design changes in the event that subsurface conditions differ from those anticipated prior to the start of construction. If conditions are encountered during construction that appears to be different than those indicated in this report, the project geotechnical consultant should be notified immediately. Design and construction revisions may be required.

6.1.3 Site Clearing

Except for the existing buildings and facilities marked to remain, all existing surface improvements, vegetation and other deleterious materials should be removed from the areas to be developed. Existing underground utility lines within the project area that will be left in place and that fall below a 1:1 (H:V) plane projected down from the edges of footings may be subject to surcharge loads. Under such conditions, this office should be made aware of these conditions for evaluation of potential surcharging. Supplemental recommendations may be required to protect such improvements in place.

The project geotechnical consultant should be notified at the appropriate times to provide observation services during clearing operations to verify compliance with the above recommendations. Voids created by clearing should be left open for observation by the geotechnical consultant. Should any unusual soil conditions or subsurface structures be encountered during site clearing or grading that are not described or anticipated herein, these conditions should be brought to the immediate attention of the project geotechnical consultant for corrective recommendations.

6.1.4 Ground Preparation (Removals and Over-excavations)

All existing artificial fill should be removed and re-compacted below structures. These materials are generally anticipated to be 6 to 7 feet in thickness across the site. In addition, porous and weathered portions of the dune sand deposits should be removed and recompacted within the limits of structures. Where encountered, these materials were up to about 4 feet in thickness. These removals should extend laterally beyond the limits of foundations a distance equal to or greater than the depth of removal.

Within structural paving areas, the existing soils should be removed to a depth of 1 foot below subgrade. These removals should extend to the limits of pavement and curbs, if present.

No removals or over excavation is deemed necessary within future landscape or flatwork areas.

All removals should be evaluated by the geotechnical consultant during grading to confirm the exposed conditions are as anticipated. Following removals, the exposed grade should first be scarified to a depth of 6 inches; moisture conditioned to slightly over the optimum moisture content, and then re-compacted to at least 90 percent of the Modified Proctor standard.

6.1.5 Fill Placement

Materials excavated from the site may be used as fill provided they are free of deleterious materials and oversized materials (particles greater than 4 inches in maximum dimension). All fill should be placed in lifts not greater than 8 inches in loose thickness, moisture conditioned to at least 110% of the optimum moisture content, and compacted. Fill should be compacted to at least 90 percent of the laboratory standard. The laboratory standard for maximum dry density and optimum moisture content for each soil type used should be determined in accordance with ASTM D 1557. Fills should be maintained relatively level and should not slope more than 20 to 1 (H:V). Where fills will be placed on ground that slopes at 5 to 1 (H:V) or greater, the ground surface should be excavated to create a series of level benches prior to placement of fill. Each lift should be treated in a similar manner. Subsequent lifts should not be placed until the project geotechnical consultant has approved the preceding lift.

6.1.6 Temporary Excavations

Temporary construction slopes in native soils and engineered compacted fills may be cut vertically up to a height of 4 feet provided that no surcharging (such as adjacent buildings, walls, etc.) of the excavations are present. Temporary slopes over 4 feet but no more than 8 feet in height should be laid back at a maximum gradient of 1:1 (H:V) or properly shored. Excavations greater than 8 feet in depth are anticipated to encounter friable sands. Excavations should be laid back to a maximum gradient of 1.5:1 (H:V) within these materials.

Excavations should not be left open for prolonged periods of time. The project geotechnical consultant should observe all temporary cuts to confirm anticipated conditions and to provide alternate recommendations if conditions dictate.

Where temporary excavations can not be laid back in accordance with the recommendation above, slot cutting, shoring, underpinning, or other methods should be used. The geotechnical consultant should provide specific recommendations for these options after specific design plans have been developed.

6.2 SEISMIC DESIGN PARAMETERS

For design of the project in accordance with Chapter 16 of the 2016 CBC, the following table presents the seismic design factors:

TABLE 6.1
2016 CBC Seismic Design Parameters

Parameter	Value
Site Class	D
Mapped MCE Spectral Response Acceleration, short periods, S_S	1.628
Mapped MCE Spectral Response Acceleration, at 1-sec. period, S_1	0.602
Site Coefficient, Fa	1.0
Site Coefficient, Fv	1.5
Adjusted MCE Spectral Response Acceleration, short periods, S_{MS}	1.628
Adjusted MCE Spectral Response Acceleration, at 1-sec. period, S_{M1}	0.903
Design Spectral Response Acceleration, short periods, S_{DS}	1.085
Design Spectral Response Acceleration, at 1-sec. period, S_{D1}	0.602
Long Period Transition Period, T_L (sec)	8
Seismic Design Category- Risk Category I or II	D

MCE = Maximum Considered Earthquake

6.3 PRELIMINARY FOUNDATION DESIGN

6.3.1 General

The following recommendations are presented for preliminary design purposes. These recommendations have been based on the site materials exposed during our investigation and the anticipated structural loads. Final recommendations should be provided by the project geotechnical consultant following observation and testing of site materials during grading and review of structural loads and foundation plans prepared for the proposed site development. Depending upon actual site conditions and the proposed foundation loads, the recommendations provided herein may require modification.

6.3.2 Soil Expansion

The recommendations presented herein are based on soils with **Very Low** expansion potential. Following site grading, additional testing of site soils should be performed by the project geotechnical consultant to confirm the basis of these recommendations. If site soils with different properties are encountered, the recommendations contained herein may require modification.

6.3.3 Settlement

Provided site grading measures are performed as recommended herein, total and differential settlements are estimated to be limited to 1.0 inch and 0.5-inch over 30 feet, respectively.

The estimated magnitudes of total and differential settlement should be considered by the project's structural engineer in design of the proposed structures at the site. If the estimated values are considered beyond tolerable limits, then additional remedial earthwork measures may be required. Specific recommendations should be provided by the geotechnical consultant under such conditions.

6.3.4 Allowable Bearing Value

Provided site grading is performed as recommended herein, a bearing value of 2,000 pounds per square foot (psf) may be used for continuous and isolated footings founded at a minimum depth of 12 inches below the lowest adjacent grade and having a minimum width of 12 inches and 24 inches, respectively. The bearing value may be increased by 300 psf and 800 psf for each additional foot in width and depth, respectively, up to a maximum value of 4,000 psf. Recommended allowable bearing values include both dead and live loads and may be increased by one-third for wind and seismic forces.

6.3.5 Lateral Resistance

Provided site grading is performed as recommended herein, a passive earth pressure of 230 pounds per square foot per foot of depth (pcf) up to a maximum value of 1,150 pounds per square foot (psf) may be used to determine lateral bearing for footings. This value may be increased by one-third when designing for wind and seismic forces. A coefficient of friction of 0.35 times the dead load forces may also be used between concrete and the supporting soils to determine lateral sliding resistance. No increase in the coefficient of friction should be used when designing for wind and seismic forces.

The above values are based on footings placed directly against compacted fill. In the case where footing sides are formed, all backfill against the footings should be compacted to at least 90 percent of the Modified Proctor test according to ASTM standard (ASTM D 1557).

6.3.6 Conventional Slabs on Grade

Exterior and interior building footings may be founded at the minimum depths indicated in the California Building Code. All continuous footings should be reinforced with a minimum of two No. 4 bars, one top and one bottom. The structural engineer may require different reinforcement and should dictate if greater than the recommendations provided herein.

Interior isolated pad footings should be a minimum of 24 inches square and founded at minimum depths of 12 inches below the lowest adjacent final grade. Exterior isolated pad footings should be a

minimum of 24 inches square and founded at a minimum depth of 12 inches below the lowest adjacent final grade.

Interior concrete slabs constructed on grade should be a minimum 4 inches thick. However, if such slabs will be used for garage parking, they should have a minimum thickness of 5 inches. Slabs should be reinforced with No. 3 bars spaced 32 inches each way. Care should be taken to ensure the placement of reinforcement at mid-slab height. The structural engineer may recommend a greater slab thickness and reinforcement based on proposed use and loading conditions and such recommendations should govern if greater than the recommendations presented herein.

Concrete floor slabs in areas to receive carpet, tile, or other moisture sensitive coverings should be underlain with a moisture vapor retarder 10-mil Visqueen, or equal. The membrane should be properly lapped, sealed, and protected with at least 2 inches of sand having a sand equivalent (SE) of 30 or greater. One inch of this sand can be placed above the membrane. This vapor retarder system is anticipated to be suitable for most flooring finishes that can accommodate some vapor emissions. However, this system may emit more than 4 pounds of water per 1000 sq. ft. and therefore, may not be suitable for all flooring finishes. Additional steps should be taken if such vapor emission levels are too high for anticipated flooring finishes.

Special consideration should be given to slabs in areas to receive ceramic tile or other rigid, crack-sensitive floor coverings. Design and construction of such areas should mitigate hairline cracking as recommended by the structural engineer.

Block-outs should be provided around interior columns to permit relative movement and mitigate distress to the floor slabs due to differential settlement that will occur between column footings and adjacent floor subgrade soils as loads are applied.

Prior to placing concrete, subgrade soils below slab-on-grade areas should be thoroughly moistened to provide a moisture content that is equal to or greater than 110% of the optimum moisture content to a depth of 12 inches.

6.3.7 Foundation Observations

Foundation excavations should be observed by the project geotechnical consultant to verify that they have been excavated into competent bearing soils and to the minimum embedment recommended above. These observations should be performed prior to placement of forms or reinforcement. The excavations should be trimmed neat, level and square. Loose, sloughed or moisture-softened materials and debris should be removed prior to placing concrete.

6.4 RETAINING/SCREEN WALLS

6.4.1 General

The following preliminary design and construction recommendations are provided for general retaining and screen walls. Final wall designs specific to the site development should be provided for review once completed. The structural engineer and architect should provide appropriate recommendations for sealing at all joints and applying moisture-proofing material on the back of the walls.

6.4.2 Allowable Bearing Value and Lateral Resistance

Retaining walls may utilize the bearing capacities and lateral resistance values provided in Sections 6.3.4 and 6.3.5. The passive pressure used for lateral bearing should be reduced by 50% for walls that have a descending slope below the face of the wall.

The above values are based on footings placed directly against properly compacted fill or competent native soils. In the case where footing sides are formed, all backfill against the footings should be compacted to at least 90 percent of the maximum dry density per ASTM D1557.

6.4.3 Earth Pressures

Conventional retaining walls should be designed for the static earth pressures as indicated in Table 6.2 below. These values are active (unrestrained) and at-rest (restrained) conditions based on backfill material parameters from laboratory tests. All values are for drained backfill conditions and do not consider hydrostatic pressures. All walls should be designed to support any adjacent structural surcharge loads imposed by other nearby walls, footings or traffic loads, and hydraulic pressures in addition to the earth pressures provided below.

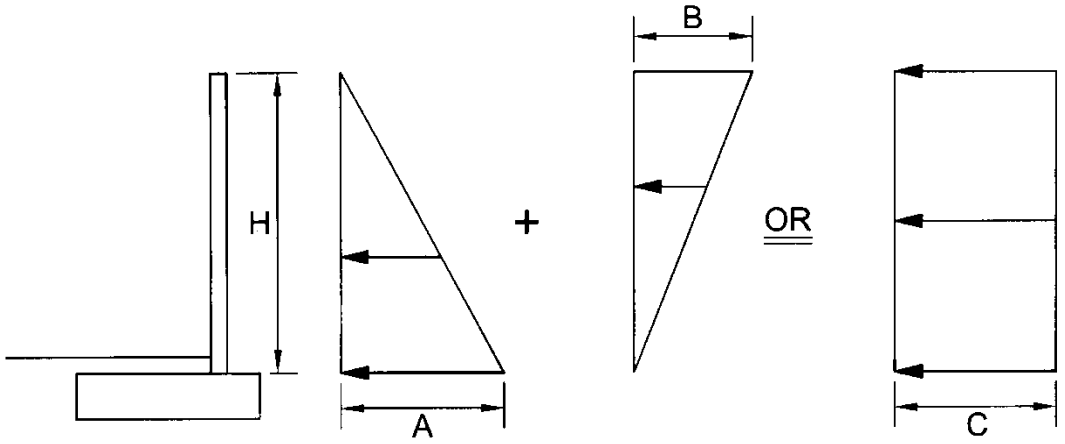
In Table 6.2, H is the vertical height of the retained portion of the wall in feet and the resulting pressure is in pounds per square foot (psf). 2016 CBC requires inclusion of seismic pressure for retaining heights greater than 6 feet. Seismic earth pressures provided herein use a peak ground acceleration (PGA) of 0.39g, corresponding to probability of exceedance of 10 percent in 50 years. Seismic earth pressures are based on the method provided by Seed and Whitman (1970) for active condition, and Wood (1973) for at-rest condition.

As indicated in the diagram below, in Table 6.2, static earth pressure has an upright triangular distribution, with its value at base shown by “A”. Seismic earth pressure has an inverted triangular distribution whose base value is represented by “B”. Value “C” represents a combination of these two values, in the form of a uniform pressure distribution.

6.4.4 Footing Reinforcement

Provided site soils are prepared in accordance with Sections 6.1.4, all continuous footings should be reinforced with a minimum of two (2) No. 4 bars, one top and one bottom. The structural engineer may require different reinforcement and should dictate if greater than the recommendations provided herein.

TABLE 6.2
EARTH PRESSURE DIAGRAMS



Pressure Values
Walls Supporting Engineered Backfill

Value	Un-restrained (Active) Condition		Restrained (At-rest) Condition
	Active Level Backfill	Active 2:1 Backfill	At-rest Level Backfill
A	39H	68H	65H
B	13H	13H	22H
C	26H	41H	44H

Note:
H is in feet and resulting pressure is in psf. Design may utilize either the sum of the static component and the seismic component force diagrams or the total force diagram above. SEAOSC has suggested using a load factor of 1.7 for the static component and 1.0 for the seismic component. The actual load factors should be determined by the structural engineer.

6.4.5 Footing Observations

Footing excavations should be observed by the project geotechnical consultant to verify that they have been excavated into competent bearing soils and to the minimum embedment recommended herein. These observations should be performed prior to placement of forms or reinforcement. The excavations should be trimmed neat, level, and square. Loose, sloughed or moisture-softened materials and debris should be removed prior to placing concrete.

6.4.6 Drainage and Moisture-Proofing

Retaining walls should be constructed with a perforated pipe and gravel subdrain to prevent entrapment of water in the backfill. The perforated pipe should consist of 4-inch-diameter, ABS SDR-35 or PVC Schedule 40 with the perforations laid down. The pipe should be embedded in ¾- to 1½-inch open-graded gravel wrapped in filter fabric. The gravel should be at least one foot wide and extend at least one foot up the wall above the footing and drainage outlet. Drainage gravel and piping should not be placed below outlets and weepholes. Filter fabric should consist of Mirafi 140N, or equal. Outlet pipes should be directed to positive drainage devices.

The use of weepholes may be considered in locations where aesthetic issues from potential nuisance water are not a concern. Weepholes should be 2 inches in diameter and provided at least every 6 feet on center. Where weepholes are used, perforated pipe may be omitted from the gravel subdrain.

Retaining walls supporting backfill should also be coated with a moisture-proofing compound or covered with such material to inhibit infiltration of moisture through the walls. Moisture-proofing material should cover any portion of the back of wall that will be in contact with soil and should lap over and cover the top of footing. A drainage blanket such as Mirafi Miradrain should be provided between the soil and the moisture-proofing materials. The drainage blanket should extend from the top of the gravel to within about 12 inches of finish grade. The top of footing should be finished smooth with a trowel to inhibit the infiltration of water through the wall. The project structural engineer should provide specific recommendations for moisture-proofing, water stops, and joint details.

6.4.7 Wall Jointing

All free-standing, exterior site walls should be provided with cold joints through the masonry block section at horizontal spacing generally not exceeding 40 feet. The joints should not extend through the footing. Retaining walls that are integral to the building should be provided joints based on recommendations by the structural engineer.

6.4.8 Retaining Wall Backfill

Onsite soils having an expansion index (EI) less than 20 or select imported soils may be used for backfill behind retaining walls provided the wall has been designed for earth pressures as discussed in Section 6.4.3. The project geotechnical consultant should approve the backfill used for retaining walls. Wall backfill should be thoroughly moistened to provide moisture contents slightly over optimum moisture content; placed in lifts no greater than 12 inches in thickness, and then mechanically compacted with appropriate equipment to at least 90 percent of the laboratory standard. Hand-operated compaction equipment should be used to compact the backfill placed immediately adjacent the wall to avoid damage to the wall. Flooding or jetting of backfill material is not recommended.

6.5 EXTERIOR FLATWORK

Exterior flatwork should be a nominal 4 inches thick. Cold joints or saw cuts should be provided at least every 10 feet in each direction. Cold joints should be keyed or provided with dowels spaced 18 inches on center. Special jointing detail should be provided in areas of block-outs, notches, or other irregularities to avoid cracking at points of high stress. Where flatwork is more than 10 feet wide in

minimum dimension, the slab should be reinforced with No. 3 bars spaced 30 inches center to center each way.

Subgrade soils below flatwork should be thoroughly moistened to a moisture content to 110% of the optimum to a depth of 12 inches. Moistening should be accomplished by lightly spraying the area over a period of a few days just prior to pouring concrete.

Drainage from flatwork areas should be directed to local area drains and/or other appropriate collection devices designed to carry runoff water to the street or other approved drainage structures. The concrete flatwork should also be sloped at a minimum gradient of 0.5% away from building foundations and masonry walls.

The geotechnical consultant should observe and verify the density and moisture content of subgrade soils prior to pouring concrete to ensure that the required compaction and pre-moistening recommendations have been met.

6.6 CONCRETE MIX DESIGN

Laboratory testing of near-surface soils for soluble sulfate content indicates soluble sulfate concentration of less than 0.10%. We recommend following the procedures provided in ACI 318, Section 4.3, Table 4.3.1 for **negligible** sulfate exposure. Upon completion of rough grading, an evaluation of as-graded conditions and further laboratory testing should be completed for the site to confirm or modify the recommendations provided in this section.

6.7 CORROSION

Laboratory testing of onsite soil indicates indicate a minimum resistivity of approximately 12,000 ohm-cm, pH of 7.49 and a soluble chloride content of 11.7 ppm. Based on laboratory test results, site soils are **Mildly Corrosive** to metals, and structures fabricated from metals may not require corrosion protection if they will be in direct contact with site soils. Nevertheless, we recommend a corrosion specialist be contacted to provide specific recommendations. The chloride content is relatively low and as such, no special requirements are anticipated for protection against chlorides in the site soils. Minimum cover requirements per ACI for rebar embedded in concrete should provide sufficient mitigation from chlorides in site soils.

6.8 PRELIMINARY PAVEMENT DESIGN

6.8.1 Pavement Structural Sections

Based on the anticipated soil conditions present at the site and a range of assumed traffic indices, preliminary pavement sections are provided in the table below. A preliminary "R-value" of 25 was used for the near-surface soil in this preliminary pavement design. The sections provided below are feasibility-level section and should be re-evaluated subsequent to site investigation, detailed estimates of traffic index, and should be finalized upon site grading. Final pavement sections should be based on actual R-value testing of in-place soils and analysis of anticipated traffic.

6.8.1 Subgrade Preparation

Prior to placement of paving elements, subgrade soils should be scarified 6 inches, moisture-conditioned to at least 100 percent of the optimum moisture content then compacted to at least 90 percent of the maximum dry density determined in accordance with ASTM D1557. Areas observed to pump or yield under vehicle traffic should be removed and replaced with firm and unyielding engineered compacted soil or aggregate base materials.

6.8.1 Aggregate Base

Aggregate base materials should be Crushed Aggregate Base or Crushed Miscellaneous Base conforming to Section 200-2 of the Standard Specification for Public Works Construction (Greenbook) or Class 2 Aggregate Base conforming to the Caltrans' Standard Specifications. The materials should be moisture conditioned to slightly over the optimum moisture content then compacted to at least 95 percent of ASTM D 1557.

TABLE 6.3
PRELIMINARY PAVEMENT STRUCTURAL SECTIONS

Location	Traffic Index	AC (inches)	Concrete Paver	PCC (inches)	AB (inches)
All Entries And Interior Driveways	5.0	3.0 4.0	--	--	7.0 4.0
		--	8 cm		8.0
		--	--	6.0	--
	5.5	3.0 4.0	--	--	9.0 6.0
		--	8 cm		10.0
		--	--	6.5	--
	6.0	4.0 5.0			8.0 6.0
		--	8 cm		11.0
		--	--	7.0	--
Parking Stalls	--	3.0	--	--	4.0

6.8.2 Asphaltic Concrete

Paving asphalt should be PG 64-10 conforming to the requirements of Section 203-1 of the Greenbook. Asphalt concrete materials should conform to Section 203-6 and construction should conform to Section 302 of the Greenbook.

6.8.3 Concrete Paver

Concrete pavers should conform to the requirements of ASTM C 936. Construction of the pavers, including bedding sand, should follow manufacturer's specifications. Typical thickness of bedding sand is about 1 inch. The gradation of bedding sand should meet the requirement in Table 6.4.

TABLE 6.4
Gradation for Sand Bedding

Sieve Size	Percent Passing
⅜"	100
No. 4	95 - 100
No. 8	80 - 100
No. 16	50 - 85
No. 30	25 - 60
No. 50	5 - 30
No. 100	0 - 10
No. 200	0 - 1

6.8.4 Portland Cement Concrete

Portland cement concrete used to construct concrete paving should conform to Section 201 of the Greenbook and should have a minimum compressive strength of 3250 pounds per square inch (psi) at 28 days. Reinforcement and jointing of concrete pavement sections should be designed according to the minimum recommendations provided by the Portland Cement Association (PCA). Transverse and longitudinal contraction joints should be provided at spacing no greater than 15 feet. Score joints may be constructed by saw cutting to a depth of ¼ of the slab thickness. Expansion/cold joints may be used in lieu of score joints. Such joints should be properly sealed. Where traffic will traverse over cold joints or edges of concrete paving, the edges should be thickened by 20% of the design thickness toward the edge over a horizontal distance of 5 feet.

6.9 POST GRADING CONSIDERATIONS

6.9.1 Site Drainage and Irrigation

The ground immediately adjacent to foundations should be provided with positive drainage away from the structures in accordance with 2016 CBC, Section 1804.4. However, the ground slope may be reduced a minimum of 2% for soils and climatic reasons. No rain or excess water should be allowed to pond against structures such as walls, foundations, flatwork, etc.

Excessive irrigation water can be detrimental to the performance of the proposed site development. Water applied in excess of the needs of vegetation will tend to percolate into the ground. Such percolation can lead to nuisance seepage and shallow perched groundwater. Seepage can form on slope faces, on the faces of retaining walls, in streets, or other low-lying areas. These conditions could lead to adverse effects such as the formation of stagnant water that breeds insects, distress or damage of trees, surface erosion, slope instability, discoloration and salt buildup on wall faces, and premature failure of pavement. Excessive watering can also lead to elevated vapor emissions within building that can damage flooring finishes or lead to mold growth inside the building.

Key factors that can help mitigate the potential for adverse effects of overwatering include the judicious use of water for irrigation, use of irrigation systems that are appropriate for the type of vegetation and geometric configuration of the planted area, the use of soil amendments to enhance moisture retention, use of low-water demand vegetation, regular use of appropriate fertilizers, and seasonal adjustments of irrigation systems to match vegetation needs for water. Specific recommendations should be provided by a landscape architect or other knowledgeable professional. Future homebuyers should be made aware of these issues and consequences.

6.9.2 Utility Trench Backfill

Trench excavations should be constructed in accordance with the recommendations contained in Section 6.1.6 of this report. Trench excavations must also conform to the requirements of Cal/OSHA.

Utility trench backfill within the property should be compacted to at least 90 percent of the Modified Proctor standard. Soils placed within the pipe zone (6 inches below and 12 inches above the pipe) should consist of particles no greater than ¾ inches and have a SE of at least 30. The materials within the pipe zone should be consolidated by heavily watering along with some vibratory compaction. Above the pipe zone (>1 foot above pipe), the backfill may consist of general fill materials. Trench backfill should be brought to slightly over optimum moisture content, placed in lifts no greater than 12 inches in thickness, and then mechanically compacted with appropriate equipment to at least 90 percent of the Modified Proctor standard. For trenches with sloped walls, backfill material should be placed in lifts no greater than 8 inches in loose thickness, and then compacted by a sheep-foot roller or similar equipment. The project geotechnical consultant should perform density testing along with probing to verify that adequate compaction has been achieved.

Within shallow trenches (less than 18 inches deep) where pipes may be damaged by heavy compaction equipment, imported clean sand having a SE of 30 or greater may be utilized. The sand should be placed in the trench then heavily watered. For utility trenches located below a 1:1 (H:V) plane projecting downward from the outside edge of the adjacent footing base or crossing footing trenches, concrete or slurry should be used as trench backfill.

6.10 PLAN REVIEWS AND CONSTRUCTION SERVICES

We recommend that ***Albus-Keefe & Associates, Inc***. be engaged to review grading plans and foundation plans prior to construction. The purpose of this is to provide any additional comments and specific recommendations for site grading and development, as well as to verify that the recommendations contained in this report have been properly interpreted and are incorporated into the project specifications. If we are not provided the opportunity to review these documents and perform the necessary engineering analyses, we take no responsibility for misinterpretation of our recommendations.

We recommend that a geotechnical consultant be retained to provide soil engineering services during the grading and construction phases of the work. This is to observe compliance with the design, specifications or recommendations, and to allow design changes in the event that subsurface conditions differ from those anticipated prior to the start of construction.

7.0 LIMITATIONS

This report is based on the proposed development of the site as indicated on the referenced plans, and our subsurface exploration, laboratory testing, engineering analyses and geologic analyses. The materials encountered on the project site are believed representative of the total project area, and the conclusions and recommendations contained in this report are presented on that basis. However, soil and bedrock materials can vary in characteristics between points of exploration, both laterally and vertically, and those variations could affect the conclusions and recommendations contained herein. As such, observation and testing by a geotechnical consultant during the grading and construction phases of the project are essential to confirming the basis of this report.

This report has been prepared consistent with that level of care being provided by other professionals providing similar services at the same locale and time period. The contents of this report are professional opinions and as such, are not to be considered a guaranty or warranty.

This report should be reviewed and updated after a period of one year or if the site ownership or project concept changes from that described herein.

This report has been prepared for the exclusive use of **Griffin Capital Company, LLC** to assist the project consultants in the design of the proposed development. This report has not been prepared for use by parties or projects other than those named or described herein. This report may not contain sufficient information for other parties or other purposes.

This report is subject to review by the controlling governmental agency.

Respectfully submitted,

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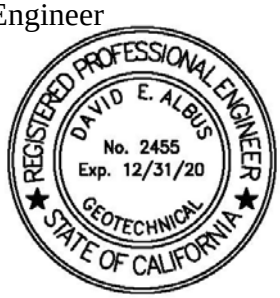
Principal Engineer
G.E. 2455



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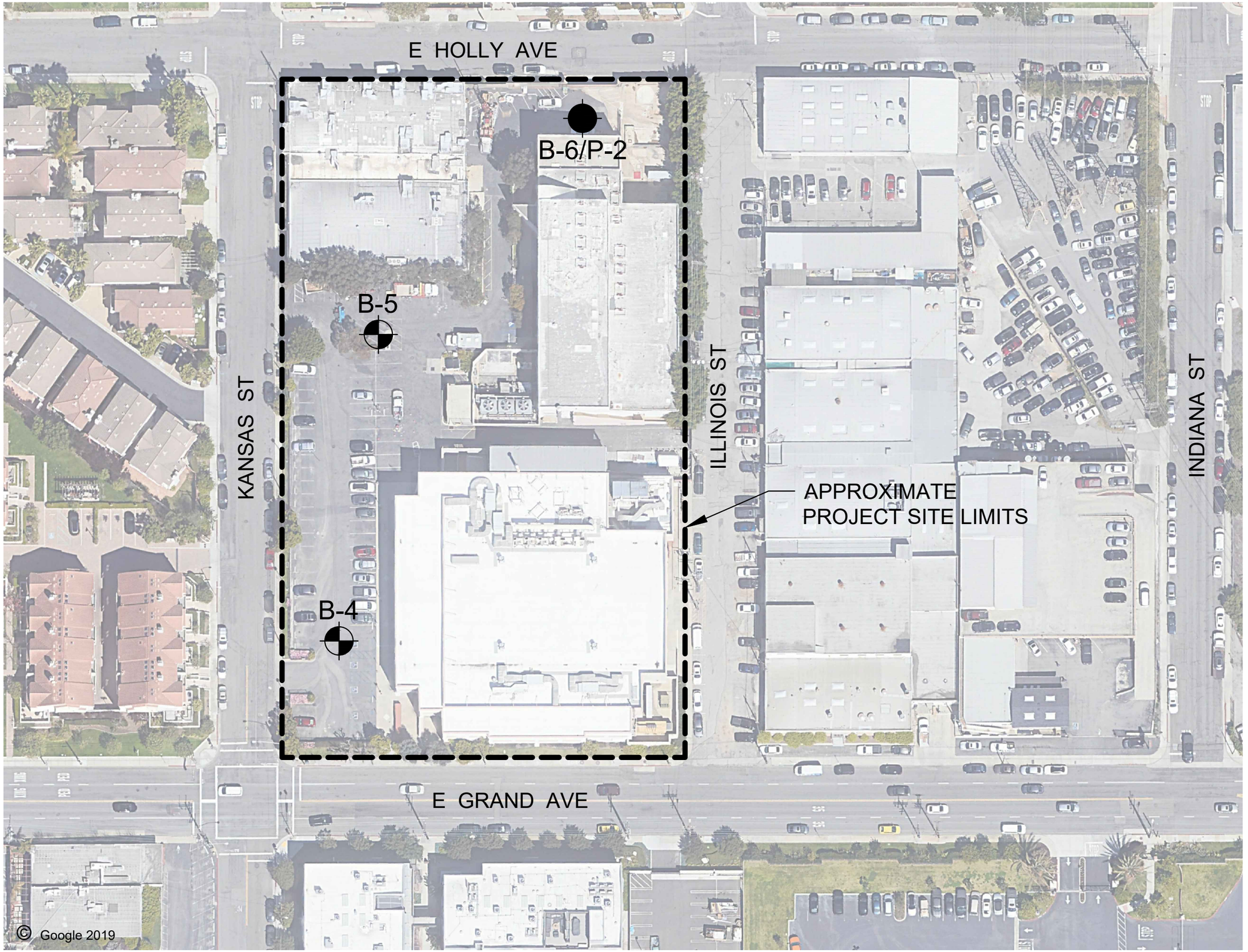
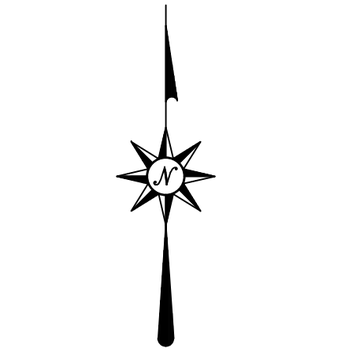




EXPLANATION

(Locations Approximate)

- Exploratory Boring
- Exploratory Boring and Percolation Test

ALBUS-KEEFE & ASSOCIATES, INC.
GEOTECHNICAL CONSULTANTS

GEOTECHNICAL MAP

Job No.: 2858.00	Date: 12/19/19	Plate: 1

APPENDIX A

EXPLORATORY LOGS

EXPLORATION LOG

Project:		Location:
Address:		Elevation:
Job Number:	Client:	Date:
Drill Method:	Driving Weight:	Logged By:

Depth (feet)	Lith-ology	Material Description	Water	Samples: Blows Per Foot	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
5		**EXPLANATION** Solid lines separate geologic units and/or material types. Dashed lines indicate unknown depth of geologic unit change or material type change. **Solid black rectangle** in Core column represents California Split Spoon sampler (2.5in ID, 3in OD). **Double triangle** in core column represents SPT sampler. **Vertical Lines** in core column represents Shelby sampler. **Solid black rectangle** in Bulk column respresents large bag sample. **Other Laboratory Tests:** Max = Maximum Dry Density/Optimum Moisture Content EI = Expansion Index SO4 = Soluble Sulfate Content DSR = Direct Shear, Remolded DS = Direct Shear, Undisturbed SA = Sieve Analysis (1" through #200 sieve) Hydro = Particle Size Analysis (SA with Hydrometer) 200 = Percent Passing #200 Sieve Consol = Consolidation SE = Sand Equivalent Rval = R-Value ATT = Atterberg Limits							
10									
15									
20									

EXPLORATION LOG

Project: North Grand Parcels, Smoky Hollow, El Segundo, CA		Location: B-4
Address: 1521 E Grand Ave, El Segundo, CA		Elevation: 116
Job Number: 2858.00	Client: Griffin Capital Company, Inc.	Date: 12/11/2019
Drill Method: Hollow-Stem Auger	Driving Weight: 140 lbs / 30 in	Logged By: MP

Depth (feet)	Lith-ology	Material Description	Water	Samples: Blows Per Foot	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
		Asphalt (AC): 3 inches							
		Crushed Aggregate Base (CAB): 4.5 inches							
		ARTIFICIAL FILL (Af) Silty Sand (SM): Mottled medium brown and reddish brown, very moist to wet, dense, concrete debris present		64					
5		@ 4 ft, Medium brownmedium dense		15					Consol
		OLD SAND DUNE DEPOSITS (Qos) Silty Sand (SM): Medium reddish brown, slightly moist, medium dense, medium grained sand, pores present		13					Consol
10		Sand with Silt (SP-SM): Reddish brown, slightly moist, medium dense, medium grained sand		15					
15		Silty Sand (SM): Reddish brown, slightly moist, very dense, fine to medium grained sand, pores present, magnesium oxide specs		33					
20		Sand (SP): Light brown, slightly moist, dense, medium grained sand, silt nodules present		21					

Albus-Keefe & Associates, Inc.

Plate A-2

EXPLORATION LOG

Project: North Grand Parcels, Smoky Hollow, El Segundo, CA		Location: B-4
Address: 1521 E Grand Ave, El Segundo, CA		Elevation: 116
Job Number: 2858.00	Client: Griffin Capital Company, Inc.	Date: 12/11/2019
Drill Method: Hollow-Stem Auger	Driving Weight: 140 lbs / 30 in	Logged By: MP

Depth (feet)	Lith-ology	Material Description	Water	Samples: Blows Per Foot	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
		@ 25 ft, no silt nodules present		23					
30				27					
		End of boring at 31.5 feet. No groundwater encountered. Backfilled with cement-bentonite mix. Patched with cold patch asphalt .							

EXPLORATION LOG

Project: North Grand Parcels, Smoky Hollow, El Segundo, CA		Location: B-5
Address: 1521 E Grand Ave, El Segundo, CA		Elevation: 105
Job Number: 2858.00	Client: Griffin Capital Company, Inc.	Date: 12/11/2019
Drill Method: Hollow-Stem Auger	Driving Weight: 140 lbs / 30 in	Logged By: MP

Depth (feet)	Lith-ology	Material Description	Water	Samples: Blows Per Foot	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
		Asphalt (AC): 3 inches Crushed Aggregate Base (CAB): 2 inches **ARTIFICIAL FILL (Af)** Silty Sand (SM): Grayish brown, slightly moist, loose, fine grained sand, pores and rootlets present		13					
		@ 4 ft, Mottled light grayish brown and medium grayish brownmedium dense, no rootlets, some pores		16					Consol
5		**OLD SAND DUNE DEPOSITS (Qos)** Silty Sand (SM): light brown, slightly moist, dense, trace medium grained sand		63					
		Sand with Silt (SP-SM): Mottled light brown and brown, slightly moist, dense, fine to medium grained sand							
10				47					
15		@ 15 ft, Reddish brownvery dense		82/ 11"					
		Sand (SP): Light brown, slightly moist, very dense, fine to medium grained sand							
20				41					

EXPLORATION LOG

Project: North Grand Parcels, Smoky Hollow, El Segundo, CA		Location: B-5
Address: 1521 E Grand Ave, El Segundo, CA		Elevation: 105
Job Number: 2858.00	Client: Griffin Capital Company, Inc.	Date: 12/11/2019
Drill Method: Hollow-Stem Auger	Driving Weight: 140 lbs / 30 in	Logged By: MP

Depth (feet)	Lith-ology	Material Description	Water	Samples: Blows Per Foot	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
		@ 26.5 ft, Tan brownincreased fine grained sand		43					
30		@ 30 ft, fine to coarse grained sand, trace Bt lense		59					
		End of boring at 31.5 feet. No groundwater encountered. Backfilled with cement-bentonite mix. Patched with asphalt cold patch.							

EXPLORATION LOG

Project: North Grand Parcels, Smoky Hollow, El Segundo, CA		Location: B-6
Address: 1521 E Grand Ave, El Segundo, CA		Elevation: 102
Job Number: 2858.00	Client: Griffin Capital Company, Inc.	Date: 12/11/2019
Drill Method: Hollow-Stem Auger	Driving Weight: 140 lbs / 30 in	Logged By: MP

Depth (feet)	Lith-ology	Material Description	Water	Samples: Blows Per Foot	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
		Asphalt (AC): 6 inches							SO4 DS pH Resist Ch Max EI
		ARTIFICIAL FILL (Af) Silty Sand (SM): Medium brown, slightly moist, medium dense, fine grained sand, pores present, cemented layers							
5		@ 5 ft, no pores		29					
		OLD SAND DUNE DEPOSITS (Qos) Silty Sand (SM): Mottled light brown and medium brown, slightly moist, medium dense, fine to medium grained sand, decreased fines		36					
10		Sand (SP): Mottled light brown and medium brown, slightly moist, medium dense, fine to medium grained sand, possible pores, cemented, some fines		36					
15		@ 15 ft, mottled reddish brown and medium reddish brownvery dense, rootlets and pores present, decreased fines		80					
20		@ 20 ft, Light browndense, no pores and cementation		28					SA

Albus-Keefe & Associates, Inc.

Plate A-6

EXPLORATION LOG

Project: North Grand Parcels, Smoky Hollow, El Segundo, CA		Location: B-6
Address: 1521 E Grand Ave, El Segundo, CA		Elevation: 102
Job Number: 2858.00	Client: Griffin Capital Company, Inc.	Date: 12/11/2019
Drill Method: Hollow-Stem Auger	Driving Weight: 140 lbs / 30 in	Logged By: MP

Depth (feet)	Lith-ology	Material Description	Water	Samples: Blows Per Foot	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
		@ 25 ft, very dense, increased medium grained sand		35					
30		@ 30 ft, medium grained sand, some fine and coarse grained sand, decreased fines, Bt lenses		59					SA
35		@ 35 ft, decreased medium grained sand, fine grained sand, no Bt lenses		57					
40				53					
45				73					

EXPLORATION LOG

Project: North Grand Parcels, Smoky Hollow, El Segundo, CA		Location: B-6
Address: 1521 E Grand Ave, El Segundo, CA		Elevation: 102
Job Number: 2858.00	Client: Griffin Capital Company, Inc.	Date: 12/11/2019
Drill Method: Hollow-Stem Auger	Driving Weight: 140 lbs / 30 in	Logged By: MP

Depth (feet)	Lith-ology	Material Description	Water	Samples			Laboratory Tests		
				Blows Per Foot	Core	Bulk	Moisture Content (%)	Dry Density (pcf)	Other Lab Tests
				66					
		End of boring at 51.5 feet. No groundwater encountered. Backfilled with cement-bentonite mix. Patched with asphalt cold patch.							

APPENDIX B

LABORATORY TEST PROGRAM

LABORATORY TESTING PROGRAM

Soil Classification

Soils encountered within the exploratory borings were initially classified in the field in general accordance with the visual-manual procedures of the Unified Soil Classification System (ASTM D 2487). The samples were re-examined in the laboratory and field classifications reviewed and then revised where appropriate. The assigned group symbols are presented in the exploratory logs provided in Appendix A.

In-Situ Moisture Content and Dry Density

Moisture content and dry density of in-place soil materials were determined in representative strata. Test data are presented on the Exploration Logs provided in Appendix A.

Maximum Dry Density and Optimum Moisture Content

Maximum dry density and optimum moisture content test was performed on representative samples of the site materials obtained from our field explorations. The test was performed in accordance with Method A of ASTM D 1557. Pertinent test values are given in Table B.

Grain Size Distribution Analysis

Grain size distribution/hydrometer analysis was performed on selected samples to verify visual classifications performed in the field. The test was performed in accordance with ASTM D 422-63. Test results are graphically presented on Plates B-1 and B-2.

Direct Shear

The Coulomb shear strength parameters, angle of internal friction and cohesion, were determined for a bulk sample obtained from one our borings. The tests were performed in general conformance with Test Method ASTM D 3080. The sample was remolded to 90 percent of maximum dry density and at the optimum moisture content. Three specimens were prepared for each test, artificially saturated, and then sheared under varied loads at an appropriate constant rate of strain. Results are graphically presented on Plates B-5.

Consolidation

Consolidation Tests were performed in general conformance with Test Method ASTM D 2435. Axial loads were applied in several increments to a laterally restrained 1-inch-high sample. Loads were applied in geometric progression by doubling the previous load, and the resulting deformations were recorded at selected time intervals. The test samples were inundated at a selected surcharge loading in order to evaluate the effects of a sudden increase in moisture content. Results of these tests are graphically presented on Plates B-3 and B-4.

Corrosion

Select samples were tested for minimum resistivity and pH in accordance with California Test Method 643. Results of these tests are provided in Table B.

Soluble Sulfate Content

Chemical analysis was performed on one selected sample to determine soluble sulfate content. The test was performed in accordance with California Test Method No. 417. The test result is included on Table B.

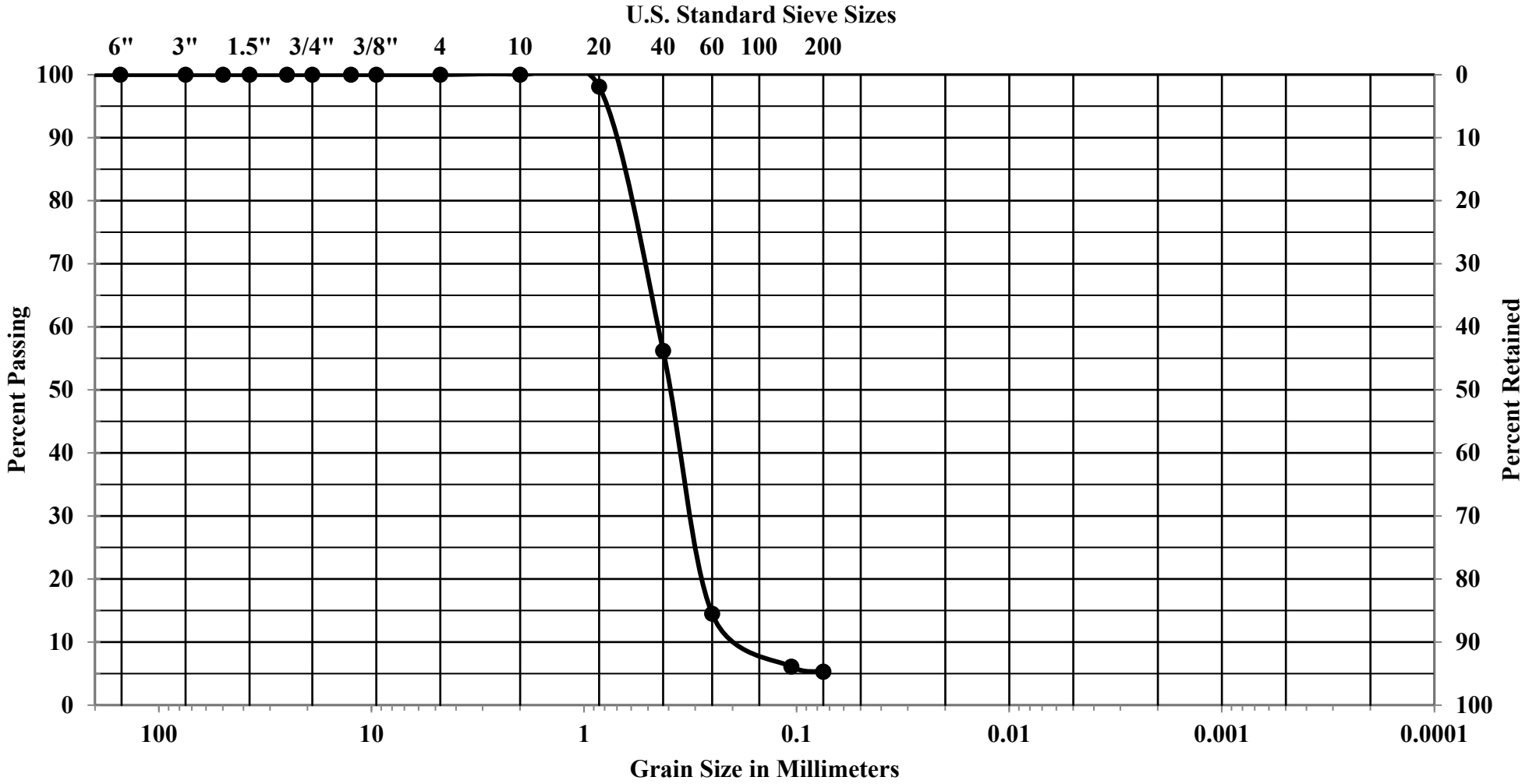
TABLE B
SUMMARY OF LABORATORY TEST RESULTS

Boring No.	Sample Depth (ft.)	Soil Description	Test Results	
B-6	0-5	Silty Sand (SM)	Maximum Dry Density: Optimum Moisture Content: Soluble Sulfate Content: Sulfate Exposure: pH: Resistivity: Soluble Chloride Content:	133.5 pcf 8.0% 0.051% Negligible 7.49 12,000 ohm-cm 11.7 ppm

Additional laboratory test results are provided on the boring logs provided in Appendix A.

GRAIN SIZE DISTRIBUTION

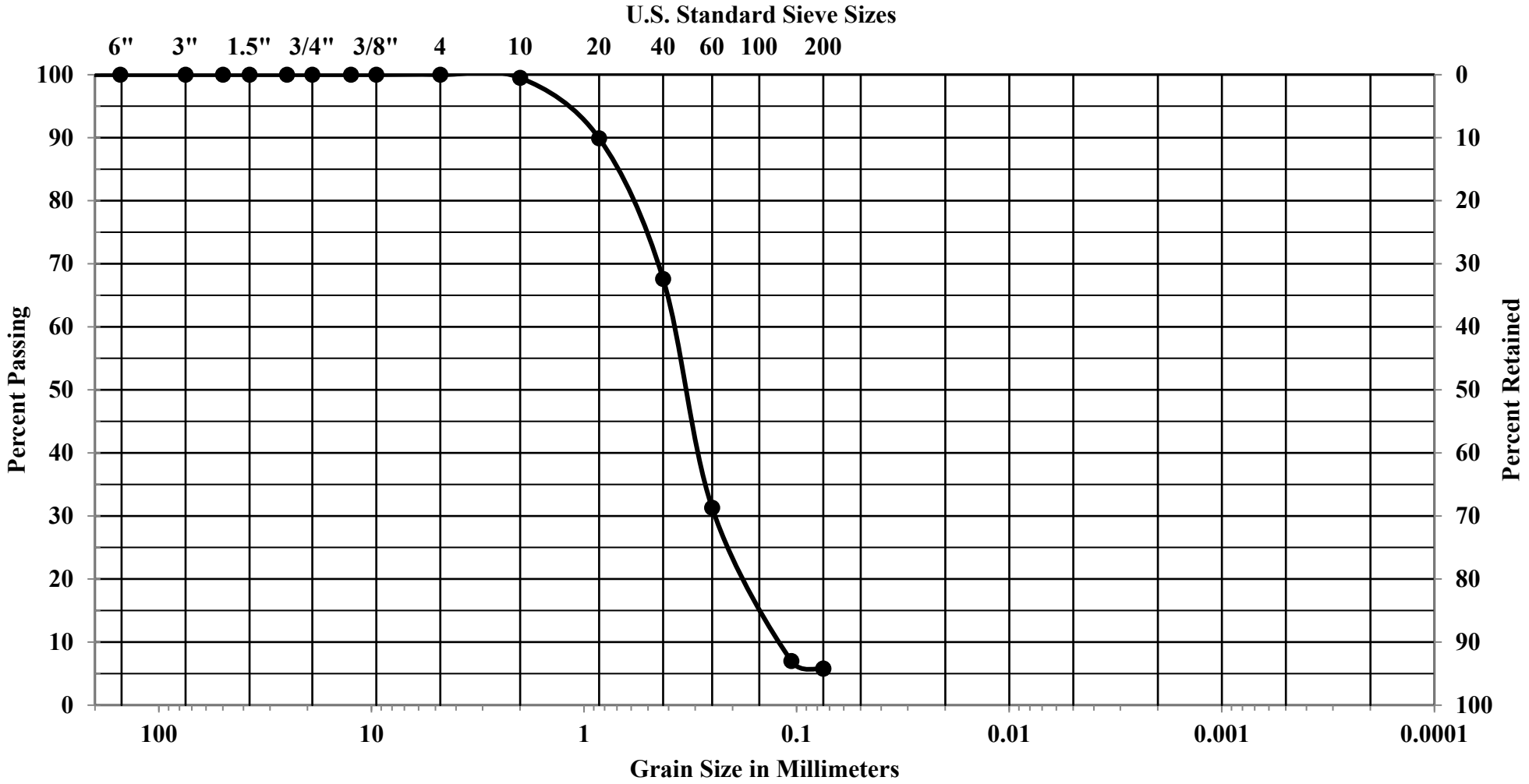
COBBLES	GRAVEL		SAND			SILT AND CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	



Job Number	Location	Depth	Description
2858.00	B-6	20	Sand trace Silt (SP)

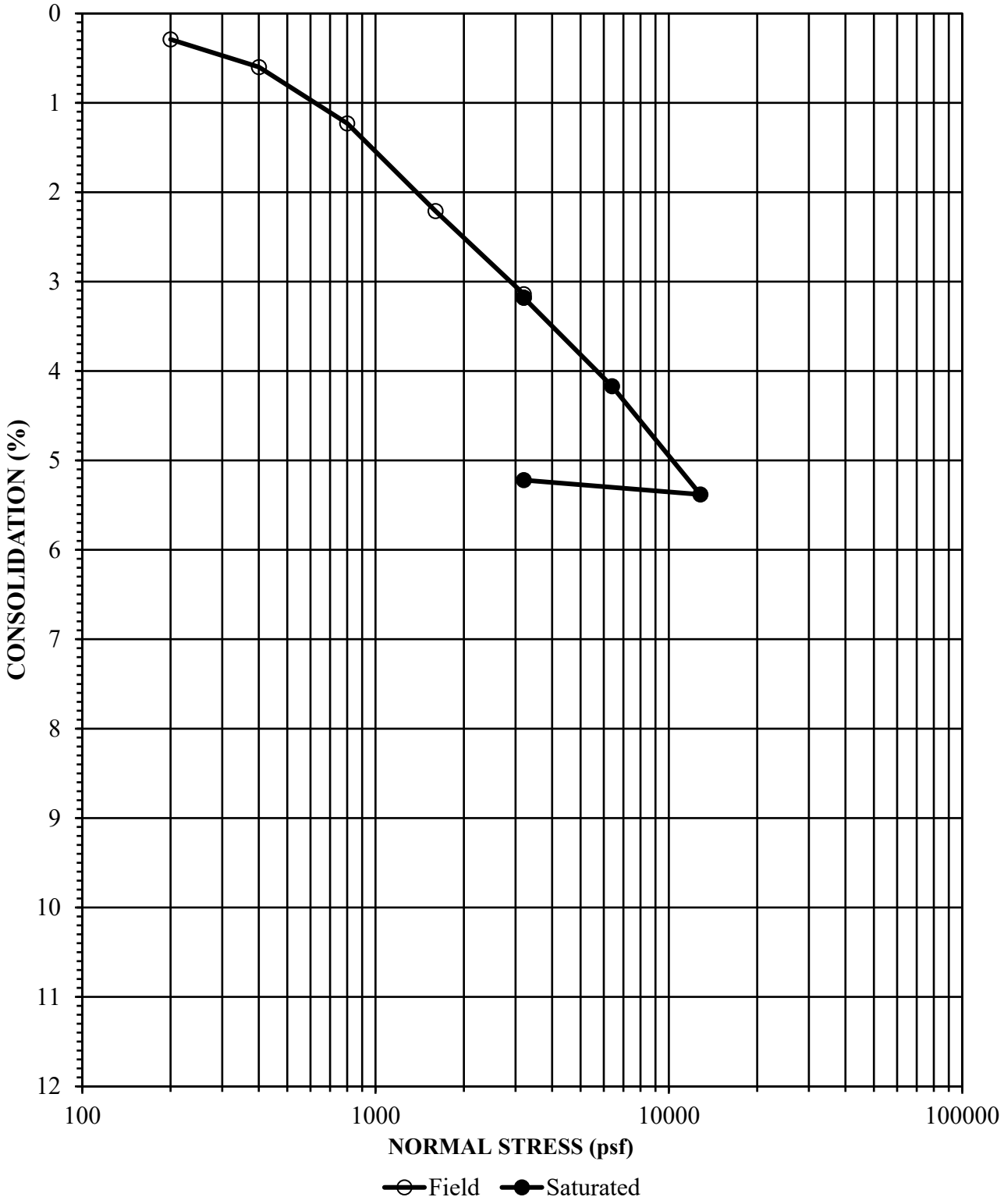
GRAIN SIZE DISTRIBUTION

COBBLES	GRAVEL		SAND			SILT AND CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	



Job Number	Location	Depth	Description
2858.00	B-6	30	Sand trace Silt (SP)

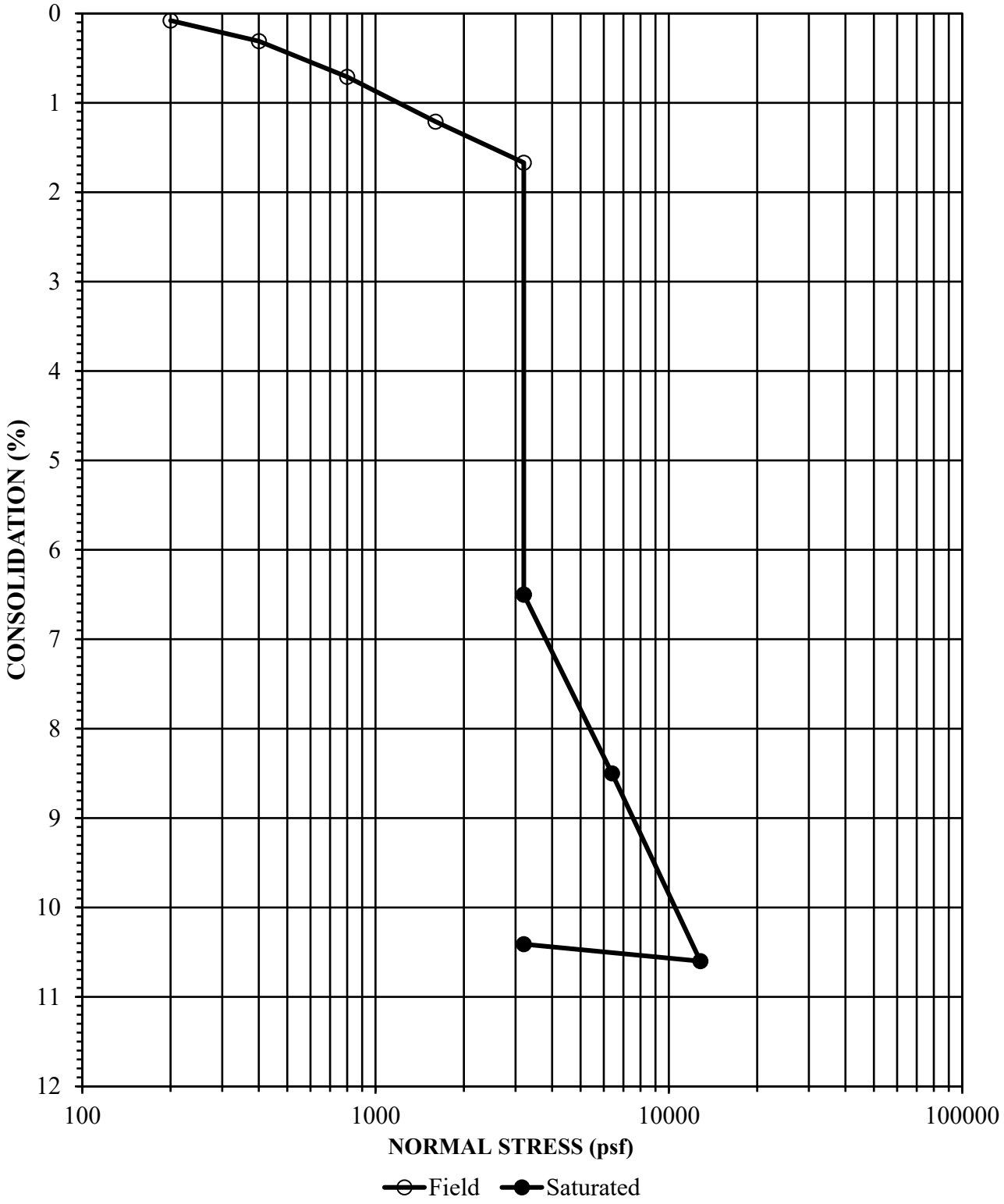
CONSOLIDATION



Job Number	Location	Depth	Description
2858.00	B-4	4	Silty Sand (SM)

Initial Dry Density (pcf)	Initial Moisture Content (%)	Final Moisture Concent (%)
101.7	19.8	15.7

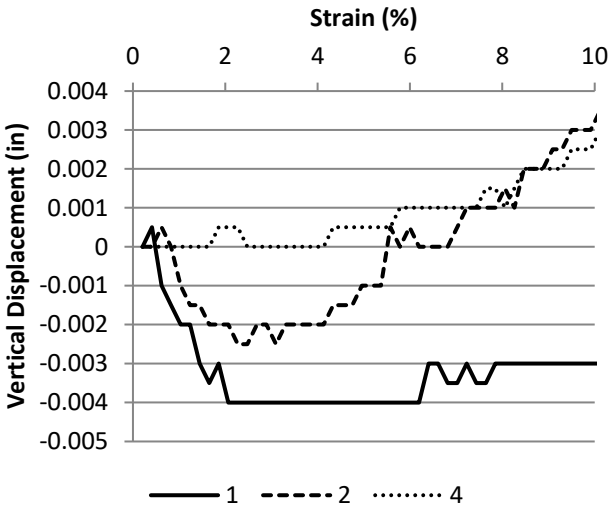
CONSOLIDATION

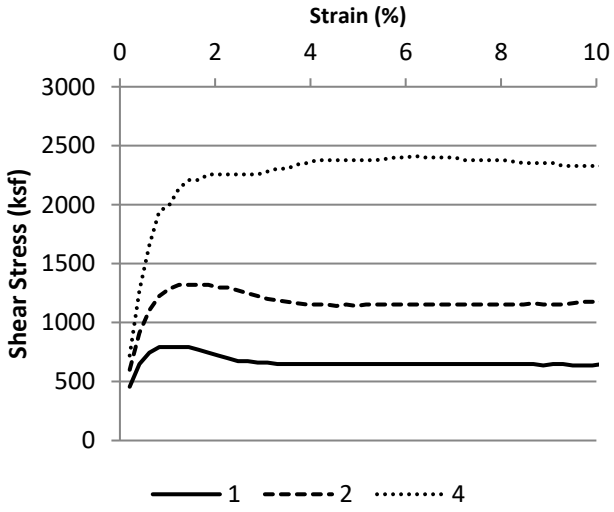


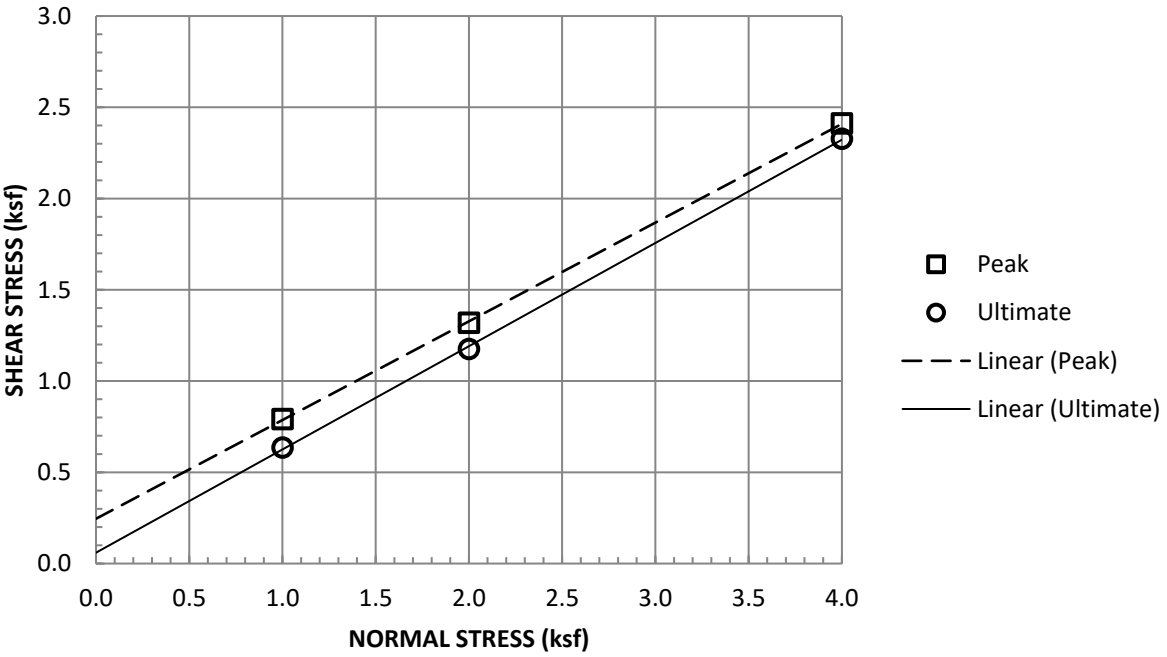
Job Number	Location	Depth	Description
2858.00	B-4	6	Silty Sand (SM)

Initial Dry Density (pcf)	Initial Moisture Content (%)	Final Moisture Concent (%)
114.7	3.3	10

DIRECT SHEAR







Sample Type:	Remolded 90% of 133.5 @ 8%, Saturated		
Normal Stress (ksf)	1	2	4
Peak Shear Stress (ksf)	0.792	1.32	2.412
Peak Displacement (in)	0.004	0.004	0.003
Ultimate Shear Stress (ksf)	0.636	1.176	2.328
Ultimate Displacement (in)	0.25	0.25	0.25
Initial Dry Density (pcf)	120.1	120.1	120.1
Initial Moisture Content (%)	8	8	8
Final Moisture Content (%)	11	10.2	10.7
Strain Rate (in/min)	0.01		

Job Number	Location	Depth	Description
2858.00	B-6	0-5	Sand / Silty Sand (SP/SM)

ALBUS-KEEFE & ASSOCIATES, INC.
GEOTECHNICAL CONSULTANTS

January 15, 2020
J.N.: 2858.00

Mr. William Messori
Griffin Capital Company, LLC
Griffin Capital Plaza
1520 E. Grand Avenue
El Segundo, California 90245

Subject: **Updated Seismic Parameters per ASCE7-16, Proposed Commercial Development, Northeast Corner of E. Grand Avenue and Kansas Street, El Segundo, California.**

Reference:

Preliminary Geotechnical Investigation Report, Proposed Commercial Development, Northeast Corner of E. Grand Avenue and Kansas Street, El Segundo, California, prepared by Albus-Keefe and Associates, Inc., December 19,2019 (JN: 2858.00)

Dear Mr. Messori,

Pursuant to your request, ***Albus-Keefe & Associates, Inc***., is submitting this letter to provide seismic parameters for the subject project site. The content of this letter supersedes Sections 4.1 and 6.2 of our referenced report dated December 19, 2019. Unless stated specifically, all other conclusions and recommendations in the referenced report remain valid and applicable. All the section numbers in the remainder of this letter refer to those in ASCE7-16, unless noted otherwise.

Per Section 20.3 the project site was designated as Site Class D. We used USGS seismic design maps web tool developed by the Applied Technology Council (ATC) to obtain the basic mapped acceleration parameters, including short periods (S_S) and 1-second period (S_1) MCE_R Spectral Response Accelerations. Section 11.4.8 requires site-specific ground hazard analysis for structures on Site Class E with S_S greater than or equal to 1.0 or Site Class D or E with S_1 greater than or equal to 0.2. Based on the mapped values of S_S and S_1 the project site falls within this category, requiring site specific hazard analysis in accordance with Section 21.2.

According to Section 21.2.3 (Supplement 1), the site-specific Risk Targeted Maximum Considered Earthquake (MCE_R) spectral response acceleration at any period is the lesser of the probabilistic and the deterministic response accelerations, subject to the exception specified in the same section. The probabilistic response spectrum was developed using USGS Risk Targeted Ground Motion (RTGM) calculator, which implements Method 2 as described on Section 21.2.1.2. The spectral acceleration and annual frequency of exceedance required by the RTGM calculator were extracted from hazard curves produced by USGS Unified Hazard Tool for the project site.

In accordance with Section 21.2.2 (Supplement 1), the deterministic spectral response acceleration at each period was calculated as the 84th percentile 5% damped response acceleration using the NGA-West2 GMPE Worksheet. For this, the information from at least three causative faults with the greatest contribution per deaggregation analysis were used, and the larger acceleration spectrum among these

was selected as the deterministic response spectrum. The deterministic spectrum was adjusted per requirements in Section 21.2.2 (Supplement 1) where applicable. Both probabilistic and deterministic spectra were subjected to the maximum direction scale factors specified in Section 21.2 to produce the maximum acceleration spectra.

Design response spectrum was developed by subjecting the site-specific MCE_R response spectrum to the provisions outlined in Section 21.3. This process included comparison with 80% code-based design spectrum determined in accordance with Section 11.4.6. The short period and long period site coefficient (F_a and F_v, respectively) were determined per Section 21.3 in conjunctions with Table 11.4-1. Site specific design acceleration parameters (SM_S, SM_1, SD_S, and SD_1) were calculated according to Section 21.4.

Per Section 11.2 (definitions on Page 79 of ASCE7-16) for evaluation of liquefaction, lateral spreading, seismic settlements, and other soil-related issues, Maximum Considered Earthquake Geometric Mean (MCE_G) peak ground acceleration PGA_M shall be used. The site-specific PGA_M is calculated per Section 21.5.3, as the lesser of the probabilistic PGA_M (Section 21.5.1) and deterministic PGA_M (Section 21.5.2), but no less than 80% site modified peak ground acceleration, PGA_M, obtained from Applied Technology Council (ATC) web-based seismic hazard tool.

CONCLUSIONS AND RECOMMENDATIONS

Following ASCE7-16, Section 21.5.3, we have estimated site-specific Maximum Considered Earthquake Geometric Mean (MCEG) peak ground acceleration PGA_M = 0.702g. Per Section 11.2, this value should be used for evaluation of liquefaction, lateral spreading, seismic settlements, and other soil-related issues. Based on the results of deaggregation analysis performed using USGS Unified Hazard Tool, the mean event associated with a probability of exceedance equal to 2% over 50 years has a moment magnitude of 6.7 and the mean distance to the seismic source is 5.4 miles.

For design of the project in accordance with Chapter 16 of the 2019 CBC, the following table presents the seismic design factors:

TABLE
2019 CBC Seismic Design Parameters

Parameter	Value
Site Class	D
Mapped MCE_R Spectral Response Acceleration, short periods, S_S	1.854
Mapped MCE_R Spectral Response Acceleration, at 1-sec. period, S_1	0.653
Site Coefficient, Fa	1.0
Site Coefficient, Fv	2.5
Adjusted MCE_R Spectral Response Acceleration, short periods, S_{MS}	1.643
Adjusted MCE_R Spectral Response Acceleration, at 1-sec. period, S_{M1}	1.306
Design Spectral Response Acceleration, short periods, S_{DS}	1.096
Design Spectral Response Acceleration, at 1-sec. period, S_{D1}	0.871
Long-Period Transition Period, T_L (sec.)	8
Seismic Design Category for Risk Categories I-IV	D

MCE_R = Risk-Targeted Maximum Considered Earthquake

We appreciate this opportunity to be of service to you. If you should have any questions regarding the contents of this correspondence, please do not hesitate to call our office.

Sincerely,

ALBUS-KEEFE & ASSOCIATES, INC.

David E. Albus
Principal Engineer
GE 2455

ALBUS & ASSOCIATES
formerly Albus-Keefe & Associates, Inc.

October 16, 2020
J.N.: 2858.00

Mr. William Messori
Griffin Capital Company, LLC
Griffin Capital Plaza
1520 E. Grand Avenue
El Segundo, California 90245

Subject: **Addendum #1 to Preliminary Geotechnical Investigation Report, Proposed Commercial Development, Northeast Corner of E. Grand Avenue and Kansas Street, El Segundo, California.**

Reference: *Preliminary Geotechnical Investigation Report, Proposed Commercial Development, Northeast Corner of E. Grand Avenue and Kansas Street, El Segundo, California*, prepared by Albus-Keefe & Associates, dated December 19, 2019, J.N. 2858.00.

Dear Mr. Messori,

Pursuant to your request, ***Albus & Associates, Inc***. has completed a review of a conceptual foundation plan and estimated loading by HSA & Associates, Inc., for the proposed garage structure at the subject site. The structure will have 1 level of parking on grade and 5 levels of deck parking with portions of the building partially below current grade. Dead and live column loads are anticipated to vary up to about 675 kips on the exterior walls and up to about 1,225 kips on the interior columns. This firm prepared a preliminary report as referenced above and contains subsurface and test data from the site. We have utilized that data to further evaluate bearing capacity and settlement estimates of foundations based on the preliminary layout and loading provided to us. This letter provides supplemental design criteria based on this evaluation.

From our analyses, we have estimated total settlement of foundations will be up to 1.4 inches based on certain assumptions for ground preparation. In particular, limiting settlement to this estimated maximum value will require recompaction of existing soils below the foundations. Specific recommendations for ground preparation will be provided in a forthcoming updated design report.

From our analyses, we have also estimated the modulus of subgrade reaction that can be used in design of strip footings and mats. From our work, a modulus of 25 pounds per square inch may be used.

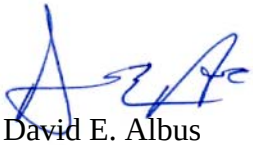
We have also revised our recommended allowable vertical bearing capacity. A bearing value of 2,200 pounds per square foot (psf) may be used for continuous and isolated footings founded at a minimum depth of 12 inches below the lowest adjacent grade and having a minimum width of 12 inches and 24 inches, respectively. The bearing value may be increased by 375 psf and 925 psf for each additional foot in width and depth, respectively, up to a maximum value of 5,000 psf. Recommended allowable

bearing values include both dead and live loads and may be increased by one-half for wind and seismic forces.

The above recommendations supersede those presented in our referenced report. Additional updates will also be required to our referenced report upon completion of our review of project plans.

Sincerely,

ALBUS & ASSOCIATES, INC.



David E. Albus
Principal Engineer
GE 2455

ALBUS-KEEFE & ASSOCIATES, INC.
GEOTECHNICAL CONSULTANTS

December 19, 2019
J.N.: 2797.00

Mr. William Messori
Griffin Capital Company, LLC
Griffin Capital Plaza
1520 E. Grand Avenue
El Segundo, California 90245

Subject: **Preliminary Geotechnical Investigation Report, Proposed Commercial Development, Southwest Corner of E. Grand Avenue and Kansas Street, El Segundo, California.**

Dear Mr. Messori,

Pursuant to your request, ***Albus-Keefe & Associates, Inc***. is pleased to present to you our geotechnical investigation report for the subject development. This report presents a summary of our review of readily available geologic literature and referenced geotechnical reports, subsurface exploration, laboratory testing, and engineering analyses. Conclusions and recommendations relative to the proposed site development are also presented in this report based on the findings of our work.

We appreciate this opportunity to be of service to you. If you should have any questions regarding the contents of this report, please do not hesitate to call.

Sincerely,

ALBUS-KEEFE & ASSOCIATES, INC.

David E. Albus
Principal Engineer

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1.0 INTRODUCTION

1.1 PURPOSE AND SCOPE

The purposes of this investigation were to evaluate the subsurface soil conditions within the project area, to evaluate their engineering characteristics, and to provide preliminary geotechnical conclusions and recommendations relevant to design and construction of the proposed development. The scope of this investigation included the following:

- Review of readily available geologic and seismic data for the site and surrounding area,
- Exploratory drilling and soil sampling,
- Laboratory testing of selected soil samples,
- Engineering analyses of data obtained from our review, exploration and laboratory testing,
- Evaluation of site seismicity, liquefaction potential, bearing capacity, earth pressures and settlement potential,
- Preparation of this report.

1.2 SITE LOCATION AND DESCRIPTION

The site is located at the southwest corner of E. Grand Avenue and Kansas Street in the city of El Segundo, California. The site is bounded by E Franklin Avenue to the south, industrial buildings and California Street to west, East Grand Avenue to north, and Kansas Street to east. The irregular-shaped site encompasses approximately 1.96 acres of land and consists of 6 parcels of land. The site is presently developed with two one- to two-story industrial buildings. A masonry wall and concrete platform are also located at the southeast portion of the site. The remainder of the property is improved with asphalt-paved parking and drive aisles. The asphalt is in poor condition and exhibits various cracks.

Elevations across the site vary, but generally slope south from East Grand Avenue to East Franklin Avenue. Based on Google Earth (2019) across western portion of the site that is elevated, ground surface elevation descends from approximately 135 ft Mean Sea Level (MSL) at California Street to the west, to about 129 ft MSL at the back of an existing retaining wall to the east of this elevated portion. The remainder of the site between East Grand Avenue and East Franklin Avenue is approximately 124 ft MSL at the northwest corner to about 111 ft MSL at the southeast corner of the site. Along the western boundary line, the existing retaining wall is up to about 10 feet in some areas.

Drainage is generally directed to the southeast as sheet flow toward Kansas Street and East Franklin Avenue. Vegetation is located within the landscape planters and consist of medium-sized shrubs, small to medium shrubs, and grass.

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SITE LOCATION MAP

Griffin Capital Company, LLC
247 Kansas Street,
City of El Segundo, California

NOT TO SCALE

FIGURE 1

1.3 PROPOSED DEVELOPMENT

Based on our review of the referenced Conceptual Site Plan, we understand that the site will be developed for commercial use consisting of a two-story building along the north portion of the site with an approximate footprint of 31,000sf. A 2-level parking structure with approximately 88 stalls per level is planned along the south portion of the site. Alternatives have been given to raise the office building to 4-stories and the parking structure to 3.5 levels.

No grading or structural plans were available in preparation of this report. However, we anticipate that some cut and filling of the site will be required to achieve future surface configuration and we expect future foundation loads will be moderate.

2.0 INVESTIGATION

2.1 SUBSURFACE INVESTIGATION

Subsurface exploration for this investigation was conducted on December 11, 2019 and consisted of drilling three soil borings to depths ranging from 31.5 feet to 51.5 feet below the existing ground surface (bgs) using a truck-mounted, continuous flight, hollow-stem-auger drill rig. Representatives of Albus-Keefe & Associates, Inc. logged the exploratory borings. The locations of the borings are depicted on the enclosed Geotechnical Map, Plate 1.

Bulk, relatively undisturbed and Standard Penetration Test (SPT) samples were obtained at selected depths within the exploratory borings for subsequent laboratory testing. Relatively undisturbed samples were obtained using a 3-inch O.D., 2.5-inch I.D., California split-spoon soil sampler lined with brass rings. SPT samples were obtained from the boring using a standard, unlined SPT soil sampler. During each sampling interval, the sampler was driven 18 inches with successive drops of a 140-pound automatic hammer falling 30 inches. The number of blows required to advance the sampler was recorded for each six inches of advancement. The total blow count for the lower 12 inches of advancement per soil sample is recorded on the exploration log. Samples were placed in sealed containers or plastic bags and transported to our laboratory for analyses. The borings were backfilled with a cement-bentonite mix upon completion of sampling.

One additional boring was drilled adjacent to exploratory boring B-1 for percolation testing. A general discussion on the feasibility of storm water infiltration is provided in this report. However, details and results of percolation tests are reported under a separate cover.

2.2 LABORATORY TESTING

Selected samples obtained from our subsurface exploration were tested in our soil laboratory. Tests consisted of maximum dry density and optimum moisture content, in-situ moisture content and dry density, expansion index, consolidation, direct shear strength, and grain-size analysis. A description of laboratory test criteria and a summary of the test results are presented in Appendix B.

3.0 GEOLOGIC CONDITIONS

3.1 GEOLOGIC SETTING

The subject site is situated within a portion of the western Los Angeles Basin that is uniquely characterized by an extensive coastal belt of Late Pleistocene-age sand dune deposits extending to significant depth. The dune deposits were likely deposited in a near shore, non-marine environment and primarily include wind-blown sands that are locally mantled with fine-grained silts and clays associated with lacustrine deposition during episodic periods of severe flooding. The dune sands are generally granular and non-expansive. However, the clay-rich lacustrine deposits typically exhibit moderate to high expansive properties.

3.2 SITE-SPECIFIC SOIL CONDITIONS

Descriptions of the earth materials encountered during our investigation are summarized below and are presented in detail on the Exploration Logs presented in Appendix A.

Soil materials encountered at the site consisted of previously placed engineered fills (Af) underlain by old sand dune deposits (Qos). Artificial fill (Af) materials were encountered in one boring (B-1) out of three borings drilled and were present in the upper 4 feet. The fill materials consisted of medium brown fine-grained silty sand. The fill soils are generally slightly moist and medium dense.

Old sand dune deposits (Qso) were encountered below the artificial fill or very close to the existing ground surface (at B-2 and B-3), extending to at least 51.5 feet below existing ground surface. The old dune sand is mostly composed of silty sands and fine- to medium-grained sand with little or no fines content. These deposits were slightly moist to very moist, light to medium brown and reddish brown, and loose to very dense. The upper surface of the deposit can be weathered and somewhat porous.

A more detailed description of the interpreted soil profile at each of the boring locations, based upon the soil cuttings and soil samples, are presented in Appendix A. The stratigraphic descriptions in the logs represent the predominant materials encountered during investigation. Relatively thin, often discontinuous layers of different material may occur within the major divisions.

3.3 GROUNDWATER CONDITIONS

Groundwater was not encountered by this firm at the time of explorations to the maximum depth explored (51.5 feet below existing ground surface). A review of the referenced Seismic Hazard Zone Report 036 (Venice 7.5-Minute Quadrangle), indicates that historical high groundwater level for the general site area is greater than 50 feet below the existing ground surface.

3.4 FAULTING

Geologic literature does not indicate the presence of active faulting within the site. The site does not lie within an "Earthquake Fault Zone" as defined by the State of California in the Alquist-Priolo Earthquake Fault Zoning Act. Table 3.1 provides a summary of all the known active faults within 10 miles of the site.

TABLE 3.1
SUMMARY OF ACTIVE FAULTS

Name	Distance (miles)	Slip Rate (mm/yr.)	Preferred Dip (degrees)	Slip Sense	Rupture Top (km)	Fault Length (km)
Newport-Inglewood, alt 1	3.98	1	88	strike slip	0	65
Newport Inglewood Connected alt 1	3.98	1.3	89	strike slip	0	208
Palos Verdes	4.38	3	90	strike slip	0	99
Palos Verdes Connected	4.38	3	90	strike slip	0	285
Newport Inglewood Connected alt 2	4.71	1.3	90	strike slip	0	208
Santa Monica Connected alt 2	8.53	2.4	44	strike slip	0.8	93
Puente Hills (LA)	8.58	0.7	27	thrust	2.1	22
Santa Monica Connected alt 1	9.05	2.6	51	strike slip	0	79
Santa Monica, alt 1	9.05	1	75	strike slip	0	14

4.0 ANALYSES

4.1 SEISMICITY

We have performed probabilistic seismic analyses utilizing the Applied Technology Council (ATC) online application conforming with ASCE7-10. From our analyses, we obtain a PGA of 0.597 in accordance with Figure 22-7 of ASCE 7-10. The site amplification factor, F_{PGA}, for Site Class D at this range of PGA is 1.0. Therefore, site modified peak ground acceleration, PGA_M = 1.0 x 0.597 = 0.60g. The mean event associated with a probability of exceedance equal to 2% over 50 years has a moment magnitude of 6.8 and the mean distance to the seismic source is 7.3 miles.

4.2 STATIC SETTLEMENT

As of the time of this report, no loads or foundation configurations are available. Nevertheless, we have performed settlement analyses for typical column loads, wall loads, and footing dimensions anticipated for this project. The subsurface profile and parameters needed for settlement analyses were developed based on the results of our field investigation and material characteristics established from lab test results.

The existing fill materials are only moderately compacted and we have assumed will be recompacted as an engineered fill. The underlying dune sand deposits are generally very dense but exhibit a weathered zone near the surface. The weathered zone exhibits the characteristics of hydrocollapse (consolidation upon wetting). We estimate hydrocollapse of the weathered zone could result in about 2 inches of settlement under future foundation loads due to wetting. Where the foundations would be supported by compacted fill or unweathered dune sands, we estimate settlement due to future foundation loads could be up to about ¾ inches for a column load of about 800 kips and bearing pressure of 3,500 psf. We estimate a total settlement of ½ inch for a continuous footing with a width of 3.5 feet and wall load of 12 kips/ft.

4.3 LIQUEFACTION

Engineering research of soil liquefaction potential (Youd, et al., 2001) indicates that generally three basic factors must exist concurrently in order for liquefaction to occur. These factors include:

- A source of ground shaking, such as an earthquake, capable of generating soil mass distortions.
- A relatively loose silty and/or sandy soil.
- A relative shallow groundwater table (within approximately 50 feet below ground surface) or completely saturated soil conditions that will allow positive pore pressure generation.

The liquefaction susceptibility of the onsite soils was evaluated by analyzing the potential concurrent occurrence of the above-mentioned three basic factors. The liquefaction evaluation for the site was completed under the guidance of Special Publication 117A: Guidelines for Evaluating and Mitigating Seismic Hazards in California (CDMG, 2008).

Historical high groundwater is anticipated at a depth of at least 50 feet below the site. Therefore, the potential for liquefaction to occur beneath the site is considered very low. Furthermore, the site is not located within a mapped California Geologic Survey liquefaction hazard zone.

5.0 CONCLUSIONS

5.1 FEASIBILITY OF PROPOSED DEVELOPMENT

From a geotechnical point of view, the proposed site development is considered feasible provided that the recommendations presented in this report are incorporated into the design and construction of the project. Furthermore, it is also our opinion that the proposed development will not adversely impact the stability of adjoining properties if the recommendations presented in this report are incorporated into site construction.

5.2 GEOLOGIC HAZARDS

5.2.1 Ground Rupture

No active faults are known to project through the site nor does the site lie within the bounds of an "Earthquake Fault Zone" as defined by the State of California in the Alquist-Priolo Earthquake Fault Zoning Act. As such, the potential for ground rupture due to a fault displacement beneath the site is considered very low.

5.2.2 Ground Shaking

The site is situated in a seismically active area that has historically been affected by generally moderate to occasionally high levels of ground motion. The site lies in relative close proximity to several active faults; therefore, during the life of the proposed developments, the property will probably experience similar moderate to occasionally high ground shaking from these fault zones, as well as some background shaking from other seismically active areas of the Southern California region. Potential ground accelerations have been estimated for the site and are presented in Section 4.1 of this report. Design and construction in accordance with the current California Building Code (CBC) requirements is anticipated to address the issues related to potential ground shaking.

5.2.3 Landsliding

Geologic hazards associated with landsliding are not anticipated at the site.

5.2.4 Liquefaction

The depth to historic high groundwater reported by the CGS in the site vicinity is greater than 50 feet below the ground surface (Seismic Hazard Zone Report 036) and the site is underlain by dense natural deposits. As such the potential for liquefaction at the site is considered very low. Furthermore, the site is not located within a mapped California Geologic Survey liquefaction hazard zone.

5.3 STATIC SETTLEMENT

Provided the recommendations in this report are implemented, total static settlement is estimated to be less than 1 inch for proposed structures provided the maximum static column load is about 1,000 kips and the maximum wall load is about 15 kips/ft. Differential settlement is anticipated to be on the order of 1/2 inch over a distance of 30 feet. These values are considered within tolerable limits of proposed structures.

5.4 SOIL EXPANSION

Based on our laboratory test results and the USCS visual manual classification, the near-surface soils are generally anticipated to possess a **Very Low** expansion potential. Testing for soil expansion will be required subsequent to rough grading and prior to construction of foundations and other concrete work to confirm these conditions. Expansive soils can undergo volume changes when they become wetted or dried. These changes can affect the overlying structures and other surface improvements. Given the expansion potential anticipated at the site, only nominal steps will be needed to mitigate adverse effects such as minor steel reinforcing of foundations and slabs, and moisture preparation and jointing details for flatwork.

5.5 EXCAVATION AND MATERIAL CHARACTERISTICS

Existing artificial fill (typically 6 to 7 feet thick) and weathered, porous portions of the Dune Sands (up to about 4 feet thick where present) are anticipated to be unsuitable to support proposed site development in their current condition. This condition can be mitigated by removing and recompacting these materials. Once these materials are removed, they are anticipated to be suitable for reuse as compacted fill.

Temporary construction slopes and trench excavations can likely be cut vertically up to a height of 4 feet within the onsite materials provided that no surcharging of the excavations is present. Temporary excavations greater than 4 feet in height will likely require side laybacks to 1:1 (H:V) or flatter to mitigate the potential for sloughing. Portions of the site below a depth of 8 feet may encounter friable sands that will tend to slough or run. Cuts in these materials will likely require a layback of 1.5:1 (H:V) at any height.

Demolition of the existing site improvements will generate a considerable amount of concrete and asphaltic concrete debris. Significant portions of concrete and asphaltic concrete debris can likely be reduced in size to less than 4 inches in maximum dimension and incorporated within fill soils during earthwork operations.

Onsite disposal systems, clarifiers, and other underground improvements may be present on site. If encountered during future rough grading, these improvements will require proper abandonment or removal.

Off-site improvements, streets, and rights-of-way exist near and along the property lines. Furthermore, some of the existing improvement at the site may be remain in place. The presence of the existing offsite improvements and onsite improvements to remain in place will limit removals of unsuitable materials. Special grading techniques, such as slot cutting or shoring may be required where these conditions limit the lateral extent of removals. Shoring will likely be required for excavation for the subterranean level near property lines.

Subsurface soils are anticipated to be relatively easy to excavate with conventional heavy earthmoving equipment. Removal and recompaction of the site materials will result in some moderate shrinkage and subsidence. Design of site grading will require consideration of this loss when evaluating earthwork balance issues.

The existing near surface soils are typically below optimum moisture content. As such, moisturizing of site materials will likely be required prior to placement as compacted fill

5.6 SHRINKAGE AND SUBSIDENCE

Volumetric changes in earth quantities will occur when excavated onsite soil materials are replaced as properly compacted fill. We estimate the existing artificial fills and upper collapsible Dune Sand deposits will shrink approximately 10 to 20 percent. Reprocessing of removal bottoms are anticipated to result in negligible subsidence. The estimates of shrinkage and subsidence are intended as an aid

for project engineers in determining earthwork quantities. However, these estimates should be used with some caution since they are not absolute values. Contingencies should be made for balancing earthwork quantities based on actual shrinkage and subsidence that occurs during the grading process.

5.7 INFILTRATION OF STORM WATER

Preliminary testing was performed to evaluate the feasibility of onsite infiltration. Based on our exploration and testing, the site is feasible for infiltration of storm water using either shallow basins, shallow chamber systems, or dry wells. Soils in the upper 20 feet are anticipated to provide moderate infiltration rates which would apply to shallow basins and chamber systems. Soils below 20 feet exhibit high infiltration rates which lend well to the use of dry wells.

Provided the site is developed following the recommendations provided in the next sections, infiltration of storm water is not anticipated to worsen any existing geotechnical hazards such as liquefaction, site stability, or expansive soils. The locations of infiltration BMPs will require appropriate setbacks from property lines and structures. Specific design and construction recommendations will be provided under a separate report.

6.0 RECOMMENDATIONS

6.1 EARTHWORK

6.1.1 General Earthwork and Grading Specifications

All earthwork and grading should be performed in accordance with all applicable requirements of CAL/OSHA and the grading requirements of the City of El Segundo, California, in addition to recommendations presented herein.

6.1.2 Pre-Grade Meeting and Geotechnical Observation

Prior to commencement of grading, we recommend that a meeting be held between the owner, grading contractor, civil engineer, City Inspector, and geotechnical consultant to discuss proposed work and logistics. We also recommend that a geotechnical consultant be retained to provide soil engineering and engineering geologic services during site grading. This is to observe compliance with the design specifications or recommendations, and to allow design changes in the event that subsurface conditions differ from those anticipated prior to the start of construction. If conditions are encountered during construction that appears to be different than those indicated in this report, the project geotechnical consultant should be notified immediately. Design and construction revisions may be required.

6.1.3 Site Clearing

Except for the existing buildings and facilities marked to remain, all existing surface improvements, vegetation and other deleterious materials should be removed from the areas to be developed. Existing underground utility lines within the project area that will be left in place and that fall below a 1:1 (H:V) plane projected down from the edges of footings may be subject to surcharge loads. Under such conditions, this office should be made aware of these conditions for evaluation of potential surcharging. Supplemental recommendations may be required to protect such improvements in place.

The project geotechnical consultant should be notified at the appropriate times to provide observation services during clearing operations to verify compliance with the above recommendations. Voids created by clearing should be left open for observation by the geotechnical consultant. Should any unusual soil conditions or subsurface structures be encountered during site clearing or grading that are not described or anticipated herein, these conditions should be brought to the immediate attention of the project geotechnical consultant for corrective recommendations.

6.1.4 Ground Preparation (Removals and Over-excavations)

All existing artificial fill should be removed and re-compacted below structures. Where present, these materials are generally anticipated to be 4 feet in thickness. However, locally thicker Artificial fill may exist at greater thicknesses. In addition, porous and weathered portions of the dune sand deposits should be removed and recompacted within the limits of structures. Where encountered, these materials were up to about 4 feet in thickness. These removals should extend laterally beyond the limits of foundations a distance equal to or greater than the depth of removal.

Within structural paving areas, the existing soils should be removed to a depth of 1 foot below subgrade. These removals should extend to the limits of pavement and curbs, if present.

No removals or over excavation is deemed necessary within future landscape or flatwork areas.

All removals should be evaluated by the geotechnical consultant during grading to confirm the exposed conditions are as anticipated. Following removals, the exposed grade should first be scarified to a depth of 6 inches; moisture conditioned to slightly over the optimum moisture content, and then re-compacted to at least 90 percent of the Modified Proctor standard.

6.1.5 Fill Placement

Materials excavated from the site may be used as fill provided they are free of deleterious materials and oversized materials (particles greater than 4 inches in maximum dimension). All fill should be placed in lifts not greater than 8 inches in loose thickness, moisture conditioned to at least 110% of the optimum moisture content, and compacted. Fill should be compacted to at least 90 percent of the laboratory standard. The laboratory standard for maximum dry density and optimum moisture content for each soil type used should be determined in accordance with ASTM D 1557. Fills should be maintained relatively level and should not slope more than 20 to 1 (H:V). Where fills will be placed on ground that slopes at 5 to 1 (H:V) or greater, the ground surface should be excavated to create a series of level benches prior to placement of fill. Each lift should be treated in a similar manner. Subsequent lifts should not be placed until the project geotechnical consultant has approved the preceding lift.

6.1.6 Temporary Excavations

Temporary construction slopes in native soils and engineered compacted fills may be cut vertically up to a height of 4 feet provided that no surcharging (such as adjacent buildings, walls, etc.) of the excavations are present. Temporary slopes over 4 feet but no more than 8 feet in height should be laid back at a maximum gradient of 1:1 (H:V) or properly shored. Excavations greater than 8 feet in depth are anticipated to encounter friable sands. Excavations should be laid back to a maximum gradient of 1.5:1 (H:V) within these materials.

Excavations should not be left open for prolonged periods of time. The project geotechnical consultant should observe all temporary cuts to confirm anticipated conditions and to provide alternate recommendations if conditions dictate.

Where temporary excavations cannot be laid back in accordance with the recommendation above, slot cutting, shoring, underpinning, or other methods should be used. The geotechnical consultant should provide specific recommendations for these options after specific design plans have been developed.

6.2 SEISMIC DESIGN PARAMETERS

For design of the project in accordance with Chapter 16 of the 2016 CBC, the following table presents the seismic design factors:

TABLE 6.1
2016 CBC Seismic Design Parameters

Parameter	Value
Site Class	D
Mapped MCE Spectral Response Acceleration, short periods, S_S	1.628
Mapped MCE Spectral Response Acceleration, at 1-sec. period, S_1	0.602
Site Coefficient, Fa	1.0
Site Coefficient, Fv	1.5
Adjusted MCE Spectral Response Acceleration, short periods, S_{MS}	1.628
Adjusted MCE Spectral Response Acceleration, at 1-sec. period, S_{M1}	0.903
Design Spectral Response Acceleration, short periods, S_{DS}	1.085
Design Spectral Response Acceleration, at 1-sec. period, S_{D1}	0.602
Long Period Transition Period, T_L (sec)	8
Seismic Design Category- Risk Category I or II	D

MCE = Maximum Considered Earthquake

6.3 PRELIMINARY FOUNDATION DESIGN

6.3.1 General

The following recommendations are presented for preliminary design purposes. These recommendations have been based on the site materials exposed during our investigation and the anticipated structural loads. Final recommendations should be provided by the project geotechnical consultant following observation and testing of site materials during grading and review of structural loads and foundation plans prepared for the proposed site development. Depending upon actual site conditions and the proposed foundation loads, the recommendations provided herein may require modification.

6.3.2 Soil Expansion

The recommendations presented herein are based on soils with **Very Low** expansion potential. Following site grading, additional testing of site soils should be performed by the project geotechnical consultant to confirm the basis of these recommendations. If site soils with different properties are encountered, the recommendations contained herein may require modification.

6.3.3 Settlement

Provided site grading measures are performed as recommended herein, total and differential settlements are estimated to be limited to 1.0 inch and 0.5-inch over 30 feet, respectively.

The estimated magnitudes of total and differential settlement should be considered by the project's structural engineer in design of the proposed structures at the site. If the estimated values are considered beyond tolerable limits, then additional remedial earthwork measures may be required. Specific recommendations should be provided by the geotechnical consultant under such conditions.

6.3.4 Allowable Bearing Value

Provided site grading is performed as recommended herein, a bearing value of 2,000 pounds per square foot (psf) may be used for continuous and isolated footings founded at a minimum depth of 12 inches below the lowest adjacent grade and having a minimum width of 12 inches and 24 inches, respectively. The bearing value may be increased by 300 psf and 800 psf for each additional foot in width and depth, respectively, up to a maximum value of 4,000 psf. Recommended allowable bearing values include both dead and live loads and may be increased by one-third for wind and seismic forces.

6.3.5 Lateral Resistance

Provided site grading is performed as recommended herein, a passive earth pressure of 230 pounds per square foot per foot of depth (pcf) up to a maximum value of 1,150 pounds per square foot (psf) may be used to determine lateral bearing for footings. This value may be increased by one-third when designing for wind and seismic forces. A coefficient of friction of 0.35 times the dead load forces may also be used between concrete and the supporting soils to determine lateral sliding resistance. No increase in the coefficient of friction should be used when designing for wind and seismic forces.

The above values are based on footings placed directly against compacted fill. In the case where footing sides are formed, all backfill against the footings should be compacted to at least 90 percent of the Modified Proctor test according to ASTM standard (ASTM D 1557).

6.3.6 Conventional Slabs on Grade

Exterior and interior building footings may be founded at the minimum depths indicated in the California Building Code. All continuous footings should be reinforced with a minimum of two No. 4 bars, one top and one bottom. The structural engineer may require different reinforcement and should dictate if greater than the recommendations provided herein.

Interior isolated pad footings should be a minimum of 24 inches square and founded at minimum depths of 12 inches below the lowest adjacent final grade. Exterior isolated pad footings should be a minimum of 24 inches square and founded at a minimum depth of 12 inches below the lowest adjacent final grade.

Interior concrete slabs constructed on grade should be a minimum 4 inches thick. However, if such slabs will be used for garage parking, they should have a minimum thickness of 5 inches. Slabs should be reinforced with No. 3 bars spaced 32 inches each way. Care should be taken to ensure the placement of reinforcement at mid-slab height. The structural engineer may recommend a greater slab thickness and reinforcement based on proposed use and loading conditions and such recommendations should govern if greater than the recommendations presented herein.

Concrete floor slabs in areas to receive carpet, tile, or other moisture sensitive coverings should be underlain with a moisture vapor retarder 10-mil Visqueen, or equal. The membrane should be properly lapped, sealed, and protected with at least 2 inches of sand having a sand equivalent (SE) of 30 or greater. One inch of this sand can be placed above the membrane. This vapor retarder system is anticipated to be suitable for most flooring finishes that can accommodate some vapor emissions. However, this system may emit more than 4 pounds of water per 1000 sq. ft. and therefore, may not be suitable for all flooring finishes. Additional steps should be taken if such vapor emission levels are too high for anticipated flooring finishes.

Special consideration should be given to slabs in areas to receive ceramic tile or other rigid, crack-sensitive floor coverings. Design and construction of such areas should mitigate hairline cracking as recommended by the structural engineer.

Block-outs should be provided around interior columns to permit relative movement and mitigate distress to the floor slabs due to differential settlement that will occur between column footings and adjacent floor subgrade soils as loads are applied.

Prior to placing concrete, subgrade soils below slab-on-grade areas should be thoroughly moistened to provide a moisture content that is equal to or greater than 110% of the optimum moisture content to a depth of 12 inches.

6.3.7 Foundation Observations

Foundation excavations should be observed by the project geotechnical consultant to verify that they have been excavated into competent bearing soils and to the minimum embedment recommended above. These observations should be performed prior to placement of forms or reinforcement. The excavations should be trimmed neat, level and square. Loose, sloughed or moisture-softened materials and debris should be removed prior to placing concrete.

6.4 RETAINING/SCREEN WALLS

6.4.1 General

The following preliminary design and construction recommendations are provided for general retaining and screen walls. Final wall designs specific to the site development should be provided for review once completed. The structural engineer and architect should provide appropriate recommendations for sealing at all joints and applying moisture-proofing material on the back of the walls.

6.4.2 Allowable Bearing Value and Lateral Resistance

Retaining walls may utilize the bearing capacities and lateral resistance values provided in Sections 6.3.4 and 6.3.5. The passive pressure used for lateral bearing should be reduced by 50% for walls that have a descending slope below the face of the wall.

The above values are based on footings placed directly against properly compacted fill or competent native soils. In the case where footing sides are formed, all backfill against the footings should be compacted to at least 90 percent of the maximum dry density per ASTM D1557.

6.4.3 Earth Pressures

Conventional retaining walls should be designed for the static earth pressures as indicated in Table 6.2 below. These values are active (unrestrained) and at-rest (restrained) conditions based on backfill material parameters from laboratory tests. All values are for drained backfill conditions and do not consider hydrostatic pressures. All walls should be designed to support any adjacent structural surcharge loads imposed by other nearby walls, footings or traffic loads, and hydraulic pressures in addition to the earth pressures provided below.

In Table 6.2, H is the vertical height of the retained portion of the wall in feet and the resulting pressure is in pounds per square foot (psf). 2016 CBC requires inclusion of seismic pressure for retaining heights greater than 6 feet. Seismic earth pressures provided herein use a peak ground acceleration (PGA) of 0.39g, corresponding to probability of exceedance of 10 percent in 50 years. Seismic earth pressures are based on the method provided by Seed and Whitman (1970) for active condition, and Wood (1973) for at-rest condition.

As indicated in the diagram below, in Table 6.2, static earth pressure has an upright triangular distribution, with its value at base shown by “A”. Seismic earth pressure has an inverted triangular distribution whose base value is represented by “B”. Value “C” represents a combination of these two values, in the form of a uniform pressure distribution.

6.4.4 Footing Reinforcement

Provided site soils are prepared in accordance with Sections 6.1.4, all continuous footings should be reinforced with a minimum of two (2) No. 4 bars, one top and one bottom. The structural engineer may require different reinforcement and should dictate if greater than the recommendations provided herein.

6.4.5 Footing Observations

Footing excavations should be observed by the project geotechnical consultant to verify that they have been excavated into competent bearing soils and to the minimum embedment recommended herein. These observations should be performed prior to placement of forms or reinforcement. The excavations should be trimmed neat, level, and square. Loose, sloughed or moisture-softened materials and debris should be removed prior to placing concrete.

6.4.6 Drainage and Moisture-Proofing

Retaining walls should be constructed with a perforated pipe and gravel subdrain to prevent entrapment of water in the backfill. The perforated pipe should consist of 4-inch-diameter, ABS SDR-35 or PVC Schedule 40 with the perforations laid down. The pipe should be embedded in ¾- to 1½-inch open-graded gravel wrapped in filter fabric. The gravel should be at least one foot wide and extend at least one foot up the wall above the footing and drainage outlet. Drainage gravel and piping should not be placed below outlets and weepholes. Filter fabric should consist of Mirafi 140N, or equal. Outlet pipes should be directed to positive drainage devices.

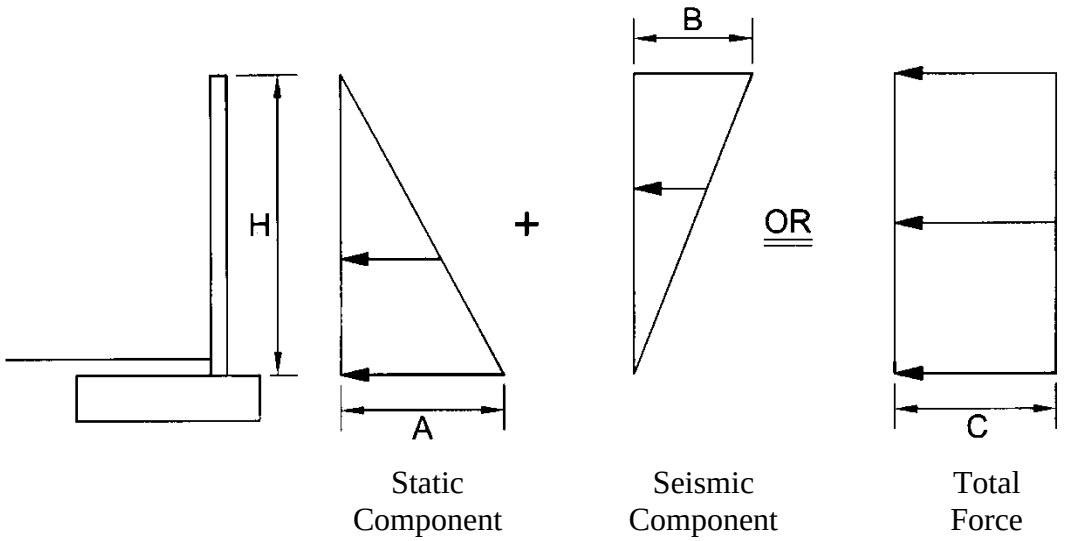
The use of weepholes may be considered in locations where aesthetic issues from potential nuisance water are not a concern. Weepholes should be 2 inches in diameter and provided at least every 6 feet on center. Where weepholes are used, perforated pipe may be omitted from the gravel subdrain.

Retaining walls supporting backfill should also be coated with a moisture-proofing compound or covered with such material to inhibit infiltration of moisture through the walls. Moisture-proofing material should cover any portion of the back of wall that will be in contact with soil and should lap over and cover the top of footing. A drainage blanket such as Mirafi Miradrain should be provided between the soil and the moisture-proofing materials. The drainage blanket should extend from the top of the gravel to within about 12 inches of finish grade. The top of footing should be finished smooth with a trowel to inhibit the infiltration of water through the wall. The project structural engineer should provide specific recommendations for moisture-proofing, water stops, and joint details.

6.4.7 Wall Jointing

All free-standing, exterior site walls should be provided with cold joints through the masonry block section at horizontal spacing generally not exceeding 40 feet. The joints should not extend through the footing. Retaining walls that are integral to the building should be provided joints based on recommendations by the structural engineer.

TABLE 6.2
EARTH PRESSURE DIAGRAMS



Pressure Values
Walls Supporting Engineered Backfill

Value	Un-restrained (Active) Condition		Restrained (At-rest) Condition
	Active Level Backfill	Active 2:1 Backfill	At-rest Level Backfill
A	39H	68H	65H
B	13H	13H	22H
C	26H	41H	44H

Note:
H is in feet and resulting pressure is in psf. Design may utilize either the sum of the static component and the seismic component force diagrams or the total force diagram above. SEAOSC has suggested using a load factor of 1.7 for the static component and 1.0 for the seismic component. The actual load factors should be determined by the structural engineer.

6.4.8 Retaining Wall Backfill

Onsite soils having an expansion index (EI) less than 20 or select imported soils may be used for backfill behind retaining walls provided the wall has been designed for earth pressures as discussed in Section 6.4.3. The project geotechnical consultant should approve the backfill used for retaining walls. Wall backfill should be thoroughly moistened to provide moisture contents slightly over optimum moisture content; placed in lifts no greater than 12 inches in thickness, and then mechanically compacted with appropriate equipment to at least 90 percent of the laboratory standard. Hand-operated compaction equipment should be used to compact the backfill placed immediately adjacent the wall to avoid damage to the wall. Flooding or jetting of backfill material is not recommended.

6.5 EXTERIOR FLATWORK

Exterior flatwork should be a nominal 4 inches thick. Cold joints or saw cuts should be provided at least every 10 feet in each direction. Cold joints should be keyed or provided with dowels spaced 18 inches on center. Special jointing detail should be provided in areas of block-outs, notches, or other irregularities to avoid cracking at points of high stress. Where flatwork is more than 10 feet wide in minimum dimension, the slab should be reinforced with No. 3 bars spaced 30 inches center to center each way.

Subgrade soils below flatwork should be thoroughly moistened to a moisture content to 110% of the optimum to a depth of 12 inches. Moistening should be accomplished by lightly spraying the area over a period of a few days just prior to pouring concrete.

Drainage from flatwork areas should be directed to local area drains and/or other appropriate collection devices designed to carry runoff water to the street or other approved drainage structures. The concrete flatwork should also be sloped at a minimum gradient of 0.5% away from building foundations and masonry walls.

The geotechnical consultant should observe and verify the density and moisture content of subgrade soils prior to pouring concrete to ensure that the required compaction and pre-moistening recommendations have been met.

6.6 CONCRETE MIX DESIGN

Based on our knowledge of the general area of the project and test results from an adjacent project, soluble sulfate content concentration of less than 0.10% is anticipated. We recommend following the procedures provided in ACI 318, Section 4.3, Table 4.3.1 for **negligible** sulfate exposure. Upon completion of rough grading, an evaluation of as-graded conditions and further laboratory testing should be completed for the site to confirm or modify the recommendations provided in this section.

6.7 CORROSION

Based on our knowledge of the general area of the project and test results from an adjacent project, site soils are classified as **Mildly Corrosive** to metals, and structures fabricated from metals may not require corrosion protection if they will be in direct contact with site soils. Nevertheless, we recommend a corrosion specialist be contacted to provide specific recommendations. The chloride content is relatively low and as such, no special requirements are anticipated for protection against chlorides in the site soils. Minimum cover requirements per ACI for rebar embedded in concrete should provide sufficient mitigation from chlorides in site soils.

6.8 PRELIMINARY PAVEMENT DESIGN

6.8.1 Pavement Structural Sections

Based on the anticipated soil conditions present at the site and a range of assumed traffic indices, preliminary pavement sections are provided in the table below. A preliminary “R-value” of 25 was

used for the near-surface soil in this preliminary pavement design. The sections provided below are feasibility-level section and should be re-evaluated subsequent to site investigation, detailed estimates of traffic index, and should be finalized upon site grading. Final pavement sections should be based on actual R-value testing of in-place soils and analysis of anticipated traffic.

6.8.1 Subgrade Preparation

Prior to placement of paving elements, subgrade soils should be scarified 6 inches, moisture-conditioned to at least 100 percent of the optimum moisture content then compacted to at least 90 percent of the maximum dry density determined in accordance with ASTM D1557. Areas observed to pump or yield under vehicle traffic should be removed and replaced with firm and unyielding engineered compacted soil or aggregate base materials.

6.8.1 Aggregate Base

Aggregate base materials should be Crushed Aggregate Base or Crushed Miscellaneous Base conforming to Section 200-2 of the Standard Specification for Public Works Construction (Greenbook) or Class 2 Aggregate Base conforming to the Caltrans' Standard Specifications. The materials should be moisture conditioned to slightly over the optimum moisture content then compacted to at least 95 percent of ASTM D 1557.

TABLE 6.3
PRELIMINARY PAVEMENT STRUCTURAL SECTIONS

Location	Traffic Index	AC (inches)	Concrete Paver	PCC (inches)	AB (inches)
All Entries And Interior Driveways	5.0	3.0 4.0	--	--	7.0 4.0
		--	8 cm		8.0
		--	--	6.0	--
	5.5	3.0 4.0	--	--	9.0 6.0
		--	8 cm		10.0
		--	--	6.5	--
	6.0	4.0 5.0			8.0 6.0
		--	8 cm		11.0
		--	--	7.0	--
Parking Stalls	--	3.0	--	--	4.0

6.8.2 Asphaltic Concrete

Paving asphalt should be PG 64-10 conforming to the requirements of Section 203-1 of the Greenbook. Asphalt concrete materials should conform to Section 203-6 and construction should conform to Section 302 of the Greenbook.

6.8.3 Concrete Paver

Concrete pavers should conform to the requirements of ASTM C 936. Construction of the pavers, including bedding sand, should follow manufacturer's specifications. Typical thickness of bedding sand is about 1 inch. The gradation of bedding sand should meet the requirement in Table 6.4.

TABLE 6.4
Gradation for Sand Bedding

Sieve Size	Percent Passing
⅜"	100
No. 4	95 - 100
No. 8	80 - 100
No. 16	50 - 85
No. 30	25 - 60
No. 50	5 - 30
No. 100	0 - 10
No. 200	0 - 1

6.8.4 Portland Cement Concrete

Portland cement concrete used to construct concrete paving should conform to Section 201 of the Greenbook and should have a minimum compressive strength of 3250 pounds per square inch (psi) at 28 days. Reinforcement and jointing of concrete pavement sections should be designed according to the minimum recommendations provided by the Portland Cement Association (PCA). Transverse and longitudinal contraction joints should be provided at spacing no greater than 15 feet. Score joints may be constructed by saw cutting to a depth of ¼ of the slab thickness. Expansion/cold joints may be used in lieu of score joints. Such joints should be properly sealed. Where traffic will traverse over cold joints or edges of concrete paving, the edges should be thickened by 20% of the design thickness toward the edge over a horizontal distance of 5 feet.

6.9 POST GRADING CONSIDERATIONS

6.9.1 Site Drainage and Irrigation

The ground immediately adjacent to foundations should be provided with positive drainage away from the structures in accordance with 2016 CBC, Section 1804.4. However, the ground slope may be reduced a minimum of 2% for soils and climatic reasons. No rain or excess water should be allowed to pond against structures such as walls, foundations, flatwork, etc.

Excessive irrigation water can be detrimental to the performance of the proposed site development. Water applied in excess of the needs of vegetation will tend to percolate into the ground. Such

percolation can lead to nuisance seepage and shallow perched groundwater. Seepage can form on slope faces, on the faces of retaining walls, in streets, or other low-lying areas. These conditions could lead to adverse effects such as the formation of stagnant water that breeds insects, distress or damage of trees, surface erosion, slope instability, discoloration and salt buildup on wall faces, and premature failure of pavement. Excessive watering can also lead to elevated vapor emissions within building that can damage flooring finishes or lead to mold growth inside the building.

Key factors that can help mitigate the potential for adverse effects of overwatering include the judicious use of water for irrigation, use of irrigation systems that are appropriate for the type of vegetation and geometric configuration of the planted area, the use of soil amendments to enhance moisture retention, use of low-water demand vegetation, regular use of appropriate fertilizers, and seasonal adjustments of irrigation systems to match vegetation needs for water. Specific recommendations should be provided by a landscape architect or other knowledgeable professional. Future homebuyers should be made aware of these issues and consequences.

6.9.2 Utility Trench Backfill

Trench excavations should be constructed in accordance with the recommendations contained in Section 0 of this report. Trench excavations must also conform to the requirements of Cal/OSHA.

Utility trench backfill within the property should be compacted to at least 90 percent of the Modified Proctor standard. Soils placed within the pipe zone (6 inches below and 12 inches above the pipe) should consist of particles no greater than ¾ inches and have a SE of at least 30. The materials within the pipe zone should be consolidated by heavily watering along with some vibratory compaction. Above the pipe zone (>1 foot above pipe), the backfill may consist of general fill materials. Trench backfill should be brought to slightly over optimum moisture content, placed in lifts no greater than 12 inches in thickness, and then mechanically compacted with appropriate equipment to at least 90 percent of the Modified Proctor standard. For trenches with sloped walls, backfill material should be placed in lifts no greater than 8 inches in loose thickness, and then compacted by a sheep-foot roller or similar equipment. The project geotechnical consultant should perform density testing along with probing to verify that adequate compaction has been achieved.

Within shallow trenches (less than 18 inches deep) where pipes may be damaged by heavy compaction equipment, imported clean sand having a SE of 30 or greater may be utilized. The sand should be placed in the trench then heavily watered. For utility trenches located below a 1:1 (H:V) plane projecting downward from the outside edge of the adjacent footing base or crossing footing trenches, concrete or slurry should be used as trench backfill.

6.10 PLAN REVIEWS AND CONSTRUCTION SERVICES

We recommend that ***Albus-Keefe & Associates, Inc***. be engaged to review grading plans and foundation plans prior to construction. The purpose of this is to provide any additional comments and specific recommendations for site grading and development, as well as to verify that the recommendations contained in this report have been properly interpreted and are incorporated into the project specifications. If we are not provided the opportunity to review these documents and perform the necessary engineering analyses, we take no responsibility for misinterpretation of our recommendations.

We recommend that a geotechnical consultant be retained to provide soil engineering services during the grading and construction phases of the work. This is to observe compliance with the design, specifications or recommendations, and to allow design changes in the event that subsurface conditions differ from those anticipated prior to the start of construction.

7.0 LIMITATIONS

This report is based on the proposed development of the site as indicated on the referenced plans, and our subsurface exploration, laboratory testing, engineering analyses and geologic analyses. The materials encountered on the project site are believed representative of the total project area, and the conclusions and recommendations contained in this report are presented on that basis. However, soil and bedrock materials can vary in characteristics between points of exploration, both laterally and vertically, and those variations could affect the conclusions and recommendations contained herein. As such, observation and testing by a geotechnical consultant during the grading and construction phases of the project are essential to confirming the basis of this report.

This report has been prepared consistent with that level of care being provided by other professionals providing similar services at the same locale and time period. The contents of this report are professional opinions and as such, are not to be considered a guaranty or warranty.

This report should be reviewed and updated after a period of one year or if the site ownership or project concept changes from that described herein.

This report has been prepared for the exclusive use of **Griffin Capital Company, LLC** to assist the project consultants in the design of the proposed development. This report has not been prepared for use by parties or projects other than those named or described herein. This report may not contain sufficient information for other parties or other purposes.

This report is subject to review by the controlling governmental agency.

Respectfully submitted,

ALBUS-KEEFE & ASSOCIATES, INC

Bidjan Ghahreman
Associate Engineer
G.E. 3111

David E. Albus
Principal Engineer
G.E. 2455

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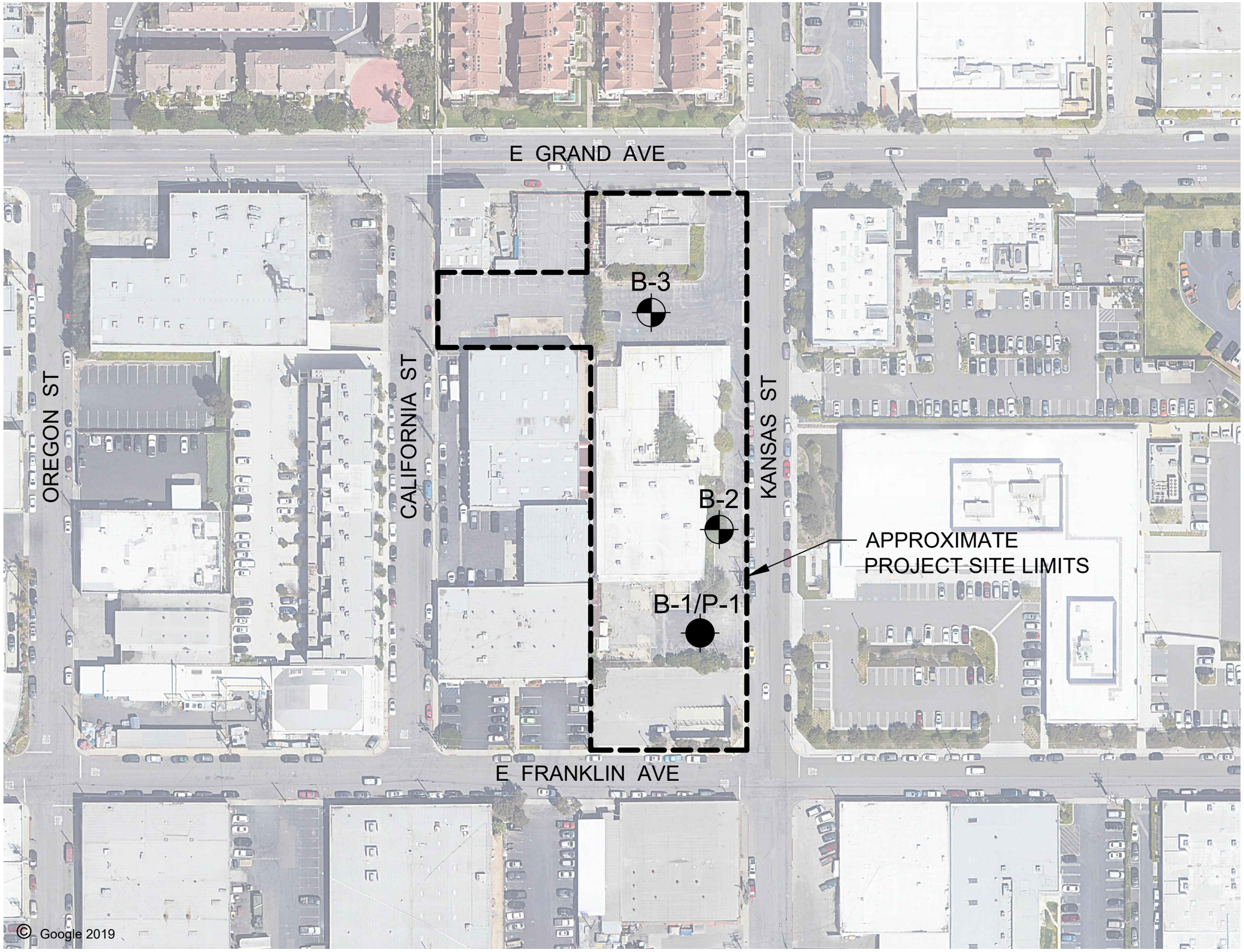
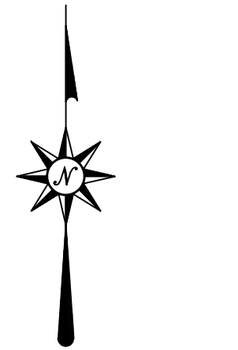




APPROX SCALE : 1" = 50'

EXPLANATION

(Locations Approximate)

- Exploratory Boring

- Exploratory Boring and Percolation Test

ALBUS-KEEFE & ASSOCIATES, INC.
GEOTECHNICAL CONSULTANTS

GEOTECHNICAL MAP

Job No.: 2797.00	Date: 12/19/19	Plate: 1

APPENDIX A

EXPLORATORY LOGS

EXPLORATION LOG

Project:		Location:
Address:		Elevation:
Job Number:	Client:	Date:
Drill Method:	Driving Weight:	Logged By:

Depth (feet)	Lith-ology	Material Description	Water	Samples: Blows Per Foot	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
5		**EXPLANATION** Solid lines separate geologic units and/or material types. Dashed lines indicate unknown depth of geologic unit change or material type change. **Solid black rectangle** in Core column represents California Split Spoon sampler (2.5in ID, 3in OD). **Double triangle** in core column represents SPT sampler. **Vertical Lines** in core column represents Shelby sampler. **Solid black rectangle** in Bulk column respresents large bag sample. **Other Laboratory Tests:** Max = Maximum Dry Density/Optimum Moisture Content EI = Expansion Index SO4 = Soluble Sulfate Content DSR = Direct Shear, Remolded DS = Direct Shear, Undisturbed SA = Sieve Analysis (1" through #200 sieve) Hydro = Particle Size Analysis (SA with Hydrometer) 200 = Percent Passing #200 Sieve Consol = Consolidation SE = Sand Equivalent Rval = R-Value ATT = Atterberg Limits							
10									
15									
20									

EXPLORATION LOG

Project: South Grand Parcels, Smoky Hollow, El Segundo, CA		Location: B-1
Address: 247 Kansas St, El Segundo, CA 90245		Elevation: 112
Job Number: 2797.00	Client: Griffin Capital Company, Inc.	Date: 12/9/2019
Drill Method: Hollow-Stem Auger	Driving Weight: 140 lbs / 30 in	Logged By: MP

Depth (feet)	Lith-ology	Material Description	Water	Samples: Blows Per Foot	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
		Asphalt (AC): 2 inches							MAX EI DS
		ARTIFICIAL FILL (Af) Silty Sand (SM): Medium brown, slightly moist, medium dense, fine grained sand		30			2.7	103.4	
		OLD SAND DUNE DEPOSITS (Qos) Silty Sand (SM): Medium brown, slightly moist, medium dense, fine grained sand, pores present		14			2.8	103.6	Consol
5		@ 6 ft, Brown		24			2.9	104.2	Consol
10		@ 10 ft, fine to medium grained sand		17			4.2	110.3	
		Sand with Silt (SP-SM): Medium brown, slightly moist, medium dense, fine to medium grained sand		19			6.2	108.2	
15									
20				11					SA
		Silty Sand (SM): Medium reddish brown, moist to very moist, dense, fine to medium grained sand							

Albus-Keefe & Associates, Inc.

Plate A-2

EXPLORATION LOG

Project: South Grand Parcels, Smoky Hollow, El Segundo, CA		Location: B-1
Address: 247 Kansas St, El Segundo, CA 90245		Elevation: 112
Job Number: 2797.00	Client: Griffin Capital Company, Inc.	Date: 12/9/2019
Drill Method: Hollow-Stem Auger	Driving Weight: 140 lbs / 30 in	Logged By: MP

Depth (feet)	Lith-ology	Material Description	Water	Samples: Blows Per Foot	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
				26					
		Sand with Silt (SP-SM): Reddish brown, moist, dense, fine to medium grained sand, clay nodules							
30				19					
		Sand (SP): Reddish brown, moist, very dense, fine to medium grained sand, Bt lenses present							
35				41					SA
40		@ 40 ft, Light reddish brown, no Bt lenses, silt nodules		56					
45		@ 45 ft, Light brown, increased fine grained sand, no silt nodules, some medium grained sand		41					

EXPLORATION LOG

Project: South Grand Parcels, Smoky Hollow, El Segundo, CA		Location: B-1
Address: 247 Kansas St, El Segundo, CA 90245		Elevation: 112
Job Number: 2797.00	Client: Griffin Capital Company, Inc.	Date: 12/9/2019
Drill Method: Hollow-Stem Auger	Driving Weight: 140 lbs / 30 in	Logged By: MP

Depth (feet)	Lith-ology	Material Description	Water	Samples			Laboratory Tests		
				Blows Per Foot	Core	Bulk	Moisture Content (%)	Dry Density (pcf)	Other Lab Tests
		@ 50 ft, Tan brown, very fine grained sand, 0.25 inch coarse grained sand layer		68					
		End of boring at 51.5 feet. No groundwater encountered. Backfilled with cement-bentonite mix. Patched with asphalt cold patch. Installed percolation test well (P-1) adjacent to B-1. 37 feet percolation test well.							

EXPLORATION LOG

Project: South Grand Parcels, Smoky Hollow, El Segundo, CA		Location: B-2
Address: 247 Kansas St, El Segundo, CA 90245		Elevation: 114
Job Number: 2797.00	Client: Griffin Capital Company, Inc.	Date: 12/9/2019
Drill Method: Hollow-Stem Auger	Driving Weight: 140 lbs / 30 in	Logged By: MP

Depth (feet)	Lith-ology	Material Description	Water	Samples: Blows Per Foot	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
		Asphalt (AC): 3 inches							
		Crushed Aggregate Base (CAB): 3 inches							
		OLD SAND DUNE DEPOSITS (Qos) Silty Sand (SM): Medium brown, slightly moist, loose, fine grained sand		9	■		3.6	104.2	
				9	■		4.9	104.9	
5		@ 6 ft, Medium reddish brown, medium dense		15	■		5.5	106.3	Consol
10		@ 10 ft, Reddish brown		14	■		6.4	107.5	
		Sand with Silt (SP-SM): Mottled medium brown and reddish brown, slightly moist, medium dense, fine to medium grained sand		16	■		7.8	107.9	
15									
20		@ 20 ft, Reddish brown, increased fines		12	⧗				
		Sand (SP): Reddish brown, slightly moist, dense, fine to medium grained sand, silt nodules							

Albus-Keefe & Associates, Inc.

Plate A-5

EXPLORATION LOG

Project: South Grand Parcels, Smoky Hollow, El Segundo, CA		Location: B-2
Address: 247 Kansas St, El Segundo, CA 90245		Elevation: 114
Job Number: 2797.00	Client: Griffin Capital Company, Inc.	Date: 12/9/2019
Drill Method: Hollow-Stem Auger	Driving Weight: 140 lbs / 30 in	Logged By: MP

Depth (feet)	Lith-ology	Material Description	Water	Samples: Blows Per Foot	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
				28					
30		@ 30 ft, Mottled with medium brown		26					
		End of boring at 31.5 feet. No groundwater encountered. Backfilled with cement-bentonite mix. Patched with cold patch asphalt.							

EXPLORATION LOG

Project: South Grand Parcels, Smoky Hollow, El Segundo, CA		Location: B-3
Address: 247 Kansas St, El Segundo, CA 90245		Elevation: 119
Job Number: 2797.00	Client: Griffin Capital Company, Inc.	Date: 12/9/2019
Drill Method: Hollow-Stem Auger	Driving Weight: 140 lbs / 30 in	Logged By: MP

Depth (feet)	Lith-ology	Material Description	Water	Samples: Blows Per Foot	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
		Asphalt (AC): 4 inches							
		Crushed Aggregate Base (CAB): 3.5 inches							
		OLD SAND DUNE DEPOSITS (Qos)							
		Sand (SP): Light reddish brown, moist, loose, fine to medium grained sand		9	■	■	6	98.8	
		@ 2 ft, Mottled reddish brown and brown							
		@ 3.5 ft, Light reddish brown		18	■	■	4.2	98.6	
5		Sand (SP): Light brown, slightly moist, medium dense, decreased fines, increased medium sands							
		@ 6 ft, Mottled with reddish brown		34	■		6.1	103.1	
10		@ 10 ft, Light reddish brown, dense		47	■		6.1	102.5	
15		@ 15 ft, Light brown, medium grained sand		52	■		3.9	102.3	
20		@ 20 ft, very dense		34	⧗				

EXPLORATION LOG

Project: South Grand Parcels, Smoky Hollow, El Segundo, CA		Location: B-3
Address: 247 Kansas St, El Segundo, CA 90245		Elevation: 119
Job Number: 2797.00	Client: Griffin Capital Company, Inc.	Date: 12/9/2019
Drill Method: Hollow-Stem Auger	Driving Weight: 140 lbs / 30 in	Logged By: MP

Depth (feet)	Lith-ology	Material Description	Water	Samples: Blows Per Foot	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
30				31					
				57					
		End of boring at 31.5 feet. No groundwater encountered. Backfilled with cement-bentonite mix. Patched with cold patch asphalt.							

APPENDIX B

LABORATORY TEST PROGRAM

LABORATORY TESTING PROGRAM

Soil Classification

Soils encountered within the exploratory borings were initially classified in the field in general accordance with the visual-manual procedures of the Unified Soil Classification System (ASTM D 2487). The samples were re-examined in the laboratory and field classifications reviewed and then revised where appropriate. The assigned group symbols are presented in the exploratory logs provided in Appendix A.

In-Situ Moisture Content and Dry Density

Moisture content and dry density of in-place soil materials were determined in representative strata. Test data are presented on the Exploration Logs provided in Appendix A.

Maximum Dry Density and Optimum Moisture Content

Maximum dry density and optimum moisture content test was performed on representative samples of the site materials obtained from our field explorations. The test was performed in accordance with Method A of ASTM D 1557. Pertinent test values are given in Table B.

Grain Size Distribution Analysis

Grain size distribution/hydrometer analysis was performed on selected samples to verify visual classifications performed in the field. The test was performed in accordance with ASTM D 422-63. Test results are graphically presented on Plates B-1 and B-2.

Direct Shear

The Coulomb shear strength parameters, angle of internal friction and cohesion, were determined for a bulk sample obtained from one our borings. The tests were performed in general conformance with Test Method ASTM D 3080. The sample was remolded to 90 percent of maximum dry density and at the optimum moisture content. Three specimens were prepared for each test, artificially saturated, and then sheared under varied loads at an appropriate constant rate of strain. Results are graphically presented on Plate B-6.

Consolidation

Consolidation Tests were performed in general conformance with Test Method ASTM D 2435. Axial loads were applied in several increments to a laterally restrained 1-inch-high sample. Loads were applied in geometric progression by doubling the previous load, and the resulting deformations were recorded at selected time intervals. The test samples were inundated at a selected surcharge loading in order to evaluate the effects of a sudden increase in moisture content. Results of these tests are graphically presented on Plates B-3 through B-5.

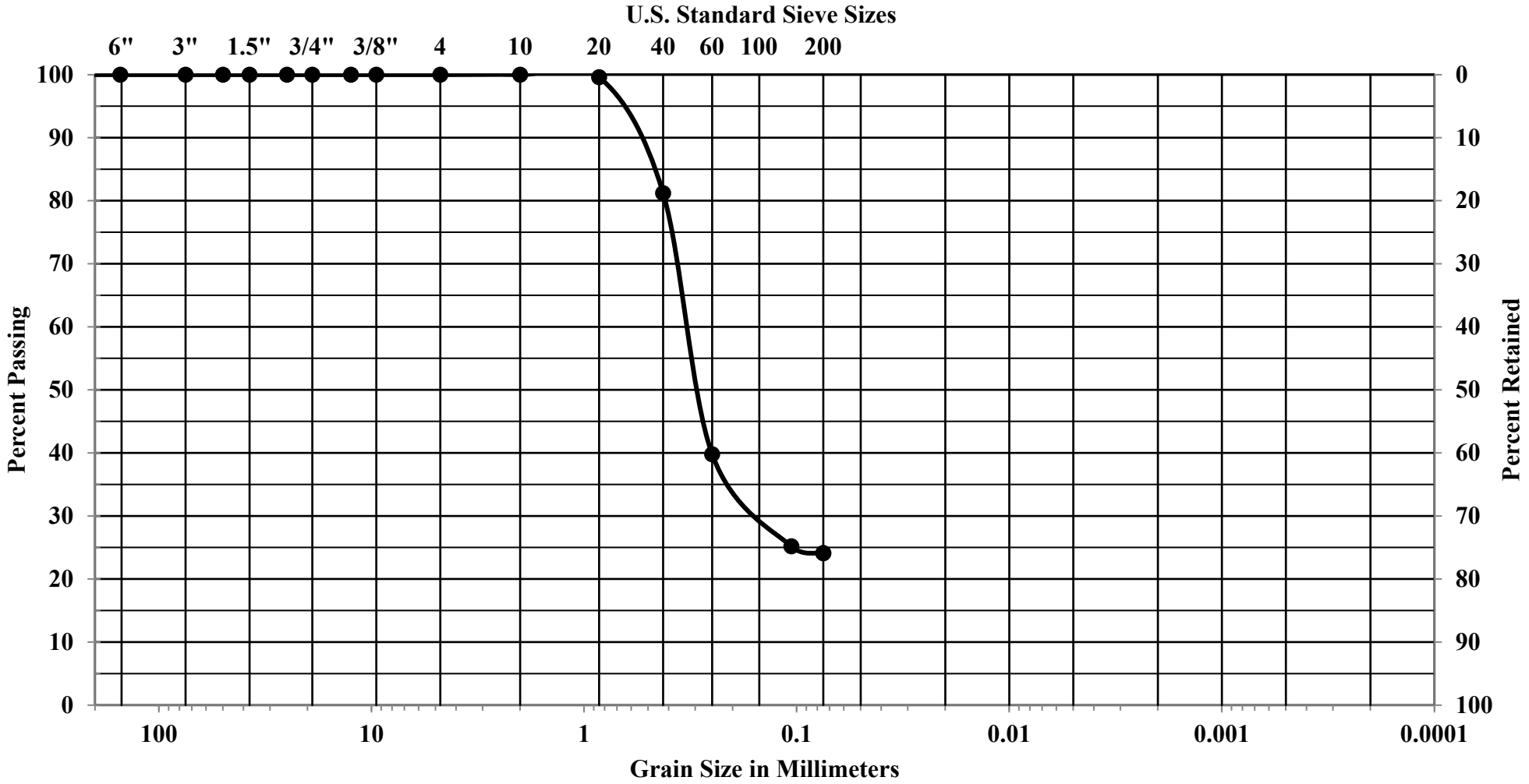
TABLE B
SUMMARY OF LABORATORY TEST RESULTS

Boring No.	Sample Depth (ft.)	Soil Description	Test Results	
B-1	0-5	Sand / Silty Sand (SP / SM)	Maximum Dry Density: Optimum Moisture Content: Expansion Index: Expansion Potential:	114.5 pcf 12.0% 0 Very Low

Additional laboratory test results are provided on the boring logs provided in Appendix A.

GRAIN SIZE DISTRIBUTION

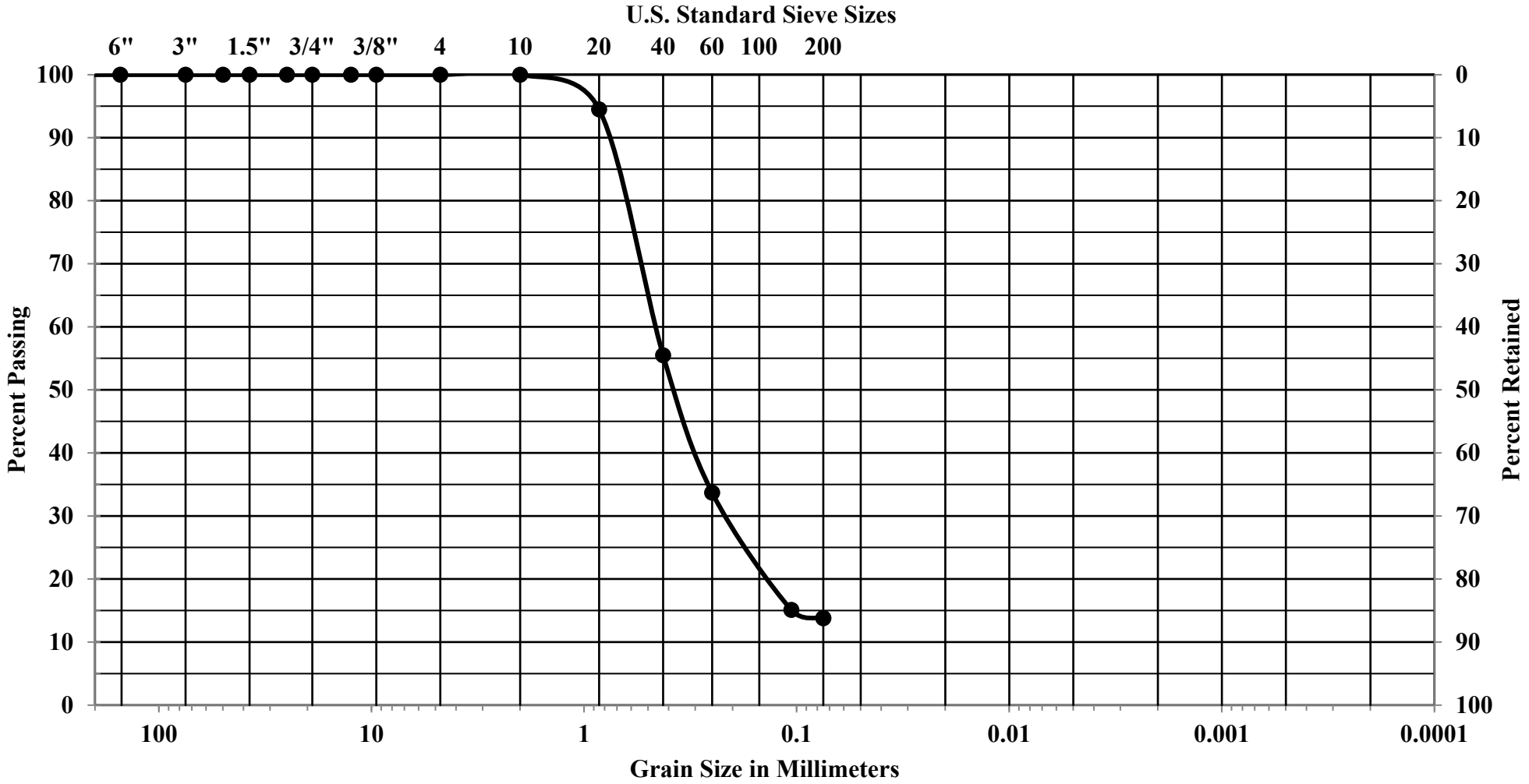
COBBLES	GRAVEL		SAND			SILT AND CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	



Job Number	Location	Depth	Description
2797.00	B-1	20	Silty Sand (SM)

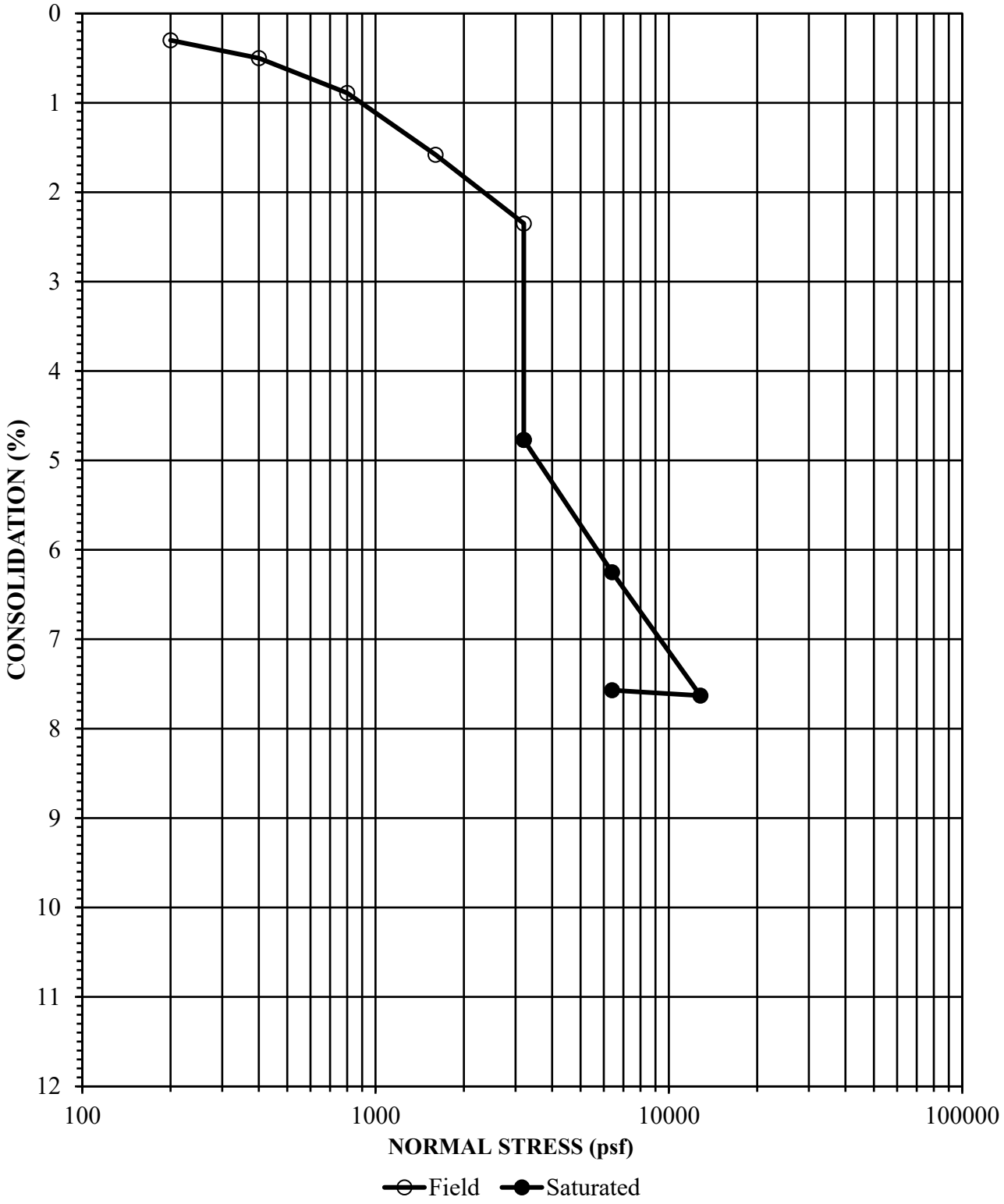
GRAIN SIZE DISTRIBUTION

COBBLES	GRAVEL		SAND			SILT AND CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	



Job Number	Location	Depth	Description
2797.00	B-1	35	Sand with Silt (SP)

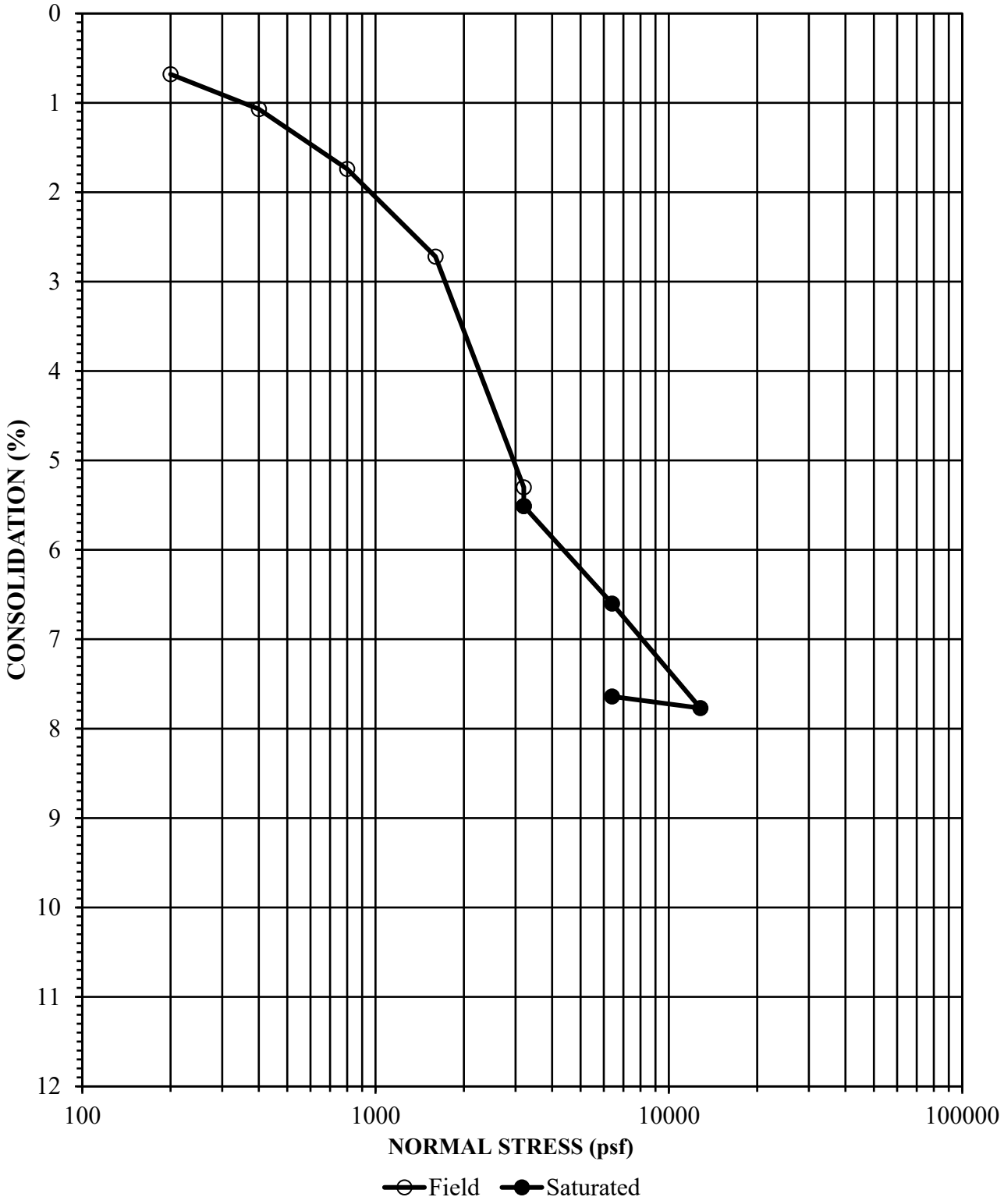
CONSOLIDATION



Job Number	Location	Depth	Description
2797.00	B-1	4	Silty Sand (SM)

Initial Dry Density (pcf)	Initial Moisture Content (%)	Final Moisture Concent (%)
99.7	4.1	16.8

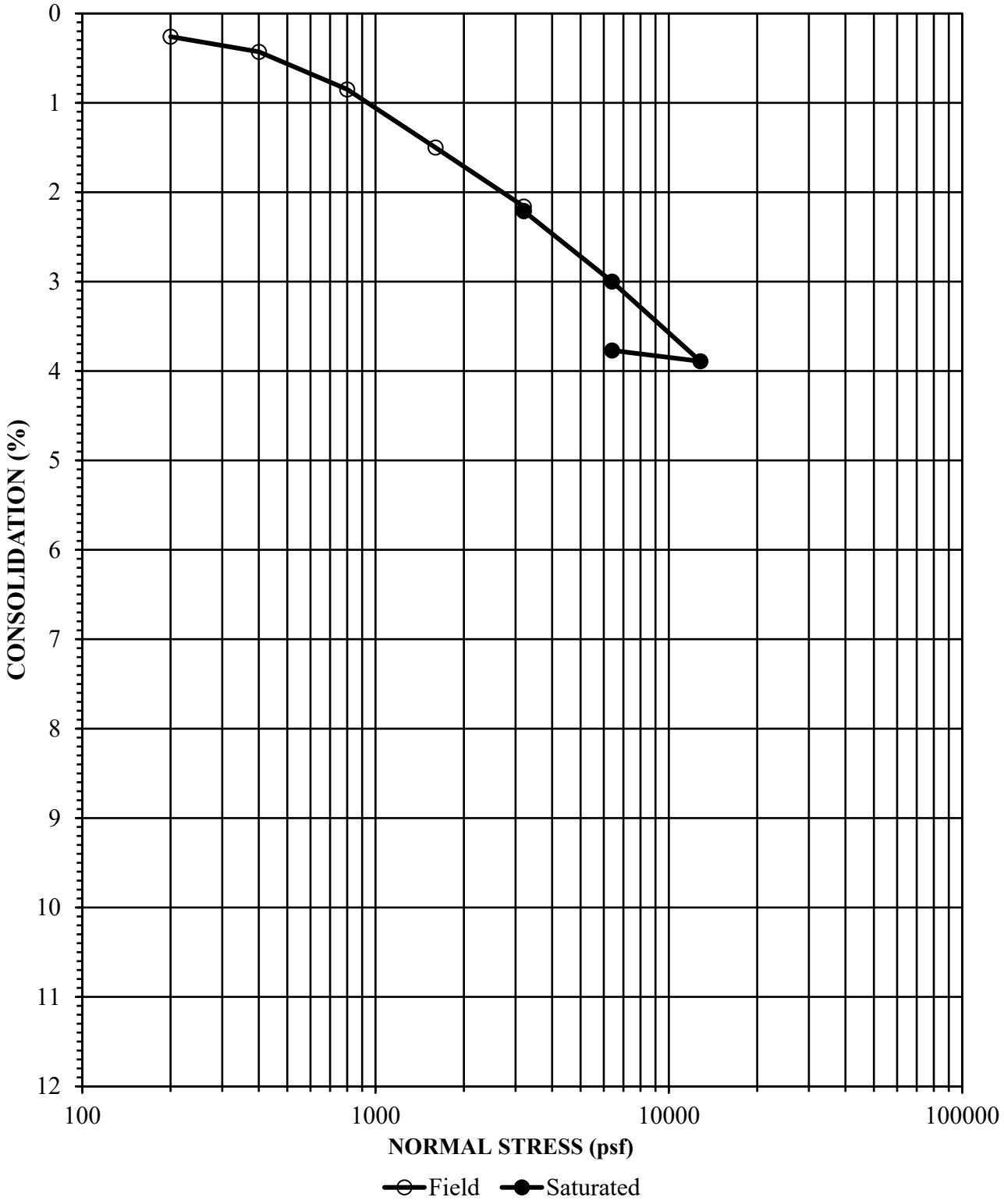
CONSOLIDATION



Job Number	Location	Depth	Description
2797.00	B-1	6	Silty Sand (SM)

Initial Dry Density (pcf)	Initial Moisture Content (%)	Final Moisture Concent (%)
104.5	4.5	15.8

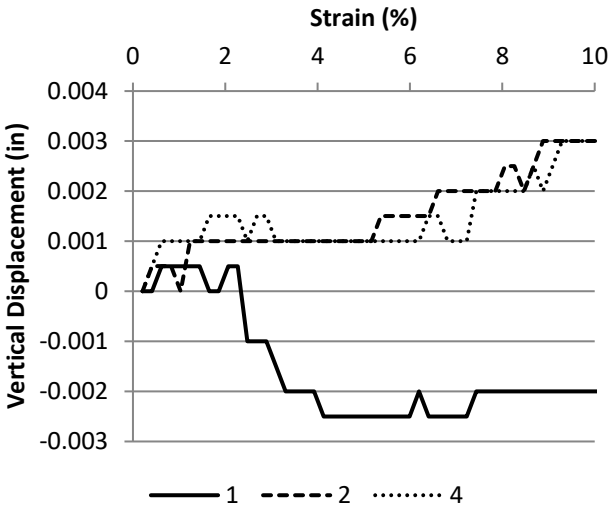
CONSOLIDATION

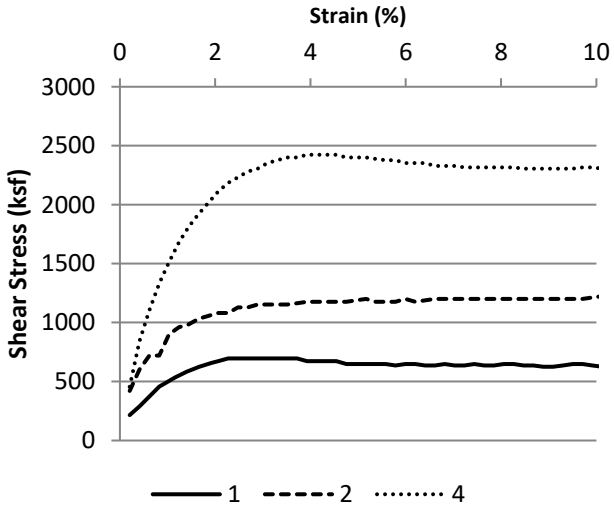


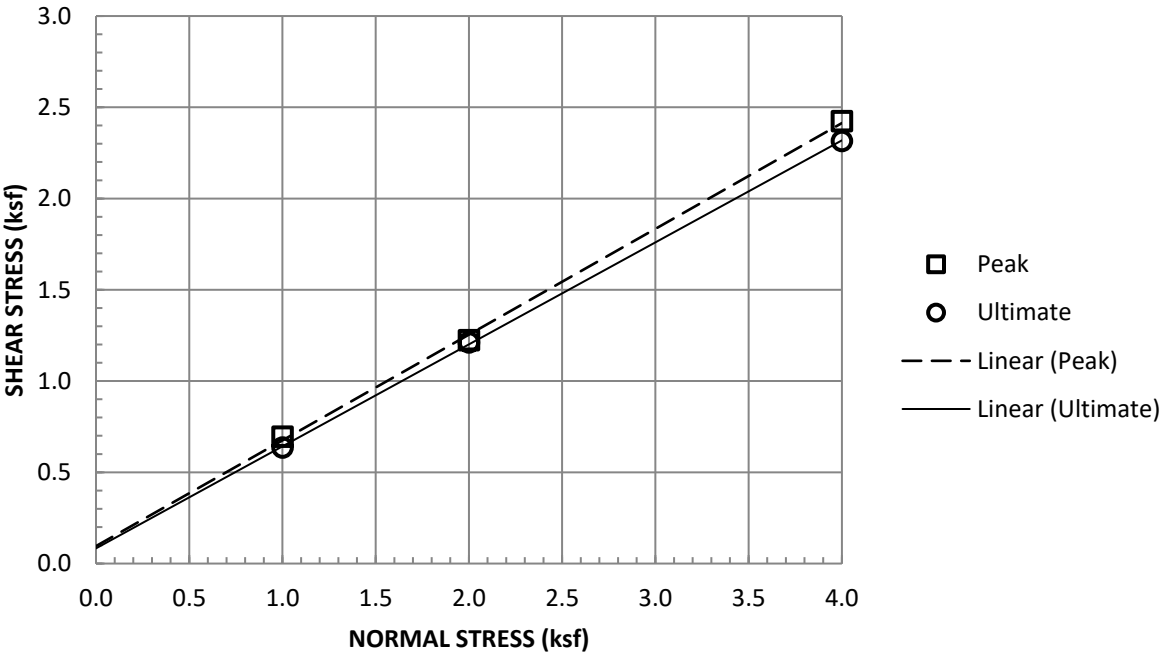
Job Number	Location	Depth	Description
2797.00	B-2	6	Silty Sand (SM)

Initial Dry Density (pcf)	Initial Moisture Content (%)	Final Moisture Concent (%)
103.7	6.5	16

DIRECT SHEAR







Sample Type:	Remolded 90% of 114.5 @ 12%, Saturated		
Normal Stress (ksf)	1	2	4
Peak Shear Stress (ksf)	0.696	1.224	2.424
Peak Displacement (in)	0.003	0.004	0.004
Ultimate Shear Stress (ksf)	0.636	1.212	2.316
Ultimate Displacement (in)	0.25	0.25	0.25
Initial Dry Density (pcf)	103	103	103
Initial Moisture Content (%)	12	12	12
Final Moisture Content (%)	15.1	13.3	15.5
Strain Rate (in/min)	0.01		

Job Number	Location	Depth	Description
2797.00	B-1	0-5	Sand / Silty Sand trace Clay (SP/SM)

ALBUS & ASSOCIATES
formerly Albus-Keefe & Associates, Inc.

October 6, 2020
J.N.: 2797.00

Mr. William Messori
Griffin Capital Company, LLC
Griffin Capital Plaza
1520 E. Grand Avenue
El Segundo, California 90245

Subject: **Addendum #1 to Preliminary Geotechnical Investigation Report, Proposed Commercial Development, Southwest Corner of E. Grand Avenue and Kansas Street, El Segundo, California.**

Reference: *Preliminary Geotechnical Investigation Report, Proposed Commercial Development, Southwest Corner of E. Grand Avenue and Kansas Street, El Segundo, California*, prepared by Albus-Keefe & Associates, dated December 19, 2019, J.N. 2797.00.

Dear Mr. Messori,

Pursuant to your request, ***Albus & Associates, Inc***. has completed a review of a conceptual foundation plan and estimated loading by HSA & Associates, Inc., for the proposed garage structure at the subject site. The structure will have 1 level of parking on grade and 4 levels of deck parking with portions of the building partially below current grade. Dead and live column loads are anticipated to vary up to about 640 kips on the exterior walls and up to about 1,000 kips on the interior columns. This firm prepared a preliminary report as referenced above and contains subsurface and test data from the site. We have utilized that data to further evaluate bearing capacity and settlement estimates of foundations based on the preliminary layout and loading provided to us. This letter provides supplemental design criteria based on this evaluation.

From our analyses, we have estimated total settlement of foundations will be up to 1.4 inches based on certain assumptions for ground preparation. In particular, limiting settlement to this estimated maximum value will require recompaction of existing soils below the foundations. Specific recommendations for ground preparation will be provided in a forthcoming updated design report.

From our analyses, we have also estimated the modulus of subgrade reaction that can be used in design of strip footings and mats. From our work, a modulus of 25 pounds per square inch may be used.

We have also revised our recommended allowable vertical bearing capacity. A bearing value of 2,400 pounds per square foot (psf) may be used for continuous and isolated footings founded at a minimum depth of 12 inches below the lowest adjacent grade and having a minimum width of 12 inches and 24 inches, respectively. The bearing value may be increased by 350 psf and 900 psf for each additional foot in width and depth, respectively, up to a maximum value of 5,000 psf. Recommended allowable

bearing values include both dead and live loads and may be increased by one-half for wind and seismic forces.

The above recommendations supersede those presented in our referenced report. Additional updates will also be required to our referenced report upon completion of our review of project plans.

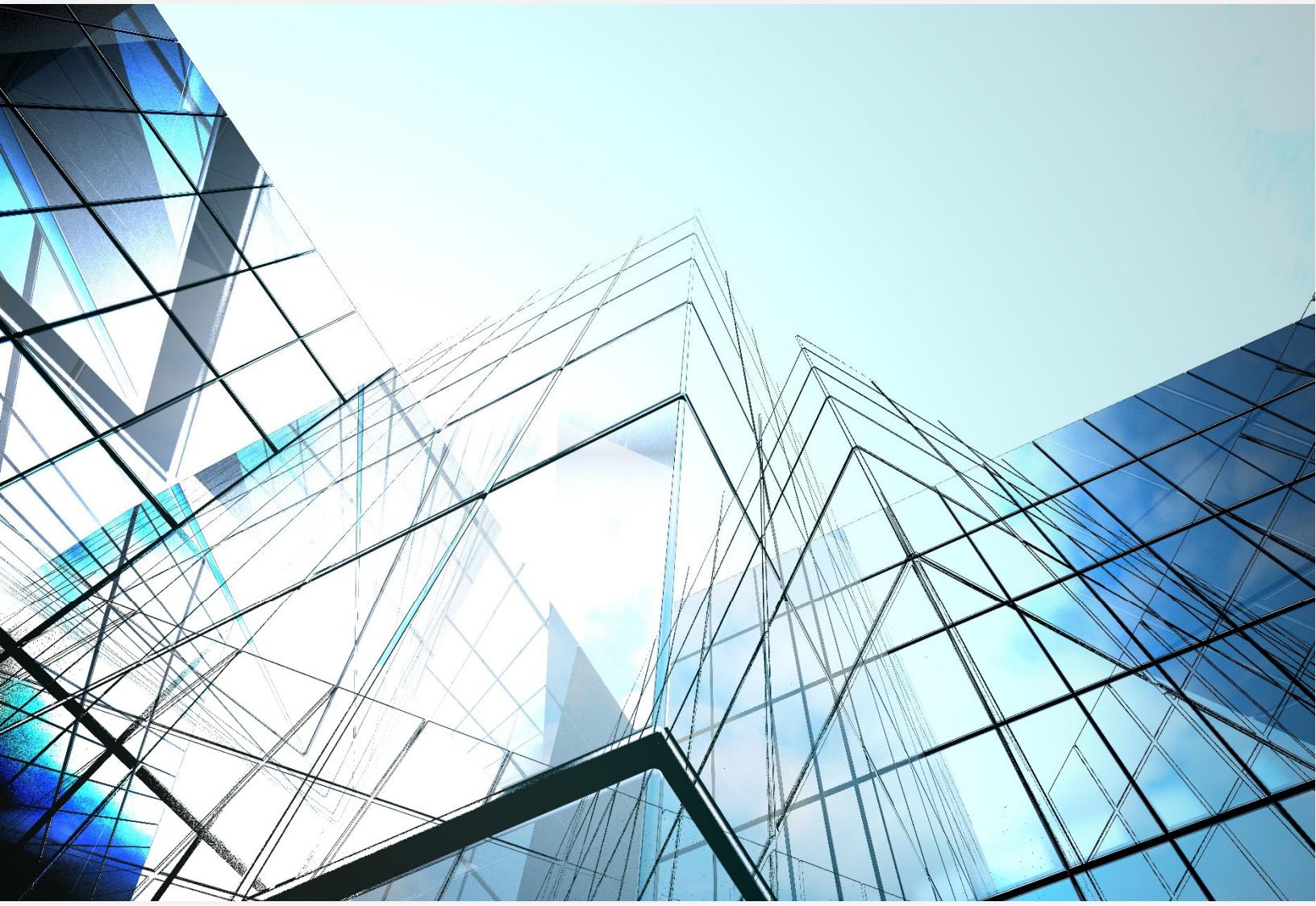
Sincerely,

ALBUS & ASSOCIATES, INC.

David E. Albus
Principal Engineer
GE 2455

Appendix C

Site Characterization Report



Infineon Technologies Americas Corporation

International Rectifier

Revised Site Characterization Report

Block 1 and Block 2, El Segundo, California

2 June 2020

Project No.: 0477647

The business of sustainability

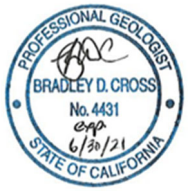
ERM

Signature Page

2 June 2020

Revised Site Characterization Report

Block 1 and Block 2, El Segundo, California



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Acronyms and Abbreviations

µg/kg	Micrograms per kilogram
µg/m^3	Micrograms per cubic meters
ASTM	ASTM International
bgs	Below ground surface
C	Carbon chain
CARB	California Air Resources Board
COC	Contaminants of concern
CSM	Conceptual site Model
DCB	Dicholorobenzene
DCE	Dichloroethene
DOGGR	Division of Oil, Gas & Geothermal Resources
DP	Direct-push
DTSC	Department of Toxic Substances Control
ERM	Environmental Resources Management
ESA	Environmental Site Assessment
ESFD	El Segundo Fire Department
g/cm^3	Grams per cubic centimeter
GTI	Groundwater Technology Inc.
HERO	DTSC Office of Human and Ecological Risk
HI	Hazard index
HRA	Health Risk Assessment
ILCR	Incremental Lifetime Cancer Risk
LARWQCB	Los Angeles Regional Water Quality Control Board
LUC	Land Use Covenant
MCL	Maximum contaminant level
mg/kg	Milligrams per kilogram
MIP	Membrane interface probe
MUN	Municipal or domestic water supply
PCE	Tetrachloroethylene
pH	Hydrogen potential
RAP	Remedial Action Plan
RECs	Recognized environmental condition
RSL	Residential screening level
RWQCB	Regional Water Quality Control Board
SCAQMD	South Coast Air Quality Management District
SFRWQCB	San Francisco Regional Water Quality Control Board
SMP	Soils Management Plan
SSLs	Soil Screening Levels
SVOC	Semi-volatile organic compound
TCE	Trichloroethylene
TEH	Total Extractable Hydrocarbons

TPH	Total Petroleum Hydrocarbons
USEPA	United States Environmental Protection Agency
UST	Underground storage tank
VOC	Volatile organic compound
WWTS	Wastewater Treatment System

1. INTRODUCTION

On behalf of Infineon Technologies (Infineon), ERM-West, Inc. (ERM) has prepared this Draft Revised Site Characterization Report (SCR) for two multiple-address Infineon properties (Block 1 and Block 2) located at East Grand Avenue and Kansas Street in El Segundo, California (the Site or Subject Property). The locations of Block 1 and Block 2, relative to surrounding streets and other physical features, are shown on Figure 1.

This Report is being submitted as requested by the California Department of Toxic Substances Control (DTSC) during a 1 May 2019 meeting held at DTSC and as part of a summary of the Site documents under the Voluntary Cleanup Agreement Program. It characterizes the Site based on historical investigation and remediation activities conducted on the Site and on adjacent off-Site properties by others, and on recent Site investigations completed by ERM. The current layout of the Site, including areas of investigation and remediation, is depicted on Figure 2 (Block 1) and Figure 3 (Block 2).

Infineon has entered into a Letter of Intent to sell the Subject Property to a Developer that plans to demolish most of the buildings and redevelop the Site. This SCR considers the general development plans that have been provided to ERM by Infineon in recommending how the characterized environmental conditions at the Site should be addressed.

2. SITE INFORMATION

This section provides pertinent Site information and geologic and hydrogeologic information.

2.1 Site Location and Description

The Site is in El Segundo, approximately 12 miles southwest of Los Angeles. As shown on Figure 1, the Site is approximately 1 mile south of the Los Angeles International Airport, near the intersection of El Segundo Boulevard and North Sepulveda Boulevard (Pacific Coast Highway). The Site consists of two city blocks of commercial properties (Block 1 and Block 2), separated by north-south-trending Kansas Street and east-west-trending East Grand Avenue.

2.2 Background and Historical Site Operations

Based on information obtained during ERM's 2016 Phase I Environmental Site Assessment (ESA), the Site is improved with commercial buildings that were used for semiconductor manufacturing and offices with associated parking lots and parking structures.

Block 1 (Figure 2) covers 1.85 acres and includes the following:

- 247 Kansas Street – Vacant single-story, approximately 4,697-square-foot, building, formerly used for administrative offices and semiconductor testing. No hazardous materials were reportedly used or stored at this location.
- 233 Kansas Street – Vacant single-story, approximately 18,208-square-foot, building, formerly used for semiconductor manufacturing. A 3,000-gallon-capacity underground storage tank (UST) formerly used for storing tetrachloroethylene (PCE) was near the southwest corner of the building prior to its removal in 1984.
- 1413 Franklin Street – A vacant lot that formerly contained aboveground storage tanks used to store liquid nitrogen and hydrogen.

Block 2 (Figure 3) covers 3.25 acres and consists of:

- 1521 Grand Avenue – A vacant two-story, approximately 48,656-square-foot, steel-frame structure that was a former semiconductor manufacturing facility. This structure was used as research and development laboratories with a clarifier along west side of the building (according to Infineon, the clarifier has been removed by Infineon's subcontractor and the associated Wastewater Treatment System [WWTS] permit was closed).
- 330 Kansas Street – A vacant three-story, approximately 29,754-square-foot, concrete tilt-up, former semiconductor manufacturing facility, was used for storage with an associated wastewater treatment structure.
- 340/348 Kansas Street – A vacant single-story, approximately 17,920-square-foot, concrete tilt-up, former electrical laboratory.
- 318 Kansas Street – A vacant lot that formerly included a maintenance and parts-repair building.

Recognized environmental conditions (RECs) and other issues raised during ERM's Phase I ESA for Block 1 included:

- Release of PCE to soil was identified during a 1989 geotechnical investigation at 233 Kansas Street – The investigation was conducted at the location of a former PCE UST (3,000-gallon capacity, removed in 1984). Based on investigation and remediation activities conducted between 1989 and 1996 (summarized in Section 3.1.1), the Site received a case closure for the PCE release to soil from the Los Angeles Regional Water Quality Control Board (LARWQCB) in 1997.

- Acid Release to Soil at 233 Kansas Street – On 11 May 1995, a leak occurred from a polyvinyl chloride pipe containing a dilute solution of distilled water, sulfuric acid, hydrofluoric acid, hydrochloric acid, hydrogen peroxide, and ammonium fluoride at the 233 Kansas Street Site Building (Figure 2). Subsurface investigations related to this leak, as summarized in Section 3.1.2 of this Report, determined that the conditions at the Site of the former waste line release did not present a risk to human health, safety, or the environment.
- Potential for Solvent Release from Subsurface Pipeline at 233 Kansas Street – Reportedly, a solvent pipeline was removed that formerly delivered fluid between the 233 Kansas Street Building (Figure 2) and an adjacent property immediately east of the Subject Property. As no documentation was available regarding the pipeline removal, additional subsurface investigation was later conducted in the vicinity of the former pipeline (summarized in Section 3.1.7).

RECs and other issues raised during ERM's Phase I ESA for Block 2 included:

- Potential Subsurface Impact from the WWTS at 330 Kansas Street (Figure 3) – Reportedly the El Segundo Fire Department (ESFD) issued a July 2014 letter to Infineon, stating that this facility was still permitted and that the conditional authorization for waste neutralization was not closed. According to Infineon, the WWTS has since been removed by its subcontractor and the WWTS permit was closed (documentation was not provided to ERM for review).
- Former USTs at 330 Kansas Street – In 1998, three USTs were excavated and removed from the central portion of Block 22 (Figure 3, west of the 330 Kansas Street Building) with oversight provided by the ESFD. Details of soil sampling conducted as part of the UST removal activities on Block 2 are provided in Section 3.1.4.
- Low Levels of Total Extractable Hydrocarbons (TEH) and PCE in Soil at 1521 East Grand Avenue - Details regarding this REC are provided in Section 3.1.3.
- Historical Railroad – A railroad line was present in the southwest portion of Block 2 (Figure 3) until the early 1980s. An assessment of shallow soil related to this REC is detailed in Sections 3.1.3 and 3.1.9.

Additionally, the Site is potentially in an area subject to methane soil-gas hazards due to former El Segundo Oil Field operations (the site and adjacent properties overlie a former oil field that was developed in the early 1900s). One historical oil well, "Block 21" (also known as "Elsie 119-1") was reported to have been located in the central portion of Block 2 (Figure 3). Additional information regarding the former oil well is discussed in Section 3.1.3.

2.3 Physical Settings

2.3.1 Geology

Regionally, the Site is located within the Peninsular Ranges geomorphic province. This province is characterized by elongated northwest-trending mountain ridges, separated by generally straight-sided sediment-filled valleys. The northwest trend is further displayed in the dominant, geological structural features of the province, which include northwest to west-northwest-trending folds and faults, such as the nearby Newport-Inglewood Fault zone located approximately 5 miles east of the Site. There are no documented active or potentially active faults within or projecting toward the Site. The Site is situated within a coastal area referred to as the Western Los Angeles Basin characterized by an extensive coastal belt of late Pleistocene age, non-migrating dunes, and more recent eolian (wind-blown) sand, which is referred to as the El Segundo Sand Hills. The Sand Hills, located at and in the vicinity of the Site, are made up of stabilized dunes that, prior to development, had crests ranging from 85 to 185 feet above mean sea level. The coastal belt includes middle-Pleistocene age sediments that were deposited on an

ancient ocean floor (i.e., marine deposits) of the San Pedro formation and the older underlying Lakewood formation. The sandy sediments that make up these two geologic formations comprise the main groundwater-bearing strata in this portion of the Los Angeles Basin.

Based on ERM's subsurface investigation (ERM 2018), on-Site soil, to a depth of approximately 80 feet below ground surface (bgs), primarily consists of brown, fine-grained, slightly silty, loose sand. It was observed to be dry to moist. Neither bedrock nor groundwater were encountered in any soil borings.

2.3.2 Hydrogeology

As described in the Phase I ESA (ERM 2016) the Site is located within the El Segundo Sand Hills of the Los Angeles Coastal Plain. The water bearing formations of this basin include deposits of recent and Pleistocene Age alluvium overlying Pliocene and Miocene Age sedimentary deposits. Principal aquifers located beneath the Site include the Ballona and Silverado Aquifers. Based on publicly available reports of neighboring groundwater monitoring data, groundwater flow in the vicinity of the Site is generally to the west/southwest at a depth of approximately 100 to 110 feet below ground surface (bgs). Seawater intrusion and off-Site hydrocarbon sources have degraded the regional groundwater quality in the vicinity of the Site. The West Coast Basin Barrier project, designed to control seawater intrusion by the creation of an artificial gradient using water injection, is located approximately 350 to 650 feet east (upgradient) of the Site. Based on the general degradation of groundwater at and near the Site, it is not designated for municipal or domestic water supply (MUN) by the LARWQCB. There are no federal or state groundwater wells located within 1 mile of the Site.

The Gage and Silverado Aquifers of the San Pedro Formation are present beneath the Site. The lower Silverado Aquifer is used for active water injection in the area that is part of the West Basin Barrier System controlling the intrusion of salt water in the usable aquifer. The Site is located immediately west (ocean side) of the barrier system. High total dissolved solids in shallow groundwater are present as a result of saltwater intrusion into the Gage Aquifer.

Additionally, Chevron and others have impacted groundwater in this area. The MUN beneficial use designation for the groundwater located in this area of El Segundo was removed in November 1998 when the LARWQCB adopted Resolution No. 98-18 based on groundwater contamination caused by the Chevron refinery, less than 400 feet south of the Site.

3. PREVIOUS INVESTIGATION AND REMEDIATION ACTIVITIES

The following sections provide brief summaries of environmental investigation and remediation activities that have been conducted at the Site. Section 3.1 summarizes subsurface soil investigation and remediation activities. Section 3.2 summarizes results of soil vapor investigations at the Site. Section 3.3 summarizes the results of indoor air samples collected at the Site.

3.1 Subsurface Soil Investigations and Remedial Actions

Following the 1984 removal of a UST that was used for storage of PCE on Block 1, several subsurface soil investigations and remedial actions were conducted by others. ERM conducted additional subsurface soil investigations in 2017, 2018, and 2019 to assess the lateral and vertical occurrence of contaminants of concern at the Site in preparation for its sale and re-development.

3.1.1 Former PCE UST – Block 1

Between 1989 and 1996, investigation and remediation activities were conducted at the Site in connection with the release of PCE from a UST that was removed from Block 1 in 1984. Details of these investigation and remediation activities are provided in the 3 July 1996 *Closure Report & Verification Plan, International Rectifier Corporation, 233 Kansas Street* (Closure Report) by Fluor Daniel GTI, Inc. (Fluor Daniel) and summarized below. A copy of the Fluor Daniel Closure Report is provided in Appendix A-1.

As described in the Closure Report (Appendix A-1), in April 1989, after detecting odors during the drilling of a geotechnical soil boring at the former UST area on Block 1 (refer to Figure 2), Sladden Engineering collected soil samples at depths of 9 and 33 feet bgs. The two samples were analyzed for the presence of volatile organic compounds (VOCs), with reported concentrations of PCE at 1,300 and 14,000 milligrams per kilogram (mg/kg), respectively.

As further described in the Closure Report, in May 1989, Ecology and Environment, Inc. drilled three additional borings to assess the extent of PCE at the former UST location. PCE was detected in only one of the three borings, at concentrations of 680 mg/kg at 18 feet bgs, 2,500 mg/kg at 35 feet bgs, 100 mg/kg at 60 feet bgs, and 0.010 mg/kg at 80 feet bgs.

Between January 1990 and April 1993, Fluor Daniel conducted further characterization of subsurface soil near the former UST before implementing a Remedial Action Plan (RAP) that was approved by the Los Angeles County Department of Public Works in January 1991. Subsequently, Fluor Daniel completed additional investigation activities and performed vapor extraction pilot testing in 1993. Implementation of the RAP began in March 1994. A vapor extraction system was installed and operations began in December 1994.

Soil vapor extraction continued at the Site until March 1996. As reported, the system operated for a total of 6,910 hours and removed approximately 15,853 pounds of VOCs. From one verification soil boring drilled near the center of the affected area, PCE was detected in five samples, decreasing from 0.020 mg/kg at 10 feet bgs to 0.005 mg/kg at 80 feet bgs.

In 1997, the Site received a case closure for the PCE release to soil from the LARWQCB. The closure letter stated that approximately 15,853 pounds of VOCs had been removed and that the site had reached an asymptotic rate of recovery, resulting in residual PCE concentrations in soil (0.057 mg/kg at 65 feet bgs) that were only slightly above the cleanup guideline of 0.032 mg/kg. The LARWQCB further concluded that groundwater had not been impacted. A copy of the LARWQCB's 27 February 1997 No Further Action letter is provided as Appendix A-2

3.1.2 Soil Characterization in the Area of the Acid Release - Block 1

In 1995, a solution composed of distilled water, sulfuric acid, hydrofluoric acid, hydrochloric acid, hydrogen peroxide, and ammonium fluoride was released from a break in a waste product line inside the 233 Kansas Building (Block 1). Reportedly, 99.582 percent of the solution, by weight, consisted of distilled water. The approximate location of the release is shown on Figure 2.

Details of two subsurface investigations related to the release (described below) are provided in the Groundwater Technology, Inc. (GTI) 23 August 1995 *Environmental Assessment Report*, and Environ, Inc. (Environ) 4 August 2000 report, *Results of Subsurface Investigation Previous Waste Line Acid Release*. Copies of the GTI and Environ reports are provided as Appendix A-3 and Appendix A-4, respectively.

In 1995, GTI collected samples on the sidewalls and bottom of a solution cavity that formed under the former pipeline break. One soil boring was advanced to a depth of approximately 13 feet bgs (approximately 5 feet below the bottom of the solution cavity). The approximate location of that GTI boring is shown on Figure 2. GTI noted that impacted soil had been cemented in varying degrees as a result of its exposure to the corrosive release. Soil samples collected from 9 feet, 10 feet, and 13.25 feet bgs were analyzed for hydrogen potential (pH) with results of 2.6, 2.9 and 4.3, respectively. The soil sample from 9 feet bgs was analyzed for VOCs, semivolatile organic compounds (SVOCs), metals, and pH. Concentrations of VOCs and SVOCs were not detected. As reported, concentrations of metals were detected at levels less than the limits used to identify hazardous wastes under California Code of Regulations, Title 22, Section 66261.24. Concentrations of metals detected above reporting limits included barium, lead, and zinc, at concentrations of 490 mg/kg, 4.3 mg/kg, and 25 mg/kg, respectively. These values are below the current United States Environmental Protection Agency (USEPA) Regional SL (RSLs) for commercial property (220,000 mg/kg, 800 mg/kg, and 350,000 mg/kg, respectively). The concentration of lead (4.3 mg/kg) is also below a current DTSC Note 3 Commercial Screening Level (320 mg/kg). GTI concluded that there was no risk to human health from inhalation or dermal exposure of acidic vapors, and that there was no risk of downward contaminant leaching by rainwater since the area of spill was contained within the building.

In 2000, Environ advanced four soil borings; one boring was advanced to 25 feet bgs at the location of the release, and the three surrounding borings (approximately 10 to 15 feet from the first boring, were advanced to 16 feet bgs. Approximate locations of Environ's soil borings are shown on Figure 2. A more detailed depiction of the soil boring locations drilled at the location of the former acidic solution release is shown on Figure 4. Soil samples from three to four depth intervals were collected in each of the Environ borings, SB-1 through SB-4. All of the 13 soil samples collected were tested for pH, with results ranging from 3.6 to 4.9. According to Environ, these pH levels did not pose a health concern to building occupants, as there was no exposure pathway.

As shown on Table 1, two soil samples from 15 feet bgs and one soil sample from 25 feet bgs (directly below the location of the former acidic solution release) were also analyzed for VOCs and metals. Concentrations of VOCs were reported by Environ to be non-detected in all of the samples tested. As shown on Table 1, barium was detected in all three soil samples, at 4.3 mg/kg and 19 mg/kg in the 15-foot soil samples, and 1,700 mg/kg in the soil sample from 25 feet bgs. The source of the relatively higher concentration of barium at 25 feet bgs is unknown, but as it was not a reported chemical used at the Site, it is suspected to be related to historical oil-field operations (drilling fluids) common to the property and surrounding area of El Segundo. Other detected metals were copper (3.3 mg/kg, detected in only one sample from 15 feet bgs), lead (19 mg/kg, detected in only one sample from 25 feet bgs) and vanadium (3.7 mg/kg, detected in only one sample from 15 feet bgs). These values are below the current USEPA commercial RSLs (47,000 mg/kg, 800 mg/kg, and 5,800 mg/kg, respectively). The concentration of lead at 25 feet bgs (19 mg/kg) is also below the current DTSC Note 3 commercial screening level (320 mg/kg)

and similar to the average concentration of lead detected in first soils below pavement during a later investigation conducted by ERM (Section 3.1.5). These results demonstrate that the release of acidic solution did not cause downward migration of metals resulting in elevated concentrations at depth. Environ concluded that the conditions at the former waste line acid release did not present a risk to human health, safety, or the environment, and no further work was recommended.

3.1.3 1996 Phase I and Phase II Investigation – Block 2

As part of a 1996 Phase I and Phase II environmental investigation by GTI, soil samples were collected from five borings drilled on the southern half of Block 2, in and around the 1521 Grand Avenue Building. The purpose of GTI's Phase II investigation was to assess whether or not historical activities in that area had impacted subsurface soils. Selected soil samples were analyzed for diesel-fuel-range total petroleum hydrocarbons (TPH), halogenated VOCs, priority pollutant metals, and methyl-tert-butyl-ether. A copy of GTI's 5 April 1996 report, *Phase I and II Environmental Investigations International Rectifier Sites 318 Kansas Street and 1521 E. Grand Avenue El Segundo, California* (GTI Report) is provided as Appendix A-5.

As detailed in GTI's report, three of the borings (SB-1, SB-2 and SB-3 shown on Figure 2 of Appendix A-5) were drilled to depths ranging from 5 to 20 feet bgs to assess past operations associated with the 1521 Grand Avenue Building. As shown in Table 4 of the GTI Report in Appendix A-5, one sample collected in boring SB-2 at 5 feet bgs at the northwest corner of the building (Figure 2 in Appendix A-5) contained 380 mg/kg of TEH and 2.3 micrograms per kilogram (µg/kg) of PCE. As reported by GTI, no other VOCs were present above detection limits. Furthermore, as shown in Table 4 of the GTI Report in Appendix A-5, soil samples collected at 10 and 15 feet bgs in that boring did not contain concentrations of TEH or VOCs above detection limits. GTI concluded that the extent of detectable TEH and PCE is limited to the upper 5 feet of soil in this area. It is possibly related to former oil field activities as the GTI boring SB-2 is near the location of a former oil well, as shown on Figure 3 of this SCR. As reported by GTI, the concentration of TEH was below the Regional Water Quality Control Board guidance level (10,000 mg/kg) for remediation of petroleum-impacted soil. GTI concluded that these concentrations, if left in place, do not present a threat to human health or the environment and would not likely be a subject of an enforcement action if brought to the attention of appropriate governmental agencies.

Two of the five GTI borings (SB-4 and SB-5, shown on Figure 2 of Appendix A-5) were drilled to a depth of 5 feet bgs along the approximate alignment of the former railroad (refer to Figure 4 of this SCR) to evaluate for the presence of TEH, 17 California Assessment Manual metals, and VOCs. As reported by GTI, soil samples collected at 5 feet bgs in its borings SB-4 and SB-5 did not contain detectable TEH or VOCs, and California Assessment Manual metals were below levels of concern (i.e., below the USEPA Region IX Preliminary Remediation Goals and California hazardous waste criteria).

As part of this investigation, GTI obtained historical records related to the former oil well on Block 2. Included in GTI's Phase I and Phase II Report (Appendix A-5) are records obtained from the Division of Oil, Gas & Geothermal Resources (DOGGR) well-finder database. The DOGGR files indicate that the well was plugged and abandoned in June 1948.

3.1.4 1998 UST Removal – Block 2

Between 27 July and 14 August 1998, three USTs, including one 10,000-gallon diesel-fuel UST, one 6,000-gallon wastewater UST, and one 6,000-gallon waste solvent UST, were excavated and removed from the central portion of Block 2 (Figure 3, west of the 330 Kansas Street Building). Oversight was provided by the ESFD. Details of the UST removal activities, including the sampling and analysis of subsurface soils as directed by ESFD are documented in the 4 November 1998 *Tank Removal Report*

International Rectifier 330 Kansas Street El Segundo, California, prepared by SECOR international, Inc. (SECOR Report), a copy of which is provided as Appendix A-6.

As detailed in the SECOR Report (Appendix A-6), analytical results from soil samples collected from the UST excavation were below minimum laboratory detection limits for all target constituents, with the exception of trace metal constituents (arsenic, chromium, nickel, and zinc). All of the detected metal constituents were below respective California hazardous waste criteria. Soil samples collected from below the 1,000-gallon diesel-fuel UST (shown as Tank 1 on Figure 2 of the SECOR Report in Appendix A-6) were analyzed for VOCs and TPH. Results were shown as below reporting limits in Tables 1 and 2 of the SECOR Report. Based on the results, ESFD issued its 25 March 1999 Tank Closure Certification letter, and stated that "no further action" is required regarding the former USTs. A copy of the ESFD's letter is provided as Appendix A-7.

3.1.5 2017 Phase II Soil Investigation – Block 1

During a 2017 Phase II Site Investigation conducted by ERM, a total of 20 soil borings were drilled at Block 1 (Figure 2), ranging in depths of approximately 5 to 10 feet bgs. Twelve of the soil borings were advanced to total depth using a hand auger. Copies of soil boring logs are provided in Appendix B.

At eight locations, direct-push technology was utilized to obtain continuous cores of soil from approximately 5 to 10 feet bgs after reaching an approximate depth of 5 feet bgs using a hand auger. Soil samples were collected from 14 of the 20 soil borings (SB-1 through SB-7, SB-9 through SB-13, SB-19, and SB-20, shown on Figure 5). In each of the 14 soil borings drilled in 2017 (Figure 5), soil samples were collected in first soil below pavement or concrete slab. Soil samples were submitted to Calscience for chemical analysis. Soil samples were analyzed for California Title 22 metals using Title 22 Methods, TPH with carbon-chain identification using USEPA Method 8015B Modified, and VOCs using USEPA Method 8260B. Screening levels for soil are based on the following:

- Screening levels outlined in DTSC Office of Human and Ecological Risk (HERO) Note 3 (DTSC 2019b) for metals and VOCs and supplemented with USEPA RSLs Commercial/Industrial Scenario (USEPA 2019) as needed;
- LARWQCB Soil Screening Levels (SSLs) (LARWQCB 1996) for TPH; and
- San Francisco Regional Water Quality Control Board ESLs (2019) for TPH (for risk based levels, consistent with DTSC 2015)

Soil sample analytical results are summarized in Tables 2 and 3. Copies of laboratory reports are provided in Appendix C.

The 14 soil samples collected and analyzed for metals were representative of first soil directly beneath paving (asphalt, concrete) or base materials. Detected Title 22 metals in soil (refer to Table 2) are well below current Note 3 screening levels or RSLs for commercial/industrial property. The detected concentrations are also below screening levels established for selected metals by the DTSC, except for arsenic. Detected concentrations of arsenic, ranging from 0.783 mg/kg to 1.31 mg/kg, exceed the current DTSC Note 3 screening level for commercial property (0.36 mg/kg). The detected concentrations of arsenic, however, are less than typical background levels in California soils (DTSC; Chernoff et. al 2008).

As part of the 2017 Phase II investigation, ERM collected samples in the general area of the former acidic solution release described in Section 3.1.2, including SB-11 at 1 foot, SB-12 at 1 foot, and SB-13 at 1 foot (refer to Figure 4 for sample locations). As mentioned in the previous paragraph, the detected Title 22 metals are well below current DTSC Note 3 or USEPA RSLs for commercial/industrial property except for arsenic. Arsenic, however, is below the typical background level (12 mg/kg) for Southern California soils (DTSC 2008). The 2017 shallow soil data obtained by ERM, together with the deeper soil data obtained

by GTI in 1995, and Encore in 2000, show that chemical constituents in shallow soil do not appear to have been mobilized downward, demonstrating that the 1995 release of acidic solution appears to have been adequately characterized. Soils near the area of the former acidic solution release that may be potentially excavated during future development activities will be profiled and handled in accordance with a Site-specific Soil Management Plan (SMP).

Concentrations of TPH in shallow soil (Table 3) were detected in five of the designated sample locations (SB-3, SB-4, SB-6, SB-7, and SB-9 as shown on Figure 5), ranging from 12 to 120 mg/kg. At sample locations SB-3, SB-4, SB-7 and SB-9 (samples SB-3-0-1, SB-4-0-2, SB-7-0-1, and SB-9-0-1), TPH was identified as having molecular carbon (C) chains ranging from C25 to C40, indicative of heavier hydrocarbon compounds such as waste oil. At sample location SB-6, TPH (12 mg/kg) was only identified within a greater range of hydrocarbon compounds (C6 through C44). Detected concentrations of TPH are below the LARWQCB SSL of 10,000 mg/kg, which is based on the range of identified C compounds and the vertical separation between groundwater and the sample interval (20 to 150 feet). The LARWQCB SSL is a conservative value for comparing to the detected TPH values in Site soil. The SSL was established for the protection of a drinking water aquifer but the drinking-water beneficial-use designation is not applicable for groundwater below the Site. Also consistent with DTSC (2015), the detected concentrations of TPH are also compared to, and are less than the San Francisco Regional Water Quality Control Board (SFRWQCB) Environmental Screening Levels (ESL) (2019). During the 2017 investigation, soil below the sample intervals shown in Table 3 were not analyzed for TPH as no indications of the presence of TPH were indicated by field examination (refer to copies of soil boring logs in Appendix B).

As shown in the laboratory report in Appendix C, concentrations of VOCs were not detected in the shallow soil samples that were collected and analyzed from Block 1.

3.1.6 2017 Phase II Soil Investigation – Block 2

During ERM's 2017 Phase II Site Investigation, 10 soil borings were drilled at Block 2 (refer to Figure 3), ranging in depths from approximately 5 to 10 feet bgs. All of the soil boring locations were advanced to total depth using a hand auger, except for two (SBB2-9 and SBB2-10), which utilized direct-push technology to obtain a continuous core of soil from approximately 5 to 10 feet bgs after reaching an approximate depth of 5 feet bgs using a hand auger. Copies of soil boring logs for these borings are provided in Appendix D.

Soil samples were collected from 8 of the 10 soil borings (sample locations SBB2-1, SBB2-4, SBB2-5, and SBB2-9 through SBB2-13, shown on Figure 6). Soil samples were submitted to Calscience for chemical analysis. Soil samples were analyzed for California Title 22 metals using Title 22 Methods, TPH with carbon-chain identification using USEPA Method 8015B Modified, and VOCs using USEPA Method 8260B. Screening levels for soil were based on the following:

- Screening levels outlined in DTSC HERO Note 3 (DTSC 2019) for metals and VOCs supplemented as needed with USEPA RSLs Commercial/Industrial Scenario (USEPA 2019).
- LARWQCB SSLs (LARWQCB 1996) and SFRWQCB ESLs (SFRWQCB 2019) for TPH.

Soil sample analytical results are summarized in Tables 4 through 6. Copies of laboratory reports are provided in Appendix E.

Four of the 8 soil samples collected and analyzed for metals (SBB2-1-0-1, SBB2-4-0-1, SBB-2-11-0-2, and SBB2-13-1-2) were representative of first soil directly beneath paving (asphalt, concrete) or base materials. Detected Title 22 metals in soil samples analyzed from Block 2 (refer to Table 4) are well below DTSC Note 3 or RSLs for commercial/industrial property, except for arsenic. Detected concentrations of arsenic, ranging from 1.06 mg/kg to 2.61 mg/kg, exceed the established DTSC Note 3 screening level for

commercial property (0.36 mg/kg). The detected concentrations of arsenic, however, are less than typical background level (12 mg/kg) in Southern California soils (Chernoff et. al 2008).

Concentrations of TPH in shallow soil (refer to Table 5) were detected in two of the designated sample locations (SBB2-5 and SBB2-11). TPH in a soil sample from 3 to 4 feet bgs (sample ID SBB2-5-3-4) at boring SBB2-5 (near the former oil well location) was detected at 180 mg/kg. As shown on the soil boring log for boring SBB2-5 (refer to Appendix B), the headspace PID reading from the soil sample collected at 3 to 4 feet bgs was 399.9 parts per million (ppm). A headspace PID reading in soil cuttings from 5 feet bgs (total depth of the boring) was only 4.8 ppm. TPH in the sample analyzed from 3 to 4 feet bgs was identified as C19 to C40, indicative of heavier hydrocarbon compounds such as waste oil. The total concentration is well below current ESL (1,200 mg/kg) and concentrations identified within designated C compounds are below the LARWQCB SSLs of 1,000 mg/kg and 10,000 mg/kg (based on the range of identified C compounds and the estimated range of vertical separation between groundwater and the sample interval [20 to150 feet]). At sample location SBB2-11, detected TPH (12 mg/kg) is below the most conservative ESLs and SSLs (1,200 mg/kg and 500 mg/kg, respectively). During the 2017 investigation, soil below the sample intervals shown in Table 5 were not analyzed for TPH as indications of the presence of TPH were not evident by field examination (refer to copies of soil boring logs in Appendix D).

Only one of the eight soil samples collected and analyzed from Block 2 showed a detection of VOCs (refer to Table 6). PCE was detected in soil at a concentration of 21 µg/kg (well below the DTSC's commercial/industrial Note 3) in a soil sample from 3 to 4 feet bgs in boring SBB2-5 in the vicinity of the former USTs, the inactive aboveground storage tank area and the former oil well location.

3.1.7 2018 Phase II Soil Investigation – Block 1

During ERM's 2018 Phase II Site Investigation at Block 1, a membrane interface probe (MIP) was advanced, using direct-push (DP) methods prior to soil sampling activities. This was implemented (in combination with electrical conductivity and cone penetration testing to obtain lithologic data) in an attempt to screen soils to the proposed targeted depth of 80 feet bgs. The MIP was used to provide real-time vertical profile logs identifying if and where VOCs may be present in subsurface soil. Refusal generally occurred at or above 60 feet bgs due to the highly dense nature of the sediments. Hollow-stem-auger drilling technology was then used to advance soil-sampling equipment to a maximum depth of 80 feet bgs at each of the five locations (Figure 4, B1-1 through B1-5). Copies of MIP and soil boring logs generated during this investigation of Block 1 are provided in Appendix F.

At each of the borings, selected soil samples were collected based on the information gained from the interval screened by the MIP tool. Below the MIP refusal depth, soil samples were collected at approximately 5-foot intervals to the total depth of approximately 80 feet bgs. Soil samples were submitted to Calscience for chemical analysis. Soil samples were analyzed for VOCs using USEPA Method 8260B. Soil sample analytical results are summarized in Table 7. Copies of laboratory reports are provided in Appendix G.

PCE (ranging from 1.3 to 47 µg/kg) and 1,2-dichlorobenzene [DCB] (5.7 µg/kg) were the only VOCs detected in the 25 soil samples collected and analyzed. Concentrations of these constituents were below the screening levels. Current screening levels for soil[1] are based on the USEPA RSLs Commercial/Industrial Scenario for VOCs (1,2-DCB 9,300,000 µg/kg; USEPA 2019) and the DTSC HERO Note 3 (PCE 2,700 µg/kg; DTSC 2019).

In three of the four locations (B1-1, B1-2 and B1-3) PCE was detected in only one of the samples collected (B1-1 at 53 feet bgs, B1-2 at 25 feet bgs, and B1-3 at 54 feet bgs), ranging from 1.3 µg/kg to

[1] It should be noted that these screening values are based on direct contact with soils for commercial receptors, and therefore only apply to near surface (0-10 feet) soils. DTSC Note 3 values are selected preferentially, followed by RSLs.

1.9 µg/kg. At B1-5 (refer to Figure 5), concentrations of PCE were detected in each of the five soil samples collected, decreasing from 47 µg/kg at 33 feet bgs to 2.4 µg/kg at 80 feet bgs. To assess the potential threat to groundwater by residual concentrations of PCE in soil at Block 1, SSLs were calculated in accordance with the LARWQCB's May 1996 *Interim Site Assessment & Cleanup Guidebook* using lithologic information observed in boring B1-5, and estimating that groundwater occurs at a depth of approximately 100 feet bgs at the Site. As summarized in Table 8, using the current maximum contaminant level (MCL) for PCE, SSLs calculated for various depths at the Site are greater than the concentrations detected in soil samples collected from corresponding depths at the Site, indicating that residual levels of PCE in soil do not pose a continued threat to groundwater quality below the site. Furthermore, MCLs are not established for groundwater below the Site due to no designated MUN beneficial use of groundwater. A more detailed quantitative evaluation of leaching potential is presented in Section 4 below.

3.1.7.1 Solvent Pipeline

A drawing of a piping system related to the Site, including 233 Kansas Street (Block 1), 1521 Grand Avenue (Block 2), and a former facility immediately east of Block 1, was provided to ERM by Infineon during ERM's Phase I ESA (ERM 2016). The drawing depicted a 3-inch-diameter polyvinyl chloride pipeline crossing Kansas Street from the east, toward the 233 Kansas Street Building. It appears that the pipeline would have been located along the southern portion of the 233 Kansas Street Building (Figure 4), connecting to the building and/or the former waste PCE UST immediately south of the 233 Kansas Building. There is no record of a release associated with the solvent pipeline.

During ERM's 2018 Phase II investigation of Block 1, soil samples were collected in the general area of the solvent pipeline (Figure 4, borings B1-2, B1-4 and B1-5) from approximately 6 to 80 feet bgs, as summarized in Table 6. PCE was not detected in samples collected in soil boring B1-4. PCE was detected at 1.9 µg/kg in soil boring B1-2 at 25 feet bgs and not detected from the deeper samples at that location (32, 49 and 80 feet bgs). PCE was detected in soil boring B1-5, ranging from 2.4 to 47 µg/kg. The detected PCE concentrations in soil samples from B1-5 are below the DTSC Note 3 screening level (2,700 µg/kg) and the USEPA Commercial RSL (100,000 µg/kg). These results indicate that the solvent pipeline area appears to be adequately characterized.

3.1.8 2018 Phase II Soil Investigation – Block 2

Prior to soil sampling activities during ERM's 2018 Phase II Site Investigation at Block 2, the MIP was advanced in an attempt to screen soils to the proposed targeted depth of 80 feet bgs in combination with a cone penetration test to obtain lithologic data. The MIP was used to provide real-time vertical profile logs identifying if and where VOCs may be present in subsurface soil.

Hollow-stem-auger drilling technology was used to advance soil-sampling equipment to a maximum depth of 80 feet bgs at each of the eight locations (Figure 6, B2-1 through B2-8). Copies of the MIP and soil boring logs for this investigation on Block 2 are provided in Appendix H.

At each of the borings, selected soil samples were collected based on the information gained from the interval screened by the MIP tool. Below the MIP refusal depth, soil samples were collected at approximately 5-foot intervals to a total depth of approximately 80 feet bgs. Soil samples were submitted to Calscience for chemical analysis. Soil samples were analyzed for VOCs using USEPA Method 8260B. Soil sample analytical results for detected VOCs are summarized in Table 9. Copies of laboratory reports are provided as Appendix I.

PCE and trichloroethylene (TCE) were the only two VOCs detected in the 40 soil samples collected and analyzed. Concentrations of these constituents were below the screening levels. The screening levels

were based on DTSC Note 3 (2019b) and RSLs (USEPA 2019) for PCE (2,700 µg/kg and 100,000 µg/kg, respectively) and RSL (USEPA 2019) for TCE (6,000 µg/kg) based on a Commercial/Industrial Scenario.

TCE was detected in two of the eight soil borings, B2-3 and B2-6, only in the 5-foot bgs sample at concentrations of 2.1 µg/kg and 1.9 µg/kg, respectively. These concentrations are below the current USEPA Commercial RSL (6,000 µg/kg). PCE was detected in six of the eight borings, ranging from 1.1 µg/kg to 4.9 µg/kg, below the DTSC Note 3 screening level (2,700 µg/kg) and below the USEPA Commercial RSL (100,000 µg/kg). In borings B2-3 (4.9 µg/kg), B2-7 (2.3 µg/kg), and B2-8 (1.1 µg/kg), PCE was detected only in the 5-foot bgs sample. In boring B2-4, PCE was detected at 1.8 µg/kg only at a depth of 80 feet bgs. In borings B2-2 and B2-6, concentrations of PCE were detected in both the 5-foot bgs (1.3 and 3.5 µg/kg respectively) and the 80-foot bgs samples (1.7 and 2.3 µg/kg respectively), and in B2-2, PCE at 1.7 µg/kg was detected at 65 feet bgs.

To assess the potential threat to groundwater by residual concentrations of PCE in soil, SSLs were calculated in accordance with the LARWQCB's May 1996 *Interim Site Assessment & Cleanup Guidebook* using lithologic information observed in boring B2-2, and estimating that groundwater occurs at a depth of approximately 100 feet bgs at the Site. As summarized in Table 10, using the current MCL for PCE, the concentrations detected in soil samples collected from corresponding depths at the Site are below the calculated SSLs, indicating that residual levels of PCE in soil do not pose a continued threat to groundwater quality below the site. It is noted, however, that MCLs are not established for groundwater below the Site due to the absence of designated MUN beneficial use of groundwater. A more detailed quantitative evaluation of leaching potential is presented in Section 4 below.

3.1.9 2019 Subsurface Soil Investigation - Former Railroad Track Alignment – Block 2

On 5 September 2019, ERM drilled two soil borings to a depth of 2 feet along the approximate alignment of former railroad tracks in the southwest portion of Block 2 (earlier described in Section 3.1.3). The purpose of the investigation was to further assess shallow soils for the presence of heavy metals that may be associated with historical operations of the former railroad tracks. The two soil borings (B2-9 and B2-10) were drilled at the approximate locations shown on Figures 3 and 6. Copies of soil boring logs for the two borings are provided in Appendix J. Representative samples from first soil below the asphalt-paved surface were collected in borings B2-9 and B2-10 at depth intervals of approximately 0 to 6 inches below top of soil and approximately 6 to 9 inches below top of soil. The samples were submitted to Eurofins Test America and analyzed for concentrations of California Title 22 metals. Chemical results are summarized in Table 11. A copy of the laboratory report is provided in Appendix K. As summarized in Table 11, concentrations of metals in the four samples analyzed are within typical background ranges for soils of Southern California. Based on the results of this investigation, together with the investigation conducted in 1996 by GTI (summarized in Section 3.1.3), no evidence of impacts from the former railroad operations were observed.

3.2 Soil Vapor

During ERM's Site Investigations conducted in 2017 and 2018, representative soil vapor samples were collected from Block 1 and Block 2. Summaries of these activities are provided in the following subsections.

3.2.1 2017 Phase II Soil Vapor Investigation – Block 1

During ERM's 2017 Phase II Site Investigation at Block 1, soil vapor probes were installed at eight locations (Figure 7, SV-1, SV-10, and SV-14 through 1SV-21). During the backfilling of soil boreholes at these locations, a soil vapor probe was installed at a depth of 5 feet bgs.

Soil vapor probe installation was performed in accordance with the DTSC *Final Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air* and *Advisory-Active Soil Gas Investigations* (DTSC 2011 and DTSC 2016, respectively). However, it should be noted that a leak check compound was not employed during the 2017 soil vapor sampling event.

Screening levels for soil vapor samples are based on the following:

- Air screening levels from DTSC HERO Note 3 (DTSC 2019b; primary); and
- USEPA air RSLs Commercial/Industrial (USEPA 2019).

The established screening levels and RSLs were adapted to calculate soil vapor screening levels by applying default attenuation factors from DTSC Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air (Vapor Intrusion Guidance) – Final (DTSC 2011)[2]. Detected VOCs in soil vapor samples are summarized in Table 12. Copies of laboratory reports are provided in Appendix C. The concentrations of PCE and TCE in shallow soil on Block 1 are shown on Figures 8 and 9, respectively.

Analytical results for soil vapor samples indicated that PCE exceeded its screening level (2,000 micrograms per cubic meter (µg/m^3) at five of the seven sampling points on Block 1. A concentration of 76,300 µg/m^3 was detected in the soil vapor sample obtained from the 5-foot vapor probe near the former UST (sampling location SV-10 shown on Figure 8), with diminishing concentrations of approximately one order of magnitude within approximately 40 to 60 feet north, east and south of the sample location SV-10. At four of the five sampling locations below the floor of the 233 Kansas Street Building, PCE concentrations in soil vapor at a depth of 5 feet bgs ranged from 3,570 µg/m^3 to 9,020 µg/m^3.

3.2.2 2017 Phase II Soil Vapor Investigation – Block 2

During ERM's 2017 Phase II Site Investigation at Block 2, soil vapor probes were installed at seven locations (Figure 10, SVB2-1, SVB2-3, SVB2-5, and SVB2-8 through SVB2-11). During the backfilling of soil boreholes at these locations, a soil vapor probe was installed at a depth of 5 feet bgs, except at location SVB2-5 where the probe was installed at 4.5 feet bgs.

Soil vapor probe installation was performed in accordance with the DTSC *Final Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air* and *Advisory-Active Soil Gas Investigations* (DTSC 2011; DTSC 2016). However, it should be noted that a leak check compound was not employed during the 2017 soil vapor sampling events.

Screening levels[2] for soil vapor samples were based on the following:

- Air screening levels from DTSC HERO Note 3 (DTSC 2019b)(primary); and
- USEPA air RSLs Commercial/Industrial (USEPA 2019).

The established screening levels and RSLs were adapted to calculate soil vapor screening levels by applying default attenuation factors from DTSC Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air (Vapor Intrusion Guidance) – Final (DTSC 2011). Detected VOCs in soil vapor samples are summarized in Table 13. Copies of laboratory reports are provided in Appendix E. The distribution of shallow PCE and TCE in soil vapor on Block 2 is depicted on Figures 11 and 12, respectively.

[2] While DTSC Note 4 (2019) also suggests for the first time considering the USEPA (2015) attenuation factor (AF) of 0.03, this section presents the screening associated with pre-2019 data and reproduces screening presented in previous reports and associated with guidance recommendations at the time (2015 Note 4 did not contain this recommendation). As a screening risk assessment conducted and provided in the Appendices considers the USEPA 2015 attenuation factor, the screening narrative utilized AFs based on DTSC 2011 guidance. For completeness, associated tables include screening levels based on an AF of 0.03.

Analytical results for soil vapor samples collected in 2017 from Block 2 indicate that PCE and TCE exceed screening levels (refer to Table 13). PCE exceeded its screening level at five of the seven sampling points, ranging from 10,300 µg/m^3 to 31,300 µg/m^3. TCE exceeded its screening level (3,000 µg/m^3) at the same five locations, ranging from 5,430 µg/m^3 to 17,310 µg/m^3. Elevated concentrations of PCE and TCE were also detected in the two soil vapor samples from below the floor of the 330 Kansas Street Building (Figures 11 and 12, respectively, sample locations SVB2-8 and SVB2-11).

3.2.3 2018 Phase II Soil Vapor Investigation – Block 1

During ERM's 2018 Phase II Site Investigation at Block 1, upon completion of soil sampling and during backfilling activities, borings (B1-1 through B1-5, Figure 7) were converted to multi-depth soil vapor monitoring points by installing nested soil vapor probes at varying depths as presented in Table 14. Soil vapor probes (each measuring 6 inches in length) were installed at depths where MIP or photoionization detector screening indicated that VOCs may be present in subsurface soil.

Soil vapor sample analytical results for the samples collected in 2018 are summarized in Table 14. Copies of laboratory reports are provided in Appendix G.

Screening levels for soil vapor samples, as shown in Table 14, are based on DTSC's 2011 and 2019 HERO Note 3, and the April 2019 USEPA RSLs Commercial/Industrial Scenario[2]. PCE and TCE were detected in all soil vapor samples, generally at concentrations exceeding the screening levels (2,000 µg/m^3 and 3,000 µg/m^3, respectively). TCE concentrations exceeded a screening level of 3,000 µg/m^3 in 18 of the 20 samples, ranging from 3,900 µg/m^3 to 82,000 µg/m^3. PCE concentrations exceeded screening levels in all samples, ranging from 20,000 µg/m^3 to 690,000 µg/m^3. PCE concentrations in soil vapor at depths of approximately 20 feet, 50 feet, and 80 feet bgs are depicted on Figures 13, 14, and 15, respectively.

Acetone, trichlorofluoromethane, 1,1-dichloroethene (DCE), 1,1,1-trichloroethane, and benzene were detected in only sample SV-B1-1-80 at concentrations below the screening levels.

1,1,2-Trichlorotrifluoroethane was detected in all soil vapor samples at concentrations below its screening level.

Cis-1,2-DCE and chloroform were detected in several soil vapor samples. Chloroform in only one soil sample (550 µg/m^3 in SV-B1-5-80) exceeded its screening level of 530 µg/m^3.

3.2.4 2018 Phase II Soil Vapor Investigation – Block 2

During ERM's 2018 Phase II Site Investigation at Block 2, upon completion of soil sampling and during backfilling activities, borings (B2-1 through B2-8) were converted to multi-depth soil vapor monitoring points by installing nested soil vapor probes at varying depths as presented in Table 15. Soil vapor probes (each measuring 6 inches in length) were installed at depths where MIP or photoionization detector screening indicated that VOCs may be present in subsurface soil.

Soil vapor sample analytical results are summarized in Table 15. Copies of laboratory reports are provided in Appendix I.

Screening levels for soil vapor samples shown in Table 15 are based on DTSCs 2011 HERO Note 3 (2019b), and the 2019 USEPA RSLs Commercial/Industrial Scenario[2].

PCE and TCE were detected in all soil vapor samples at concentrations above the screening levels (2,000 µg/m^3 and 3,000 µg/m^3, respectively), with the exception of SV-B2-5-15 where TCE was just below the screening level. TCE concentrations exceeded its screening level of 3,000 µg/m^3 in 31 of the 32 samples, ranging from 4,300 µg/m^3 to 52,000 µg/m^3. PCE concentrations exceeded its screening level of 2,000 µg/m^3 in all 32 samples, ranging from 8,100 µg/m^3 to 73,000 µg/m^3. PCE concentrations in soil

vapor at depths of approximately 20 feet, 50 feet, and 80 feet bgs are depicted in Figures 16, 17, and 18, respectively.

Acetone, trichlorofluoromethane, 1,1-DCE, 1,1,2-trichlorotrifluoroethane, cis-1,2-DCE, 1,1,1-trichloroethane, chloroform, and benzene were detected in all of the borings at concentrations below screening levels.

3.3 2017 Indoor Air Quality

During ERM's 2017 Phase II Site Investigation activities, indoor air samples were collected from existing structures at the Site. Results are summarized in the following subsections.

3.3.1 Block 1

On 13 March 2017, during ERM's 2017 Phase II Site Investigation at Block 1, representative samples of indoor air were collected at six locations inside of the 233 Kansas Street Building (Sample locations IA-13 through IA-18, shown on Figure 19). A duplicate indoor air sample was collected at sample location 13. Samples were collected in 6-liter-capacity Summa® canisters over a time period of approximately 8 hours. Indoor air samples were submitted under chain-of-custody documentation to Calscience for chemical analysis. Each indoor air sample was analyzed for VOCs using USEPA Method TO-15, and for methane using ASTM International (ASTM) Method D-1946.

Analytical results of VOCs for indoor air samples are summarized in Table 16. A copy of the laboratory report is provided in Appendix B.

Screening levels for indoor air sample results, as shown in Table 16, are based on DTSC HERO Note 3 (DTSC 2019b; primary) and USEPA RSLs Residential and Commercial/Industrial (USEPA 2019).

None of the detected VOCs exceeded above-mentioned residential or commercial screening levels.

Methane was not detected in any of the indoor air samples at concentrations at or above standard laboratory reporting limits.

3.3.2 Block 2

On 13 March 2017, during ERM's 2017 Phase II Site Investigation at Block 2, representative samples of indoor air were collected at four locations on Block 2. Two samples were collected inside of the 1521 Grand Avenue Building (sample locations IA-1 and IA-3), and two samples were collected inside of the 330 Kansas Street Building (sample locations IA-8 and IA-11), as shown on Figure 20. A duplicate indoor air sample was collected at sample location IA-1 in the 1521 Grand Avenue Building. Samples were collected in 6-liter-capacity Summa® canisters over a time period of approximately 8 hours. Indoor air samples were submitted under chain-of-custody documentation to Calscience for chemical analysis. Each indoor air sample was analyzed for VOCs using USEPA Method TO-15 and for methane using ASTM Method D-1946.

Analytical results of VOCs for indoor air samples are summarized in Table 17. A copy of the laboratory report is provided in Appendix E.

Screening levels for indoor air sample results, shown in Table 16, are based on DTSC HERO Note 3 (DTSC 2019b; primary) and USEPA RSLs Commercial/Industrial (USEPA 2019).

Only benzene, at a concentration of 1.7 µg/m^3 in two of the four samples (IA-01 and IA-03), exceeded its commercial screening level of 0.42 µg/m^3. Based on records of ambient air concentrations measured by the California Air Resources Board ([CARB] 2019), the detected benzene is within the range of typical

concentrations of benzene in ambient air for the Site. Likewise, other detected VOCs in the indoor air samples are consistent with ambient urban background concentrations.

Methane was not detected in any of the indoor air samples at concentrations at or above standard laboratory reporting limits.

3.4 Adjoining Properties Assessment

To put into perspective the findings from the Block 1 and Block 2 investigations, ERM acquired available environmental investigation data from multiple adjoining properties in the neighboring vicinity. This evaluation included the development of two regional cross sections and four depth-horizon maps based on a compilation of soil vapor vertical-profiling data collected from various properties in the area of the Site The results of that analysis are included in Figures 21 through 27.

In areas away from former known release areas, VOC concentrations in soil vapor generally increase with depth, particularly in proximity to the groundwater table (approximately 100 feet bgs). This indicates that contaminated groundwater in the region is likely a primary source of VOC vapor contamination in the deeper portion of the vadose zone. Where historical releases have been documented, VOC vapor concentrations are elevated in shallow soils and decrease with depth.

In the observed potential source areas adjacent to Blocks 1 and 2, VOC vapor concentrations vary by more than three orders of magnitude (less than 1,000 µg/m^3 to greater than 1,000,000 µg/m^3). The primary sources of PCE and associated VOCs in the subsurface on neighboring properties were identified as follows:

- A known source of PCE and associated VOCs is observed at the property immediately upgradient (east) of Block 1. PCE in soil vapor was detected at concentrations of up to 1,597,000 µg/m^3 at 5 feet bgs, 480,000 µg/m^3 at 50 feet bgs, and 360,000 µg/m^3 at 70 feet bgs. In 2012, groundwater samples were collected by HydroPunch technology in the suspected source area (GW-2) and at the downgradient (western) edge of the property (GW-1). PCE concentrations in groundwater samples at those locations were reported at 692 micrograms per liter (µg/l) and 782 µg/l, respectively.
- A known source of PCE and associated VOCs is observed at 1415 and 1315 E. Grand Avenue (former Olson property) immediately north of Block 1 and immediately west of Block 2 (Figure 21). PCE in soil vapor was detected at concentrations ranging from 2,500,000 µg/m^3 at 10 feet bgs to 3,300,000 µg/m^3 at 40 feet bgs. No samples were obtained below 40 feet bgs and no monitoring wells were installed. Subsequent resampling for soil vapor at two locations at the former Olson property indicated somewhat lower results, but still significantly higher than at adjoining properties, including Block 1 and Block 2. The size of the source area observed on the former Olson property, as shown on cross section A-A' (Figure22), and on the soil vapor contour maps for Zones 1 through 4 (Figures 24 through 27), can only be estimated based on the limited soil vapor sampling (both laterally and vertically) that was conducted. Given that the PCE vapor concentrations are above 1,000,000 µg/m^3 at 40 feet bgs, and are greater in comparison to other known sources to groundwater contamination in the area, it is highly likely that the source on the former Olson property has impacted groundwater beneath and in the vicinity of that property.
- A known source of PCE and associated VOCs is observed at 1330 E. Franklin Avenue, southwest of Block 1. PCE vapors in soil were detected at concentrations ranging from 316,000 µg/m^3 at 5 feet bgs to 529,000 µg/m^3 at 40 feet bgs, and 380,000 µg/m^3 at 60 feet bgs. In 2018, monitoring wells were installed near the source area (MW-1 and MW-2) and PCE concentrations detected in groundwater samples from those wells ranged from 120 µg/l to 110 µg/l, respectively. An additional well (MW-7) was installed north of that property in California Street, west of Block 1. PCE concentrations detected in groundwater samples from that well were 400 µg/l. The data are

consistent with TCE concentrations reported in groundwater from property upgradient and immediately east of Block 1 sources.

Based on Cross Section A-A' (Figure 22) and Cross Section B-B' (Figure 23), four depth-zone intervals were selected to depict the lateral distribution of PCE in soil vapor below Block 1, Block 2, and below the adjacent properties (Figures 24 through 27). PCE vapor profile data were adjusted for surface elevation changes on Cross Sections A-A' and B-B' to maintain consistent depth intervals. The four depth intervals, from shallow to deep, include elevations of 95 feet to 110 feet above mean seal level (amsl), referred to as Zone 1 (Figure 24), 80 feet to 95 feet amsl, Zone 2 (Figure 25), 50 feet to 70 feet amsl, Zone 3 (Figure 26), and 30 feet to 50 feet amsl, Zone 4 (Figure 27). Due to the high variability of vapor concentrations (more than three orders of magnitude), PCE vapor concentrations were contoured for each interval using a logarithmic scale to highlight areas with maximum impact.

Based on the four depth-interval maps (Figures 24 through 27), the following observations are provided:

- From Figure 24, four primary source areas can be identified in the shallow, Zone 1 interval, including the former Olson property north of Block 1, property upgradient and immediately east of Block 1, the 1330 E. Franklin Avenue property southwest of Block 1, and the former PCE release area at Block 1.
- In the upper-intermediate depth interval, Zone 2 (Figure 25), the four primary source areas remain evident, although the source at Block 1 is relatively diminished compared to the other three properties where PCE vapor concentrations remain near or above 500,000 µg/m^3.
- In the lower intermediate depth interval, Zone 3 (Figure 26), the sources at the former Olson property (based on extrapolation from Cross Sections A-A' and B-B'), and at the property immediately east of Block 1 are still evident. The sources at Block 1 and at the 1330 Franklin Avenue property are less obvious and tend to blend in with regional concentrations for that depth interval.
- In the deepest interval, Zone 4 (Figure 27), the only residual elevated PCE vapor concentrations observed are on upgradient property immediately east of Block 1 and possibly the former Olson property (based on extrapolation from Cross Sections A-A' and B-B'). The other sources are not distinguishable from regional concentrations at that depth interval, which appear to be influenced by off gassing from groundwater contamination.

4. GROUNDWATER EVALUATION

Based on surface topography and a review of reports associated with subsurface investigations of nearby properties, groundwater flow in the vicinity of the Site is generally to the west/southwest. According to the State Water Resources Control Board's online GeoTracker database, and information obtained from the DTSC's Chatsworth office as part of a file review, groundwater was reported at approximately 100 to 110 feet bgs during a groundwater investigation conducted in September 2016 at an adjacent property, southwest of Block 1 (1330 E. Franklin Avenue property).

Seawater intrusion and off-Site hydrocarbon sources affect regional groundwater quality in the area of the Site. The West Coast Basin Barrier project, designed to control seawater intrusion by the creation of an artificial gradient using water injection, is located to the east of the Site (nearest injection wells range from approximately 300 feet east of Block 2 to approximately 700 feet east of Block 1). Due to seawater intrusion and local groundwater quality issues, groundwater in the vicinity of the Site is not designated for drinking water end-use by the LARWQCB.

As summarized in Section 3.1.1, environmental remediation was previously conducted on Block 1 between 1994 and 1997 to address VOCs in soil vapor near the former UST. Although residual levels of PCE remained in soil at concentrations consistent with those found during ERM's more recent Phase II investigations at Block 1 and Block 2, the LARWQCB concluded that groundwater had not been impacted and issued a No Further Action letter, a copy of which is provided as Appendix A-2.

In a 2006 Revised & Updated Health Risk Assessment (HRA) for adjacent property at 1415 East Grand Avenue (immediately west of Block 2), soil vapor was reported with PCE and TCE at concentrations significantly greater than any detected below Block 1 or Block 2, as summarized in Section 3.2. A copy of the 2006 HRA for the adjacent property at 1415 East Grand Avenue is provided as Appendix A-8. Concentrations of PCE below the 1415 East Grand Avenue property were reported in the HRA as ranging from 1,510 µg/m^3 to 4,200,000 µg/m^3 (the higher concentration was in a sample collected at 40 feet bgs). By comparison, concentrations of PCE in soil vapor at the Site were found to range from 80.7 µg/m^3 to 690,000 µg/m^3 (the higher concentration was detected in a sample from 22 feet bgs on Block 1, at the location of the former PCE UST). Concentrations of PCE in soil vapor samples from depths of 40 feet bgs or greater at the Site were found to range from 17,000 µg/m^3 to a maximum of 160,000 µg/m^3. Based on the results of the HRA and considerations by the LARWQCB that the "case was not considered a threat to groundwater", the property was developed for residential end use by incorporating a vapor barrier.

Related to an adjacent property immediately east of Block 1, the County of Los Angeles Fire Department (LAFD) issued a No Further Action in its 2 October 2012 letter to the Regional Water Quality Control Board. The LAFD letter stated that concentrations of PCE in the shallow soil vapor (5 feet bgs) ranged from 180 µg/m^3 to 4,300 µg/m^3 and that concentrations of PCE in deeper soils ranged from 19,000 to 480,000 µg/m^3. The No Further Action letter (Appendix A-9) also stated that the California Environmental Protection Agency's Office of Environmental Health Hazard Assessment reviewed a Vapor Intrusion HRA and issued an 18 September 2012 memorandum concurring that the VOCs below the parcel did not pose unacceptable health risks to future commercial/industrial occupants. The parcel was developed in accordance with a requirement for a vapor barrier by the City of El Segundo. Furthermore, as stated in the No Further Action letter, a deed restriction was recorded with the Los Angeles County Recorder, restricting the property to commercial/industrial use.

As summarized above, substantially higher concentrations of VOCs have been reported in soil vapor on adjacent properties compared to those detected at Block 1 and Block 2. Publically available information on regional groundwater shows concentrations of dissolved PCE, ranging from 400 µg/l, west (downgradient) of the Site (2018 sample from monitoring well MW-7, associated with ongoing investigation and remediation activities at the 1330 E. Franklin Avenue property), to 782 µg/l, from a

2012 HydroPunch sample collected on property immediately east of Block 1. There is also a known source of PCE and associated VOCs further downgradient (approximately 700 feet west) of Block 1, at 200 Nevada Street, where a former dry cleaner was located (Figure 28). In 2014, groundwater samples were collected and PCE concentrations were detected at up to 470 µg/l.

Based on the relative concentrations of PCE in soil vapor observed at depth in the known source area, and the declining PCE in groundwater between upgradient and downgradient locations, the likelihood that the Block 1 is contributing to groundwater contamination is low.

Based on the relatively low vapor concentrations observed below Block 2 (refer to Figure 22, Cross Section A-A'), there does not appear to be a source of PCE or associated VOCs of any significance at Block 2.

To further assess the potential impact to groundwater from the former source area at Block 1, ERM compared PCE-to-TCE ratios in groundwater samples collected from both upgradient and downgradient locations. The results of that analysis are shown on Figure 28. Once released to the environment, PCE can degrade through natural dechlorination processes into TCE, and then to other daughter products such as 1,1-DCE, cis 1,2-DCE, and chloroform. Many of those daughter products have been observed in soil and groundwater sampling results confirming that degradation processes are active in the subsurface (refer to Table 12 for detected VOCs at Block 1). As a result, the ratio of PCE to TCE in groundwater samples should decrease with distance from the source area as PCE degrades into TCE. If the plume encounters a new source of PCE to groundwater, the PCE/TCE ratio should rebound due to added PCE mass introduced into the aquifer.

Figure 28 shows that for the two groundwater sampling locations (GW-1 and GW-2) on property located upgradient and immediately east of Block 1, the PCE/TCE ratio ranges from 3.2 in the source area to 2.5 at the downgradient (western) edge of the property. At MW-7, further downgradient and west of Block 1, the ratio drops to 1.8, suggesting that no additional PCE is being added to groundwater from the former source area at Block 1. At the known source area on Nevada Street, further west and downgradient from MW-7, the ratio has rebounded to 3.2. In addition, in the source area southwest of Block 1, the ratio increases to 2.97 at MW-2, and then to 7.05 at MW-1. The lack of an increase in the PCE/TCE ratio immediately downgradient of the former PCE release at Block 1 provides an additional line of evidence that the former PCE source on Block 1 is not continuing to impact groundwater.

Based on the discussion above, ERM believes that the Site is not contributing to further degradation of groundwater below the Site. To support this opinion, as detailed below, ERM has applied data from its Site investigations to a vadose zone and groundwater mixing cell computer model (VLEACH) designed to predict whether residual soil contaminants could pose a continued threat to groundwater quality conditions.

4.1 VLEACH Model

A conservative evaluation was conducted to assess the potential for contaminants of concern (COCs) in soil to migrate to groundwater. Specifically, this section evaluates the degree to which residual chemicals in the vadose zone might migrate to groundwater in the future and impact groundwater quality at concentrations greater than those observed upgradient as part of a regional groundwater plume not associated with historical Site use. The process used for evaluating potential vadose zone migration and potential future groundwater concentrations is presented below.

As discussed in the 1 May 2019 meeting with DTSC, VLEACH modeling was conducted to conservatively estimate the migration potential through the vadose zone to groundwater. VLEACH is a one-dimensional finite difference model that was developed by USEPA to simulate the leaching of an organic contaminant through the vadose zone (USEPA 2007). VLEACH is designed to simulate the movement of an organic

contaminant within three phases: (1) as a solute (in water), (2) vapor phase, and (3) as an adsorbed compound in the solid phase. Equilibration between the phases occurs according to distribution coefficients defined by the user. In particular, VLEACH simulates vertical transport by advection in the liquid phase and by gaseous diffusion in the vapor phase. During each run, VLEACH simulates leaching in a number of distinct, user-defined polygons. Each polygon is divided into discrete-depth intervals from the ground surface to groundwater. The modeling platform defined by VLEACH requires that soil properties and moisture profiles through the simulated soil column are assumed to be homogenous.

As discussed and agreed to in the 21 August 2019 meeting with DTSC, an iterative tiered evaluation was conducted to bound potential estimates of future contributions to groundwater beginning with conservative conditions and progressing to more site-specific evaluations.

4.1.1 Tier 1 VLEACH Evaluation

The Tier 1 VLEACH analysis is the most conservative set of model runs. Soil concentrations are based on the maximum detected concentrations of each evaluated chemical within each block, as well as conservative, generic site conditions in the modeling environment. It should be noted that the VLEACH model is also conservative in that it will predict mass reaching groundwater if there is any residual mass in soil accompanied by any amount of infiltration of water as recharge. Anisotropy in soil or other site conditions that could inhibit or prevent infiltration from reaching groundwater are not considered.

4.1.1.1 Soil Source Input Concentrations

Soil concentration inputs were developed based on the observed concentrations of each COC within the defined soil depth profiles. Soil matrix as well as soil vapor samples have been collected from both Block 1 and Block 2 evaluation areas. Soil matrix samples collected at the Site have not observed lateral or vertically extensive concentrations of VOCs, nor concentrations that are of concern as compared to DTSC Note 3 [2019b] or USEPA RSL [2019] commercial values. However, soil vapor concentrations in the thousands of µg/m^3 have been observed in both near surface (5 feet bgs) and deeper soil vapor (greater than 5 feet bgs). Therefore, this evaluation utilized both sets of data in deriving estimates of soil concentrations for use in the vadose zone evaluation.

Where both soil and soil vapor concentrations were observed for a given COC and depth interval, soil equilibrium concentration conversion factors were estimated using the following equation (DTSC 2011):

$$Csv\ (g/cm^3) = Cs \times H' \times \rho s / (\Theta w + Foc \times Koc \times \rho s + \Theta a \times H')$$

Where:

Csv	=	Concentration in soil vapor (grams per cubic centimeter [g/cm^3])
Cs	=	Concentration in soil (grams per gram)
Foc	=	Fraction of organic carbon (unitless)
Koc	=	Organic carbon partitioning coefficient ([g/cm^3])
Θw	=	Volumetric water content of soils (unitless)
Θa	=	Volumetric air content of soils (unitless)
H'	=	Henry's law constant (unitless)
ρs	=	Soil bulk density (g/cm^3)

Chemical properties (Koc, H') were obtained from available USEPA sources (USEPA 2019). For the purposes of estimating equilibrium soil concentrations, conservative DTSC (2011) default soil parameter values for bulk density, volumetric water, soil content, and fraction of organic carbon were used (low water content and Foc increase estimated soil matrix concentrations). The soil concentration estimates (conversion factors from µg/m^3 to µg/kg) are provided in Table 18.

Conversion factors were then applied to soil vapor concentrations measurements for each Block to estimate soil matrix concentrations. These estimated soil matrix concentrations are presented in Tables 19 and 20. Many of the estimated soil concentrations were less than 1 µg/kg to 5 µg/kg, a typical range of detection limits for VOCs. To reduce the modeling effort to chemicals with the greatest source strength and thus opportunity to reach the saturated zone, chemicals with all measured and estimated soil concentrations less than 2 µg/kg were eliminated from further vadose zone evaluation. In addition, acetone was only detected in a single soil vapor sample and in none of the soil matrix samples in Block 1. 1,4-dioxane and 1,2-DCB were detected in only a single soil sample in Block 1. Therefore, acetone, 1,4-dioxane, and 1,2-DCB were not evaluated further for Block 1. The chemicals selected for further quantitative vadose zone evaluation included:

- Block 1: cis-1,2-DCE, PCE, and TCE; and
- Block 2: Acetone, PCE, and TCE.

For this subset of chemicals, modeling source concentrations were developed by taking the maximum of the measured and estimated soil matrix concentrations from each depth interval. For example, in Block 1 the maximum estimated soil matrix concentration of PCE at 5 feet bgs was 68 µg/kg, and PCE was not detected in soil samples collected from this depth interval. Therefore, for the Block 1 VLEACH soil input for 0- to 5-foot-depth interval, the estimated concentration of 68 µg/kg was used.

Where a chemical concentration could not be estimated for a given depth interval (not detected in both soil and soil vapor samples) but detected or estimated in a sample in the depth interval above or below that sample, the nearest estimated or measured sample result was used. For example, in Block 1 cis-1,2-DCE was not detected in soil or soil vapor from 5 to 10 or 10 to 20 feet bgs, but was detected/estimated in 0 to 5 and 20 to 30 bgs results. Therefore, the 0 to 5 estimated result was used for the 5- to 10-foot-depth interval, and the 20 to 30 estimated result was used for the 10- to 20-foot-depth interval.

Developed VLEACH soil modeling concentration inputs are presented in Tables 19 and 20.

4.1.1.2 Source Area Soil Property Inputs

Soil property inputs (bulk density, porosity, moisture) are based on VLEACH default values for sand, and fraction organic carbon was based on DTSC 2011 defaults. This combination of default parameters was anticipated to provide a conservative estimate of potential migration through the unsaturated zone. Depth to groundwater (approximately 100 feet bgs) is based on observations from adjacent properties. Evaluation area dimensions for Block 1 and Block 2 were very rough and conservative approximations, based on general appraisal of the areas where soil and soil vapor concentrations are observed. Initial conservative average annual recharge/infiltration rate (1.2 inches per year) was based on the assumption of 10 percent of total annual precipitation (12 inches per year). This appears to be generally consistent with average water balance for the two months with a positive monthly water balance (precipitation less average monthly evapotranspiration), as indicated in Table 21. This input, however, would not account for surface area hardscape coverage that would impede or preclude infiltration).

4.1.1.3 Saturated Zone Dilution

The following USEPA (1996) equation was used for estimating the Tier 1 dilution factor (dilution of leachate as it enters the saturated zone)[3]:

$$DF = 1 + (Kid/IL)$$

[3] Initial Tier 1 runs were conducted in VLEACH model as contained in the WHI UnSatSuite (2003). Waterloo Hydrogeologic. September. The results from these runs are provided as a soil water concentration in terms of µg/L; therefore, a simple dilution factor was utilized to estimate final concentration in the saturated zone.

where:

DF	=	Dilution factor
K	=	Hydraulic conductivity
i	=	Hydraulic gradient
d	=	Mixing zone thickness
I	=	Infiltration rate (assumed 10 percent of annual rainfall)
L	=	Length of source parallel to groundwater flow

The values used are presented above and in Table 22. Site-specific values are not currently available for saturated zone parameters; the values selected are based on conservative regional (proximal) estimates based on published and regional water board-approved site analyses at Los Angeles International Airport[4].

An infiltration rate was assumed at 10 percent of the annual rainfall. Under current and future anticipated conditions (competent concrete covering the area, evapotranspiration), this is considered to be an overly conservative set of assumptions that likely overestimates migration potential.

4.1.1.4 Tier 1a VLEACH Results

Based on the input presented above, simulations were conducted to estimate the leachate concentrations present in soils directly above the water table.

The maximum estimated leachate concentrations predicted above the water table over the evaluation period are presented in Table 23. A dilution factor (discussed above, provided in Table 22) was applied to these simulated results in order to estimate a potential groundwater concentration associated with the estimated leachate concentrations.

Based on this conservative modeling scenario, the maximum potential concentrations of PCE and TCE in groundwater, resulting from secondary sources in soil, are predicted to be 13 µg/l and 17 µg/l, respectively for Block 1, and 8 µg/l and 6 µg/l, respectively for Block 2. By comparison, these results are at least an order of magnitude less than the documented PCE and TCE concentrations currently present in groundwater resulting from neighboring sites. A summary of the maximum predicted groundwater concentration for each COC investigated using VLEACH is provided in Table 23.

While maximum estimated saturated zone model results under this conservative scenario are predicted to exceed MCLs, the aquifer beneath the Site is not currently designated as a drinking water aquifer due to the presence of a regional groundwater plume unrelated to historical operations at this Site.

Because the Tier 1a results (single polygon for each area and maximum detected concentrations) exceeded MCL, additional refinement of the analysis was conducted.

4.1.1.5 Tier 1b VLEACH

A simple refinement of Tier 1 VLEACH modeling was conducted. The modeling is sensitive to infiltration rate, and as described in section 4.1.1.2, infiltration rate was conservatively set to 10 percent of total precipitation (or total positive applied precipitation for the two months where precipitation exceeded evapotranspiration), without consideration for surface area hardscape coverage that would impede or preclude infiltration. Therefore, further refinement of modeling was conducted.

[4] https://geotracker.waterboards.ca.gov/profile_report?global_id=SL184121395

For Tier 1b, the assumed infiltration was reduced to account for the presence of hardscape. As evident in Figures 2 and 3, current Site layout has nominal area not covered with hardscape. As reported to ERM, future development also will have nominal uncovered space. Based on the conceptual development (discussed in Section 7), it is assumed/estimated that up to 10 percent of the site may include uncovered area; therefore, assumed infiltration rate was further reduced to include 10 percent of the net positive precipitation. Conservative but refined VLEACH input parameters are included in Tables 24 and 25. Results of the refined Tier 1b (single source input polygon for each block) are presented in Table 26.

Based on this conservative modeling scenario, the maximum potential concentrations of PCE and TCE in groundwater, resulting from secondary sources in soil, are predicted to be 1.4 µg/l and 1.8 µg/l, respectively for Block 1, and 0.8 µg/l and 0.7 µg/l, respectively for Block 2. These estimates are less than the MCLs for both chemicals.

4.1.2 Tier 2 VLEACH Evaluation

Further analysis of the Tier 1 VLEACH was conducted to bind the results with more reasonable refinements of input concentrations. Additional source refinement was conducted by defining source input polygons for each Block, using a Theissen polygon procedure[5]. For each polygon (see Figure 29), the same procedure for surrogate and substitution as described in Section 4.1.1.1 was used to define profiled soil input concentrations. These source input polygons are provided in Table 27. VLEACH inputs for Tier 2 are provided in Table 28. The results of the Tier 2 VLEACH modeling[6] are provided in Table 29.

Based on this conservative modeling scenario, the maximum potential concentrations of PCE and TCE in groundwater, resulting from secondary sources in soil, are predicted to be 0.87 µg/l and 1.53 µg/l, respectively for Block 1, and 0.38 µg/l and 0.44 µg/l, respectively for Block 2. These estimates are less than the MCLs for both chemicals.

While USEPA's highly-conservative VLEACH model does indicate that some mass will reach groundwater (and always will if both mass and infiltrating water are present), the results of the Tier 1b and Tier 2 VLEACH modeling estimated that resulting contaminant concentrations in groundwater would be below drinking water standards (MCLs) for all COCs analyzed.

[5] This procedure draws midpoints between each of the adjacent data points (in this case profiled soil vapor samples) and then drawing the polygons so the boundaries pass through these midpoints.

[6] UnsatSuite (2003) allows definition of only one source polygon. For the multiple polygon scenario, USEPA Windows Graphical User Interface (2007) VLEACH was used. The same code is used in both. Output for the WGUI is in terms of g/yr mass flux, whereas WHI Unsat Suite provides a leachate concentration. For this purpose, the WGUI results are combined with a simple saturated zone dilution calculation.

5. CONCEPTUAL SITE MODEL

A Conceptual Site Model (CSM) is used in assessing risks by identifying potential sources and COCs, characterizing impacted media and migration pathways, and defining potential receptors and exposure pathways. ERM prepared this abbreviated CSM to establish the basis for developing a RAP, if necessary. CSMs are typically standalone documents that include summaries of historical information, a detailed site description (including lithologic and hydrologic details), and a detailed characterization of contaminant sources. This information has already been provided in Sections 1 through 4 of this report and, for the sake of brevity, is not repeated in this section of the Report. For the purpose of this Report, the CSM will focus on a discussion of potential secondary sources, migration pathways, and potential receptors. Estimates of contaminant mass in soil and soil vapor have been integrated with the known geologic framework to understand and evaluate potential migration and exposure routes. The CSM will further support our overall site assessment and the need to further address impacts based on regulatory requirements, commercial risk, and stakeholder liability/management drivers.

Secondary sources to be considered include soil contamination and soil vapor detected within the vadose zone, as characterized by previous Site investigations, and groundwater. Secondary release mechanisms include infiltration/percolation of residual mass to groundwater and volatile emissions. The migration pathways to be considered include shallow soil, outdoor air, indoor air, and groundwater. Exposure routes include ingestion, inhalation, and dermal contact. Figure L-1 in Appendix L outlines the CSM developed for the Site.

5.1 Local Site Geology and Hydrogeology

As discussed in Section 2.3.1, Geology, the Site is underlain by Pleistocene stable dune and recent eolian sand deposits. Based on soil borings and MIP/electrical conductivity data obtained using the DP method, near-surface sediments at Block 1 and Block 2 consist primarily of sands and silty sands to a depth of at least 80 feet. An increase in fines is generally observed between 20 feet and 30 feet bgs at Block 1 and between 8 feet and 20 feet bgs at Block 2.

Based on data available for neighboring facilities in close proximity to the Site, groundwater occurs at or below approximately 100 to 110 feet bgs within an unconfined alluvial aquifer that is underlain by the Bellflower aquitard. Deeper water bearing aquifers include (from upper to lower) the Gage Aquifer and the Silverado Aquifer where water is artificially injected as part of the West Coast Basin Barrier project. The unconfined alluvial aquifer has been degraded locally by historic industrial activities and is no longer designated for MUN end uses, but remains a potential source for industrial and agricultural end uses. Groundwater gradients in the shallow unconfined aquifer and in the deeper aquifers is from east to west toward the Pacific Ocean, primarily resulting from the West Coast Basin Barrier project and local sources of recharge to the unconfined aquifer.

5.2 Secondary Sources and Release Mechanisms

Section 3 of this report identifies areas of concern at Block 1 and Block 2 that represent primary sources of contaminant releases and provides details of Site investigation activities associated with those areas. Based on those Site investigation activities, the current distribution of contaminant mass in the subsurface at each Site is fairly well documented. Secondary sources are those areas where residual contaminant mass that resulted from releases at the primary source currently exist that may provide additional risk of migration and exposure over time. For both Block 1 and Block 2, the secondary source is residual soil contamination and soil vapor contamination in the vadose zone and, potentially, groundwater.

5.3 Factors Related to Groundwater Pathways

As discussed, groundwater in the shallow aquifer is at approximately 100 feet bgs and is not designated for MUN end use, and therefore there is no pathway for the ingestion exposure route. Groundwater quality beneath the Site has not been characterized, although locally, groundwater is known to be degraded by contaminants similar to those observed at the Site, both upgradient and downgradient of the Site. In discussions with DTSC, it was determined that secondary sources at the Site should be further investigated to determine whether residual contaminant mass in soils and soil vapor could potentially migrate to groundwater and further degrade existing water quality in the region. Section 4 of this report summarizes the results of vadose zone modeling using USEPA's VLEACH model approach. Applying conservative assumptions (worst-case scenario), the model results show the maximum potential impact to groundwater from secondary sources at either Block 1 or Block 2 is approximately one order of magnitude (one tenth) or less than is currently observed in groundwater for the contaminants modeled. The VLEACH model was re-run using site-specific parameters (likely case scenario) and the results showed that secondary sources beneath both Block 1 and Block 2 did not pose a threat to groundwater above groundwater MCLs for the contaminants modeled.

Additional lines of evidence regarding the infiltration/percolation pathway were also considered. A grab groundwater sample collected immediately upgradient of Block 1 had PCE concentrations of 782 µg/l and a groundwater sample from a monitoring well immediately downgradient of the former PCE release at Block 1 had PCE concentrations of 400 µg/l. The ratio of PCE to TCE in the upgradient sample was 2.5:1, and in the downgradient sample 1.8:1 (refer to Figure 28). If secondary sources from the PCE release at Block 1 were contributing to groundwater contamination, PCE concentrations in groundwater would be expected to be higher and the ratio of PCE to TCE would increase rather than decrease at the downgradient location.

Based on the multiple lines of evidence observed, the infiltration/percolation pathway for secondary sources at the Site is not considered relevant. Nevertheless, volatile emissions from regionally degraded groundwater remains a potential pathway that requires further assessment from the standpoint of existing conditions and future development activities at the Site.

5.4 Factors Related to Soil/Air Pathways

Soil contamination represents a secondary source with multiple migration pathways, including surface/shallow soil and volatile emissions to outdoor air and indoor air. Exposure routes for surface/shallow soil pathways include ingestion, dermal contact, and inhalation. Inhalation represents the exposure route for outdoor and indoor air associated with volatile emissions from soil.

5.5 Potential Receptors

The Site is currently developed for industrial uses and is planned for redevelopment for industrial uses in the near future. On-Site current and future human receptor groups include industrial or commercial workers (inhalation from indoor air pathway) and construction workers involved in excavation activities that could expose them to surface or shallow soils (ingestion, dermal contact, or inhalation). Administrative and/or engineering controls could be implemented to minimize exposure risk to on-Site human receptors if the exposure pathway is determined to be complete.

Residential housing is present on the adjacent property north of Block 1, and on the adjacent properties west, northwest, north, and northeast of Block 2. There is no anticipated exposure pathway to the neighboring residential properties from secondary sources at the Site, with the possible exception of temporary volatile emissions to outdoor air from soils exposed during construction. That pathway can be mitigated using administrative and/or engineering controls during construction activities. The surficial aquifer is not used as a source of drinking or domestic water by the residences.

There are no local, state, or federally designated declining, endangered, or rare species that inhabit or migrate through the vicinity of the Site. Other wildlife species observed on-Site show no harm from the Site. There are no pathways to surface water or aquatic habitats in the Site vicinity from secondary sources at the Site.

6. HUMAN HEALTH SCREENING EVALUATION

The purpose of the Human Health Risk Assessment (HHRA) screening assessment (Appendix L) was to evaluate potential theoretical human health effects as a result of potential exposures to residual concentrations of constituents in on-Site soil, soil vapor, and indoor air. An HHRA CSM was developed based on site conditions, and is also presented in Appendix L (refer to Figure L-1).

Exposures and risks associated with theoretical future on-Site commercial workers and construction workers to soil and future onsite commercial workers to soil vapor and measured indoor air were also assessed. Standard default DTSC (Note 1, 2019a,b) exposure parameters, vapor intrusion guidelines (2011, 2019c), and toxicity criteria (DTSC 2019d) were utilized in the assessment.

The calculated theoretical upper-bound incremental cancer risks and noncancer health hazards associated with these exposure estimates are summarized in Table 30.

The results of the HHRA produced the following conclusions:

- Assumed future commercial worker (bulk) soil exposures[7] estimated for the maximum detected surface soil concentrations (0 to 10 feet bgs) did not exceed risk thresholds for Block 1 (hazard index [HI] = 0.06, incremental lifetime cancer risk [ILCR] = 2 x 10^{-8}) or Block 2 (HI = 0.03, ILCR = 2 x 10^{-7})
- Assumed future construction worker (bulk) soil exposures[7] estimated for the maximum detected surface soil concentrations (0 to 10 feet bgs) did not exceed risk thresholds for Block 1 (HI = 0.6, ILCR = 1 x 10^{-9}) or Block 2 (HI = 0.66, ILCR = 2 x 10^{-8})
- Risk and hazard estimates for assumed soil vapor intrusion estimates (commercial indoor air) associated with the maximum detected soil vapor concentrations modeled using the default attenuation factor of 0.03 exceeded target risk thresholds[7]. However, results of chemical analysis of indoor air samples that were collected by ERM (refer to Section 3.3) demonstrate that actual indoor air concentrations are much lower than those predicted using the default attenuation factor of 0.03. This indicates that the default attenuation factor of 0.03 may be overly conservative and not applicable to the Site.
    - It should be noted that installation of additional controls (e.g., vapor barriers/mitigation systems) are recommended, as additional safety/precautionary measures for buildings constructed at the Site in the future, and/or that require verification of the lack of theoretical vapor intrusion, post-redevelopment.
- Risk and hazard estimates for maximum measured indoor air (commercial indoor air) concentrations were less than or equal to target risk thresholds for Block 1 (HI = 0.013, ILCR = 0) or Block 2 (HI = 0.66, ILCR = 1 x 10^{-6}). At Block 2, these risk estimates were driven by benzene concentrations.
    - Maximum detected benzene concentrations in indoor air are not distinguishable from anthropogenic background values typically seen in Southern California urban environments (CARB 2019). Therefore, these concentrations cannot be specifically attributed to Site conditions.
- Cumulative risk estimates[7] (Table 30) for each Block were:
    - Block 1 Commercial Worker
        - Soil and Theoretical Vapor Default AF VI: HI = 20, ILCR = 1 x 10^{-3}

[7] Estimated exposures and risks did not include any potential reductions in exposures from future potential redevelopment/mitigation elements.

    - Soil and Measured Indoor Air: HI = 0.07, ILCR = 2×10^{-8}
- Block 1 Construction Worker: HI = 0.6, ILCR = 1×10^{-9}
- Block 2 Commercial Worker:
    - Soil and Theoretical Vapor Default AF VI: HI = 65, ILCR = 6×10^{-4}
    - Soil and Measured Indoor Air: HI = 0.69, ILCR = 2×10^{-7}
- Block 2 Construction Worker: HI = 0.66, ILCR = 2×10^{-8}

While the cumulative results considered to be most representative of current site conditions (soil and measured indoor air) are less than or equal to target risk thresholds, all calculated risk estimates are also based on: 1) maximum detected concentrations, and 2) no assumed mitigation offered by either a) planned development (excavation for building construction, buildings, and hardscape covering most of the Site), or b) legal requirements to install vapor mitigation systems.

As additional safety/precautionary measures, it is recommended that additional controls (e.g., vapor barriers/mitigation systems) be installed, and post-development conditions be evaluated by sampling of indoor air within the redevelopment structures.

7. SITE DEVELOPMENT PLANS

The conceptual redevelopment plans for Block 1 and Block 2 (Appendix M) contemplate that only one existing building will remain on Site (the 1521 Grand Avenue Building on Block 2). According to information provided by the Developer, approximately 8,000 to 10,000 cubic yards of soil (generally from the upper 10 feet) from Block 1 and approximately 12,000 to 15,000 cubic yards of soil (also generally from the upper 10 feet) from Block 2 will be removed and disposed of off Site, as part of the planned grading activities. Based on the Site conditions detailed in this Report, it is expected that the volume of soil that may have to be managed with special handling will be minimal.

To support the planned redevelopment of the Site, an SMP will be developed when a final design for the Site is prepared by the Developer. The key objectives of the SMP shall include the following:

- The reduction in mobility of potentially impacted soil during future Site grading or excavation activities;
- The reduction of exposure to construction/Site workers to potentially impacted soil during future Site grading or excavation activities;
- The reduction of off-Site receptor exposure to potentially impacted soil during future Site grading or excavation activities;
- To keep organized control of potentially impacted soil during future Site grading or excavation activities;
- Abandonment of existing soil vapor wells/probes prior to demolition or identify areas and structures that require protection in place;
- Provide guidance for regulatory notifications and requirements, and guidance for soil management during future Site grading or excavation activities;
- Allow Site redevelopment, including large-scale soil excavation, to proceed without undue schedule interruption; and
- The reduction of exposure to future commercial/industrial Site occupants from any residual soil vapors resulting through vapor intrusion to indoor air.

The SMP will address native and non-native (i.e., previously imported fill) soil, soil-like materials, and other unknown environmental concerns (e.g., stained and/or odorous soil, USTs, etc.) present at the Site that may be encountered during grading or excavation activities.

The SMP will address the following:

- Procedures for characterization, handling, and management of potentially impacted soils, which may be encountered during demolition and/or construction, including standards for re-use;
- Requirements for air monitoring of excavated soils including in accordance with the relevant South Coast Air Quality Management District's (SCAQMD) *Rule 1166 Contaminated Soil Mitigation Plan* (Rule 1166 Plan); and
- Requirements for the proper profiling and disposal of impacted soils including in accordance with the relevant SCAQMD Rule 1166 Plan and the Developer's objectives for waste management.

The SMP will address potential exposure pathways associated with secondary sources in soil, including exposure to surface/shallow soil and volatile emissions to outdoor air during redevelopment activities, such as grading and excavation. The Developer, through the implementation of administrative and/or engineering controls, as necessary, will mitigate other long-term exposure pathways that may exist from secondary sources following redevelopment, including shallow soil and indoor air. Such controls will

include a Land Use Covenant (LUC), and may also include the design of appropriate venting, and associated monitoring or maintenance for any existing structure(s) that will remain as part of the redevelopment plans for the Site, and construction of vapor barriers beneath new structures intended for human occupation. Those measures will minimize potential exposure to shallow soils and reduce and/or prevent vapor intrusion from the subsurface soils to indoor air in a manner that protects future commercial/industrial Site occupants from unacceptable health risk.

8. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Sections 1 through 3 of this Report document the extensive amount of Site data that have been collected to date to characterize the identified sources of contaminants of concern and understand the distribution of residual mass as a potential secondary source that could potentially impact human health or the environment. Based on available historical information from adjacent properties, and data collected during Site investigations conducted by ERM between 2016 and 2019, except for residual VOCs in shallow soil vapor near the former source area on Block 1 (location of former UST as shown on Figure 2), VOCs detected in soil vapor at the Site appear to be sourced from contaminated groundwater flowing below the Site and/or from contaminated soil vapor originating from nearby properties having reported concentrations at levels significantly greater than those detected at the Site.

Section 4 of this Report outlines the methods and results of vadose zone modeling used to assess whether or not the potential secondary sources represent a continued threat to groundwater, considering that groundwater beneath the Site is not designated for MUN end uses and is degraded by historical industrial activities in the region. The results of that analysis indicate that, based on conservative assumptions, the potential contribution to groundwater degradation from secondary sources at the Site is less than drinking water standards.

Section 5 defines the CSM, based on earlier sections of this Report that document Site history, primary sources of COCs, and results of previous investigations, and focuses on identified secondary sources, secondary release mechanisms, migration pathways, exposure routes, and potential receptors. Exposure pathways that are potentially complete are identified. An identified pathway involving potential temporary volatile emissions to outdoor air from soils exposed during construction can be mitigated using administrative and/or engineering controls during redevelopment activities.

Section 6 provides an HHRA based on the CSM and existing Site data. Risk and hazard estimates were below target risk thresholds for all pathways identified except assumed soil vapor intrusion estimates (commercial indoor air) associated with the maximum detected soil vapor concentrations. For that pathway, the modeled risk and hazard estimate, using the default attenuation factor of 0.03, were greater than target risk thresholds. Indoor air samples collected at the Site, however, demonstrate that actual indoor air concentrations are much lower than those predicted using the default attenuation factor of 0.03. This indicates that the default attenuation factor of 0.03 is likely overly conservative for current conditions, and currently not applicable to the Site, subject to confirmation as discussed below.

Section 7 outlines future Site development plans and proposed activities for verification of conclusions presented in this report. In addition, administrative and/or engineering controls to mitigate potential exposure pathways are discussed and include 1) vapor intrusion mitigation 2) an LUC for shallow soil and groundwater exposure pathways, and 3) the development of an SMP for soils disturbed during construction of new developments.

Based on the totality of the data provided in this report, the following conclusions are provided:

- The Site meets current environmental standards for redevelopment intended for commercial/industrial use.
- Conservative vadose modeling shows that residual mass in the vadose zone will not impact groundwater at concentrations above MCLs for any of the COCs that were analyzed. The predicted maximum contribution of VOC mass from secondary sources remaining at the Site is, therefore, considered insignificant (i.e., less than MCLs or other regulatory standards for the designated beneficial end uses for the surficial aquifer) and substantially less than the existing regional groundwater quality.

- Neither of the primary chemicals of potential concern (TCE, PCE) were detected in indoor air samples collected at the Site, and estimated hazards and risks associated with detected compounds in measured indoor air were less than or equal to California Environmental Protection Agency acceptable risk metrics.
- Based on the available data and results of the risk assessment presented herein (HI<1, ILCR<10^{-6} for construction worker soil exposures, Table 30), there is no evidence to suggest that residual concentrations in bulk soil will present hazards and risks above acceptable levels for future onsite construction workers involved in utility installation, grading, and repairs[8].
- Evaluation of soil vapor using a default attenuation factor of 0.03 produces HI and ILCRs greater than California Environmental Protection Agency's points of departure. However, measured indoor air suggests the default AF may not represent current site conditions (see below)
- Concentrations of COCs in measured indoor air were found to be either non-detected or at levels consistent with the range of typical concentrations of ambient air for the Site. However, this is based on a single sampling event. Therefore, while there is no current evidence to suggest residual concentrations of COCs in soil vapor present a risk to indoor air (assuming conditions in future redevelopment structures are similar to or more protective than those evaluated herein), further sampling (as discussed below) is needed to confirm.
- Based on available data and results of the risk assessment presented herein, there is no evidence to suggest that excavation of shallow soils[8] at the Site will pose unacceptable risk to on-Site construction workers. However, any redevelopment activity that will disturb the soil, such as excavation, grading, removal of soil, trenching, backfilling, earth movement, mining or drilling, should not be done without an SMP approved by DTSC in writing.

Based on the findings of this SCR and the conclusions provided above, the following recommendations have been developed for the Site:

- The recommended final remedy for secondary sources at Block 1 and Block 2 is to apply an LUC that will restrict the Site to industrial/commercial uses. The property will be restricted to commercial/industrial use; there will not be any construction or placing of a building or structure on the property that is intended for use as a residence, including any mobile home or factory-built housing constructed or installed for use as a permanently occupied human habitation, a hospital for humans, or a public or private school or a daycare center for children. There will be no drilling, extraction or removal of water, oil, or natural gas from the property without prior approval from the DTSC. The owner will be required to do an annual inspection of the property to verify compliance with the LUC and will submit an annual inspection report to the DTSC for review and approval. The timing of this annual inspection has yet to be set.
- As an additional safety and precautionary measure, vapor barriers are recommended to be installed below all new building construction intended for commercial worker occupation (subject to City of ESFD requirements). In addition to the soil vapor barriers at Block 1 and Block 2, to mitigate potential vapor intrusion, soil venting will be used as necessary, including passive soil venting along the northern boundary of Block 2.
- Although there is no evidence to suggest that excavation of shallow soils at the Site will pose unacceptable risk to on-Site construction workers, an SMP should be implemented to mitigate potential exposures that may occur during redevelopment construction activities.

[8] Estimated exposures and risks did not include any potential reductions in exposures from future potential redevelopment/mitigation elements.

- Although concentrations of COCs in indoor air were found to be either non-detected or at levels consistent with the range of typical concentrations of ambient air for the Site, two rounds of post-development sampling of indoor air and sub-slab vapor should be conducted per building, at the same time, to represent temporal/seasonal variation in potential contaminant concentrations.

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FIGURES

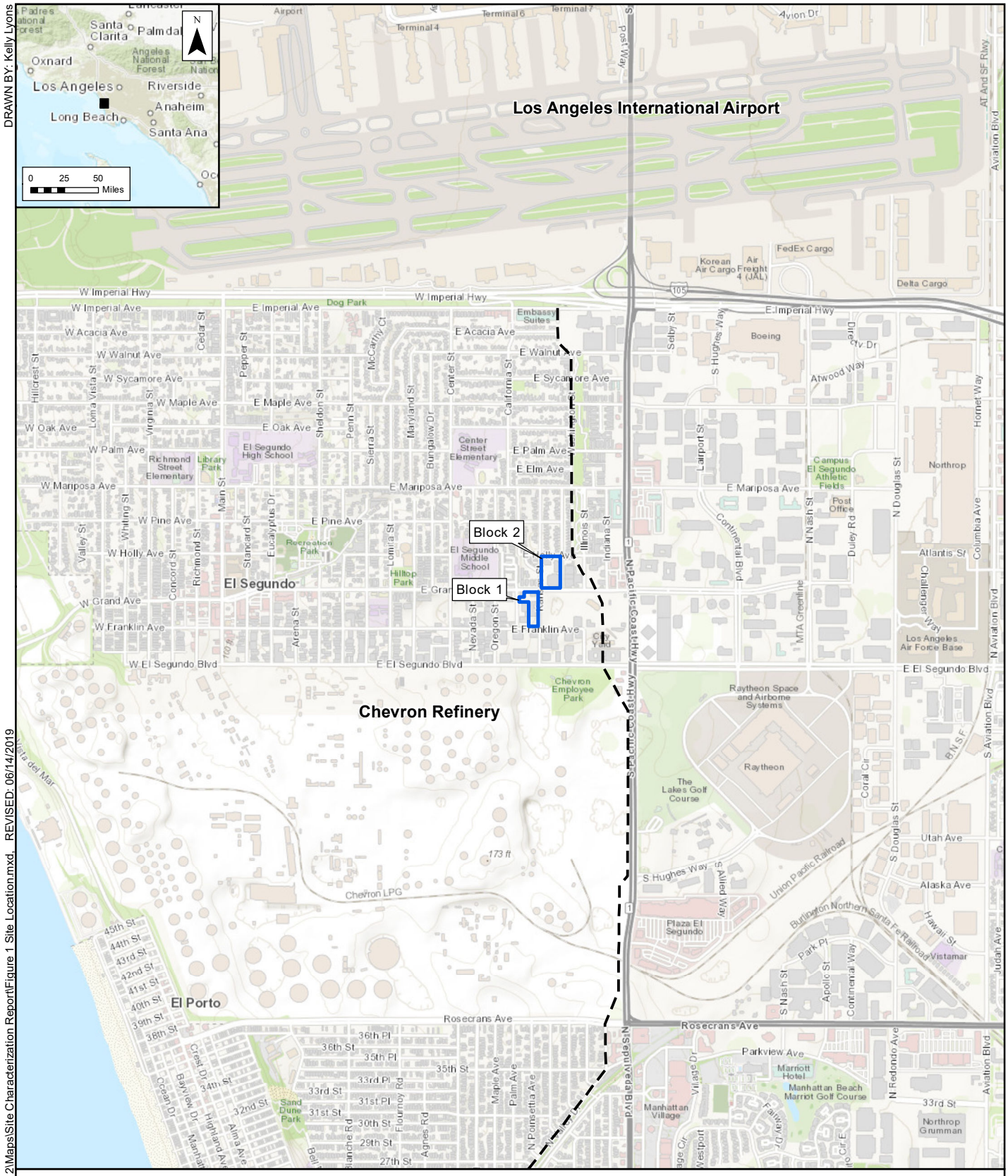


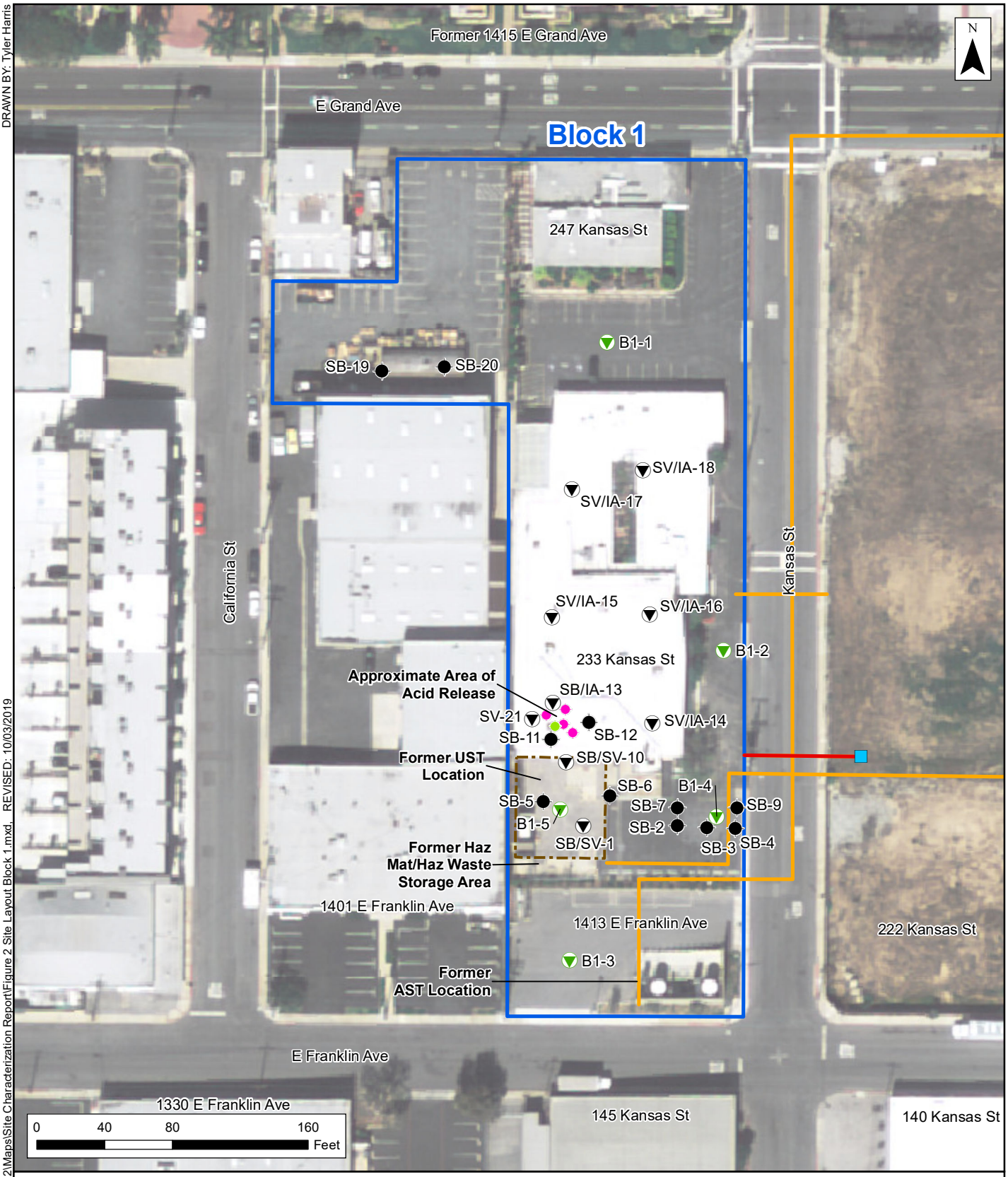
Figure 1
Site Location Map
Infineon Block 1 and Block 2
El Segundo, California

Environmental Resources Management
www.erm.com

DRAWN BY: Kelly Lyons

M:\Projects\0444392 Infineon Phase 2\Maps\Site Characterization Report\Figure 1 Site Location.mxd, REVISED: 06/14/2019

Source: Esri - World Topoographic Map; NAD 1983 StatePlane California V FIPS 0405 Feet



Legend

- GTI 1995 Soil Boring (Approx.)
- Environ 2000 Soil Boring (Approx.)
- 2017 ERM Soil Boring
- 2017 ERM Indoor Air Sample, Soil Boring, and/or Soil Vapor Sample Loc.
- 2018 Soil Boring and Soil Vapor Sample Location
- Former Clarifier
- Presumed Waste Solvent Pipeline
- Hydrogen, Nitrogen, and Clean Dry Air Piping
- Soil Remediation Area
- Subject Property

Figure 2
Previous Sample Locations and Soil Remediation Area
Infineon Block 1
El Segundo, California

Environmental Resources Management
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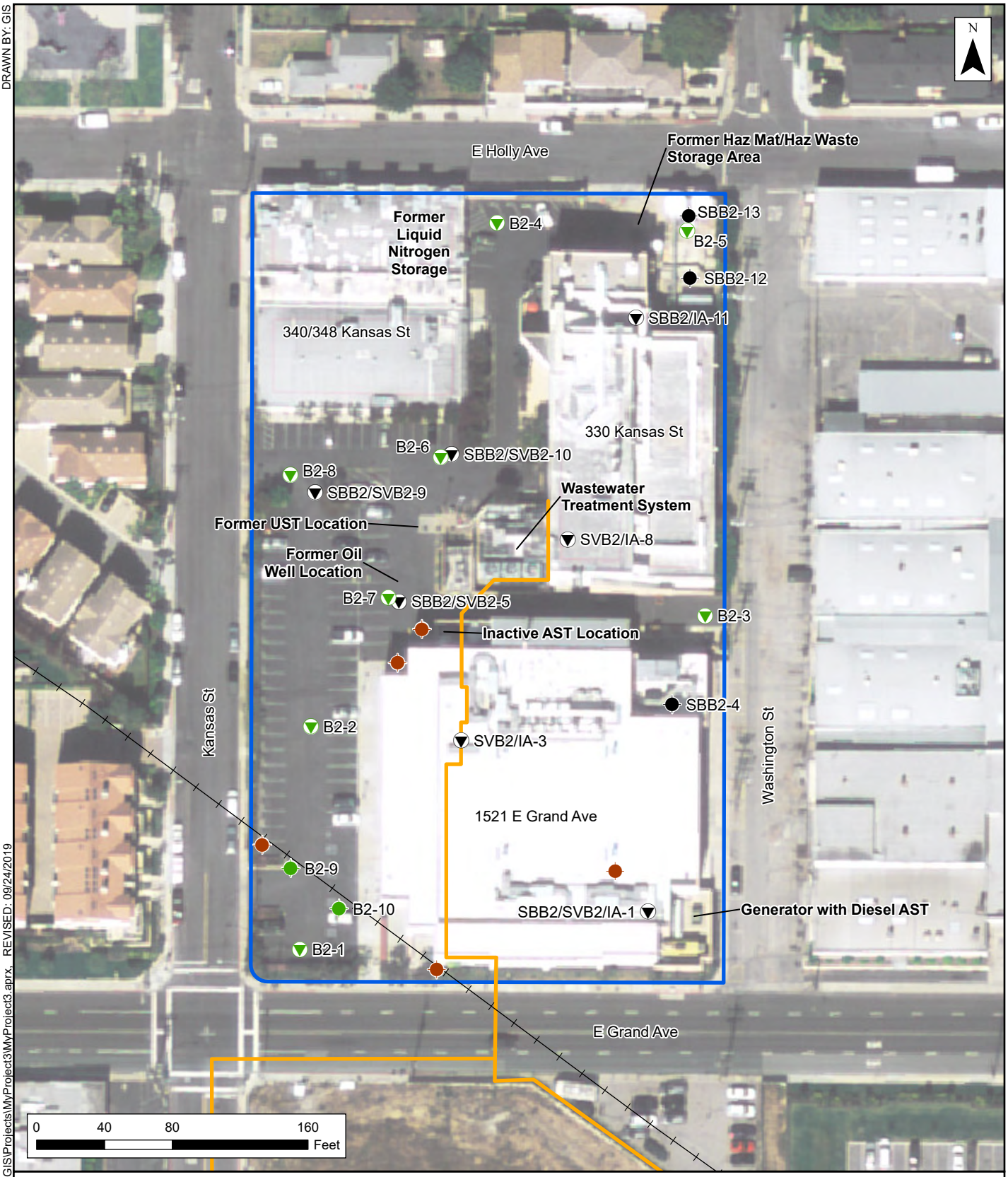
Source: Los Angeles Aerial Webservice, 2012; NAD 1983 StatePlane California V FIPS 0405 Feet

DRAWN BY: Tyler Harris

M:\Projects\0444392 Infineon Phase 2\Maps\Site Characterization Report\Figure 2 Site Layout Block 1.mxd, REVISED: 10/03/2019



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REVISED: 09/24/2019

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Legend

- GTI 1996 Soil Boring
- ERM 2017 Soil Boring
- ERM 2017 Indoor Air Sample, Soil Boring, and/or Soil Vapor Sample Location
- ERM 2018 Soil Boring and Soil Vapor Sample Location
- ERM 2019 Soil Boring
- Hydrogen, Nitrogen, and Clean Dry Air Piping
- Former Railroad Track (Approximate)
- Subject Property

Figure 3
Previous Sample Locations
Infineon Block 2
El Segundo, California

Environmental Resources Management
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Source: Los Angeles Aerial Webservice, 2012; NAD 1983 StatePlane California V FIPS 0405 Feet

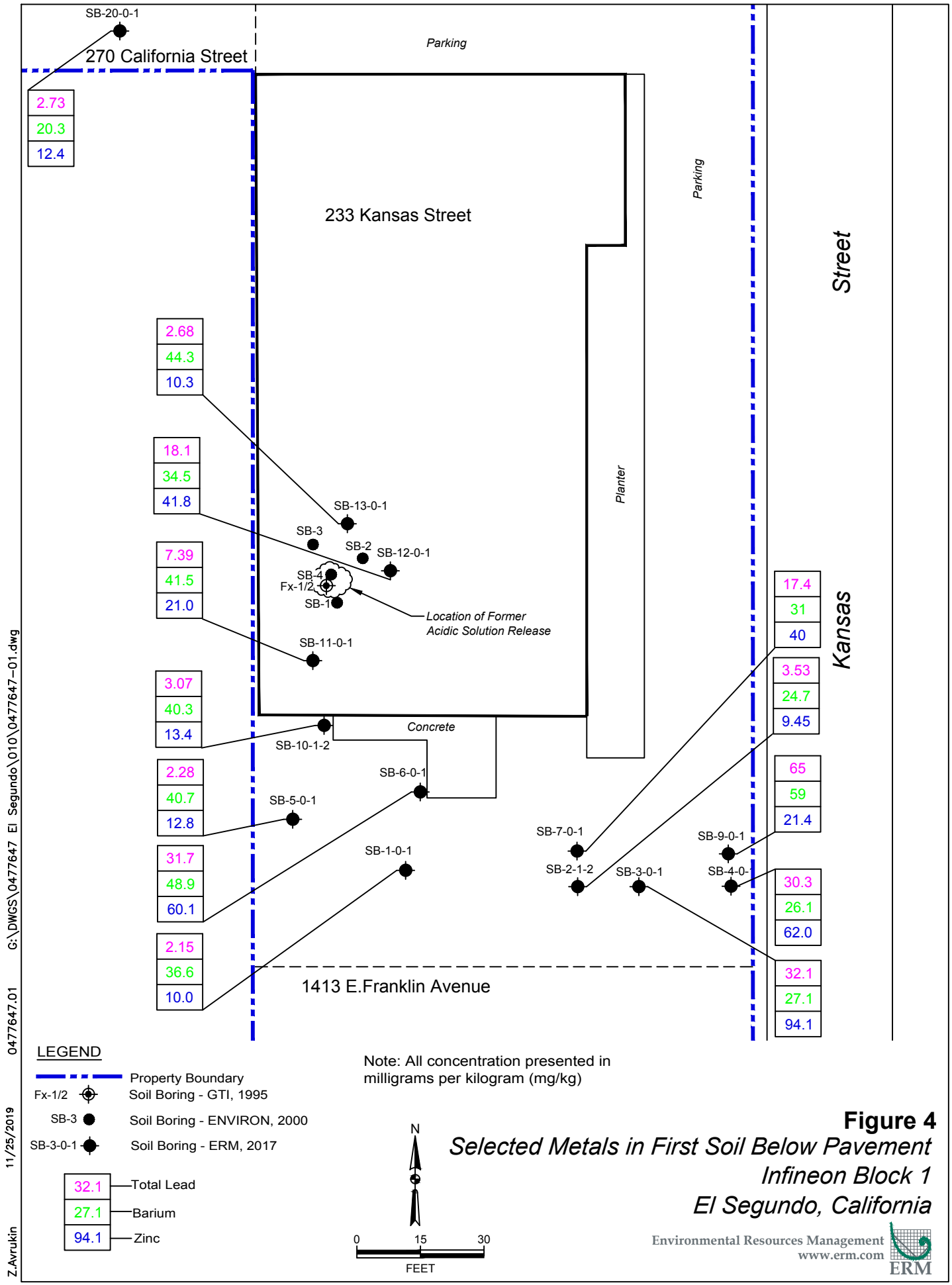


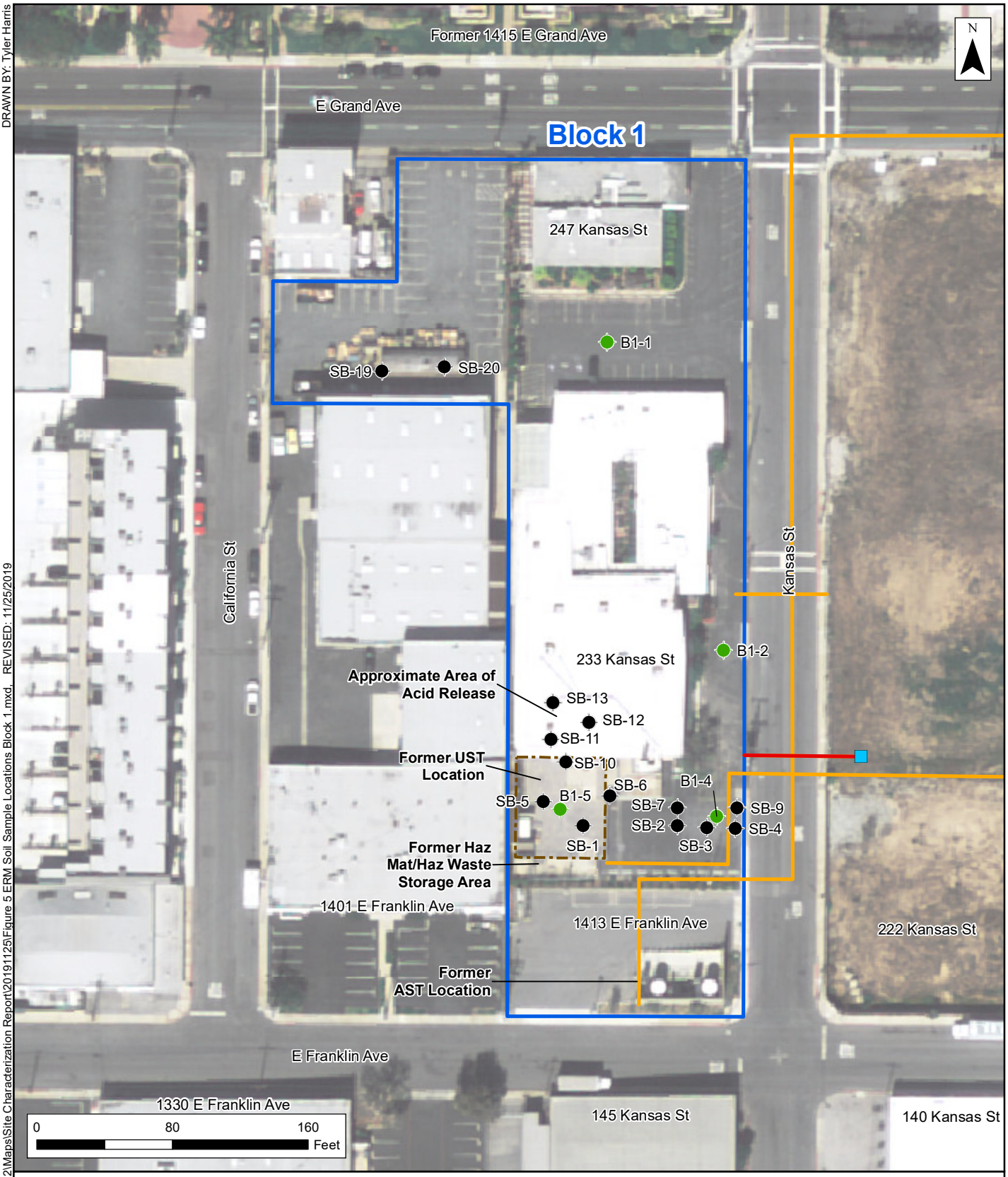
Figure 4

Selected Metals in First Soil Below Pavement

Infineon Block 1

El Segundo, California

Environmental Resources Management
www.erm.com



Legend

- ERM 2017 Soil Boring
- ERM 2018 Soil Boring
- Former Clarifier
- Presumed Waste Solvent Pipeline
- Hydrogen, Nitrogen, and Clean Dry Air Piping
- Fluor Daniel 1994-1996 Soil Remediation Area
- Subject Property

Figure 5
ERM Soil Sample Locations
Infineon Block 1
El Segundo, California

Environmental Resources Management
www.erm.com

Source: Los Angeles Aerial Webservice, 2012; NAD 1983 StatePlane California V FIPS 0405 Feet

DRAWN BY: Tyler Harris

M:\Projects\0444392 Infineon Phase 2\Maps\Site Characterization Report\20191125\Figure 5 ERM Soil Sample Locations Block 1.mxd, REVISED: 11/25/2019

DRAWN BY: Tyler Harris

M:\Projects\0444392 Infineon Phase 2\Maps\Site Characterization Report\20191125\Figure 6 ERM Soil Sample Locations Block 2.mxd, REVISED: 11/25/2019

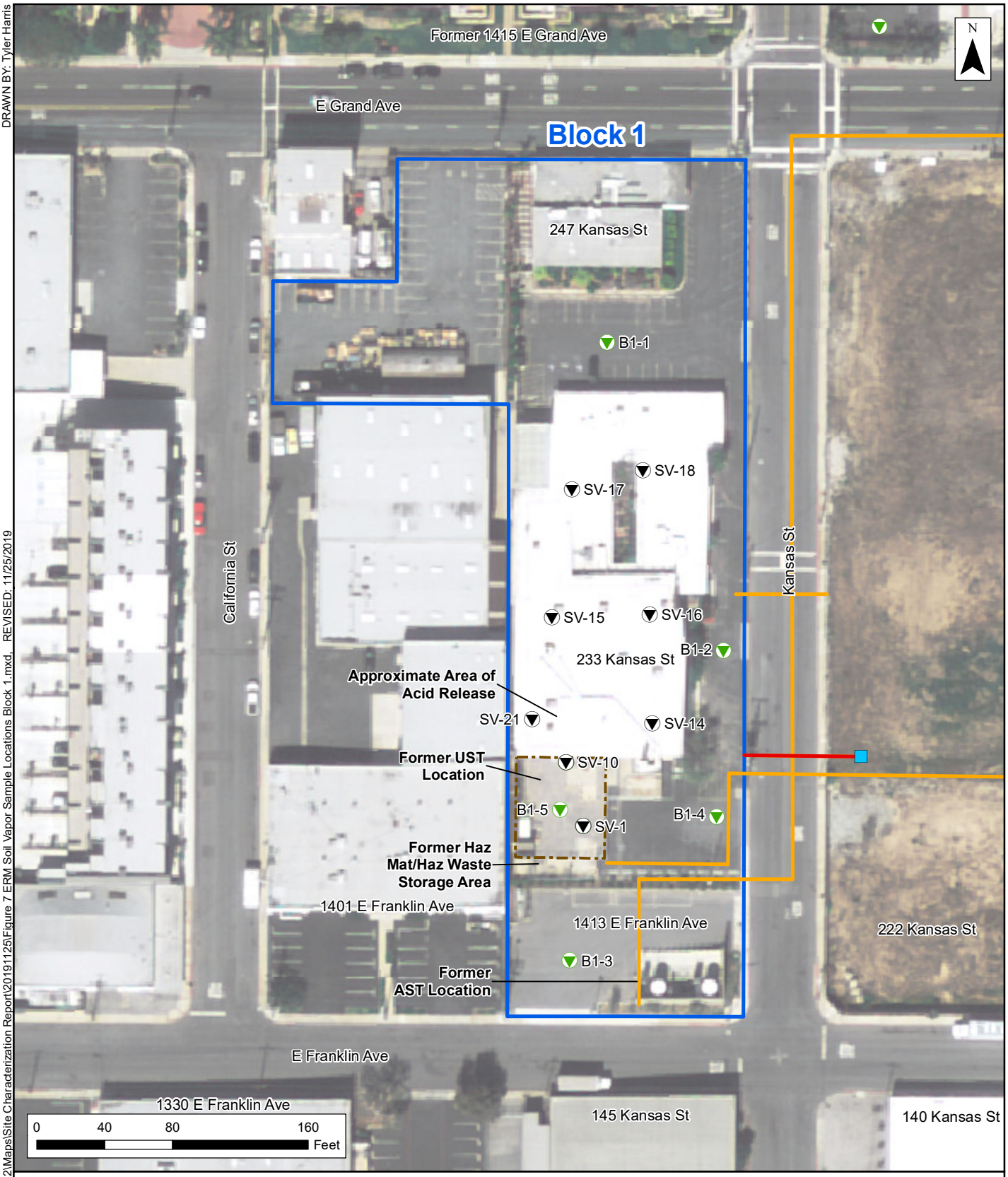
Legend

- ERM 2017 Soil Boring
- ERM 2018 Soil Boring and Soil Vapor Sample Location
- ERM 2019 Soil Boring
- Hydrogen, Nitrogen, and Clean Dry Air Piping
- Former Railroad Track (Approximate)
- Subject Property

Figure 6
ERM Soil Sample Locations
Infineon Block 2
El Segundo, California

Environmental Resources Management
www.erm.com

Source: Los Angeles Aerial Webservice, 2012; NAD 1983 StatePlane California V FIPS 0405 Feet



Legend

- 2017 ERM Soil Vapor Sample Location
- 2018 Soil Vapor Sample Location
- Former Clarifier
- Presumed Waste Solvent Pipeline
- Hydrogen, Nitrogen, and Clean Dry Air Piping
- Soil Remediation Area
- Subject Property

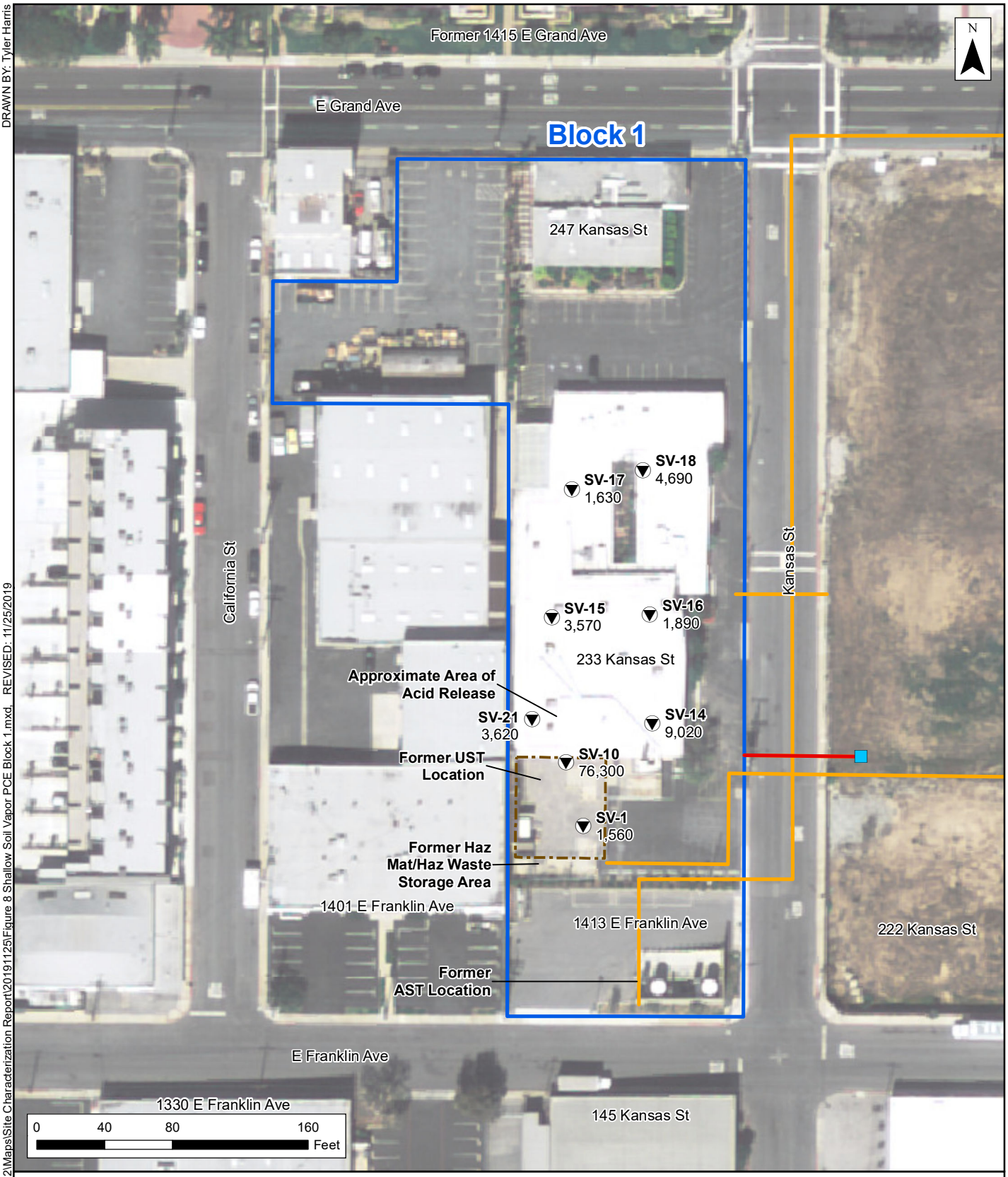
Figure 7
ERM Soil Vapor Sample Locations
Infineon Block 1
El Segundo, California

Environmental Resources Management
www.erm.com

Source: Los Angeles Aerial Webservice, 2012; NAD 1983 StatePlane California V FIPS 0405 Feet

DRAWN BY: Tyler Harris

M:\Projects\0444392 Infineon Phase 2\Maps\Site Characterization Report\20191125\Figure 7 ERM Soil Vapor Sample Locations Block 1.mxd, REVISED: 11/25/2019



DRAWN BY: Tyler Harris

M:\Projects\0444392 Infineon Phase 2\Maps\Site Characterization Report\20191125\Figure 8 Shallow Soil Vapor PCE Block 1.mxd, REVISED: 11/25/2019

Legend

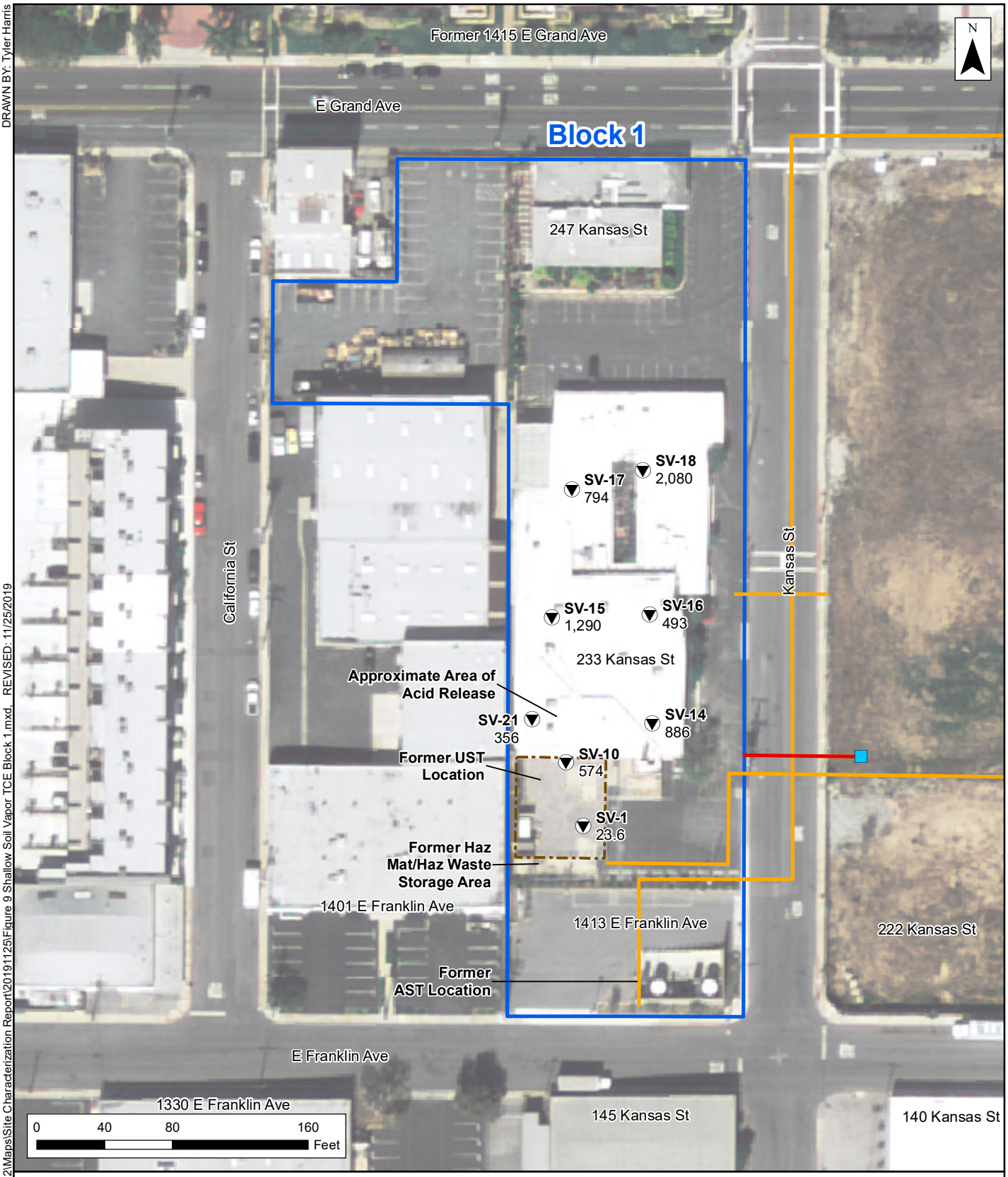
- 2017 ERM Soil Vapor Sample Location (5 feet BGS)
- Former Clarifier
- Presumed Waste Solvent Pipeline
- Hydrogen, Nitrogen, and Clean Dry Air Piping
- Soil Remediation Area
- Subject Property

Notes:
Concentrations in micrograms per cubic meter (µg/m^3).
PCE: Tetrachloroethene.
BGS: Below Ground Surface.

Figure 8
Shallow Soil Vapor - PCE
Infineon Block 1
El Segundo, California

Environmental Resources Management
www.erm.com
ERM

Source: Los Angeles Aerial Webservice, 2012; NAD 1983 StatePlane California V FIPS 0405 Feet



DRAWN BY: Tyler Harris

M:\Projects\0444392 Infineon Phase 2\Maps\Site Characterization Report\20191125\Figure 9 Shallow Soil Vapor TCE Block 1.mxd, REVISED: 11/25/2019

Legend

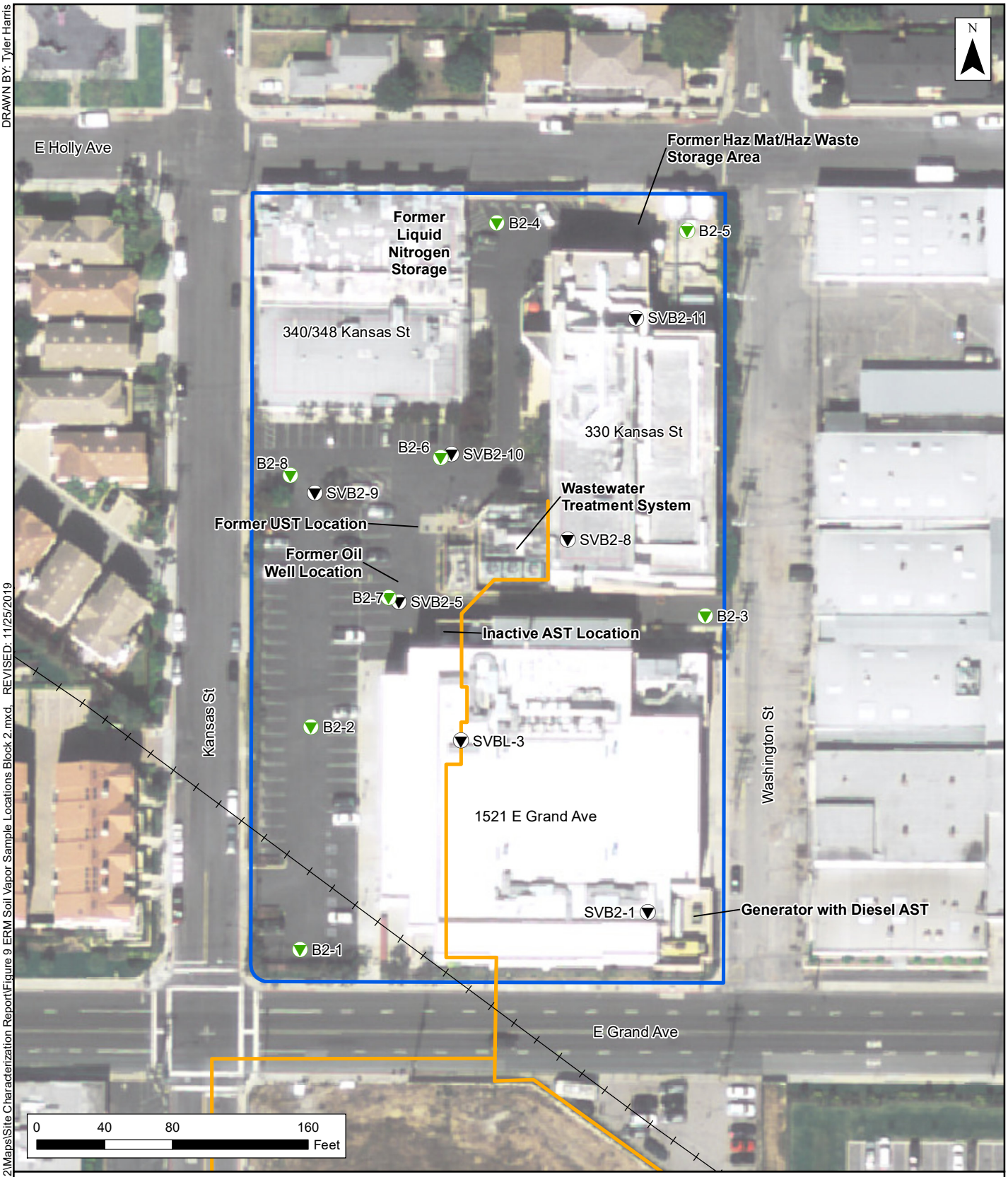
- 2017 ERM Soil Vapor Sample Location (5 feet BGS)
- Former Clarifier
- Presumed Waste Solvent Pipeline
- Hydrogen, Nitrogen, and Clean Dry Air Piping
- Soil Remediation Area
- Subject Property

Notes:
Concentrations in micrograms per cubic meter (µg/m^3).
TCE: Trichloroethene.
BGS: Below Ground Surface.

Figure 9
Shallow Soil Vapor - TCE
Infineon Block 1
El Segundo, California

Environmental Resources Management
www.erm.com
ERM

Source: Los Angeles Aerial Webservice, 2012; NAD 1983 StatePlane California V FIPS 0405 Feet



DRAWN BY: Tyler Harris

M:\Projects\0444392 Infineon Phase 2\Maps\Site Characterization Report\Figure 9 ERM Soil Vapor Sample Locations Block 2.mxd, REVISED: 11/25/2019

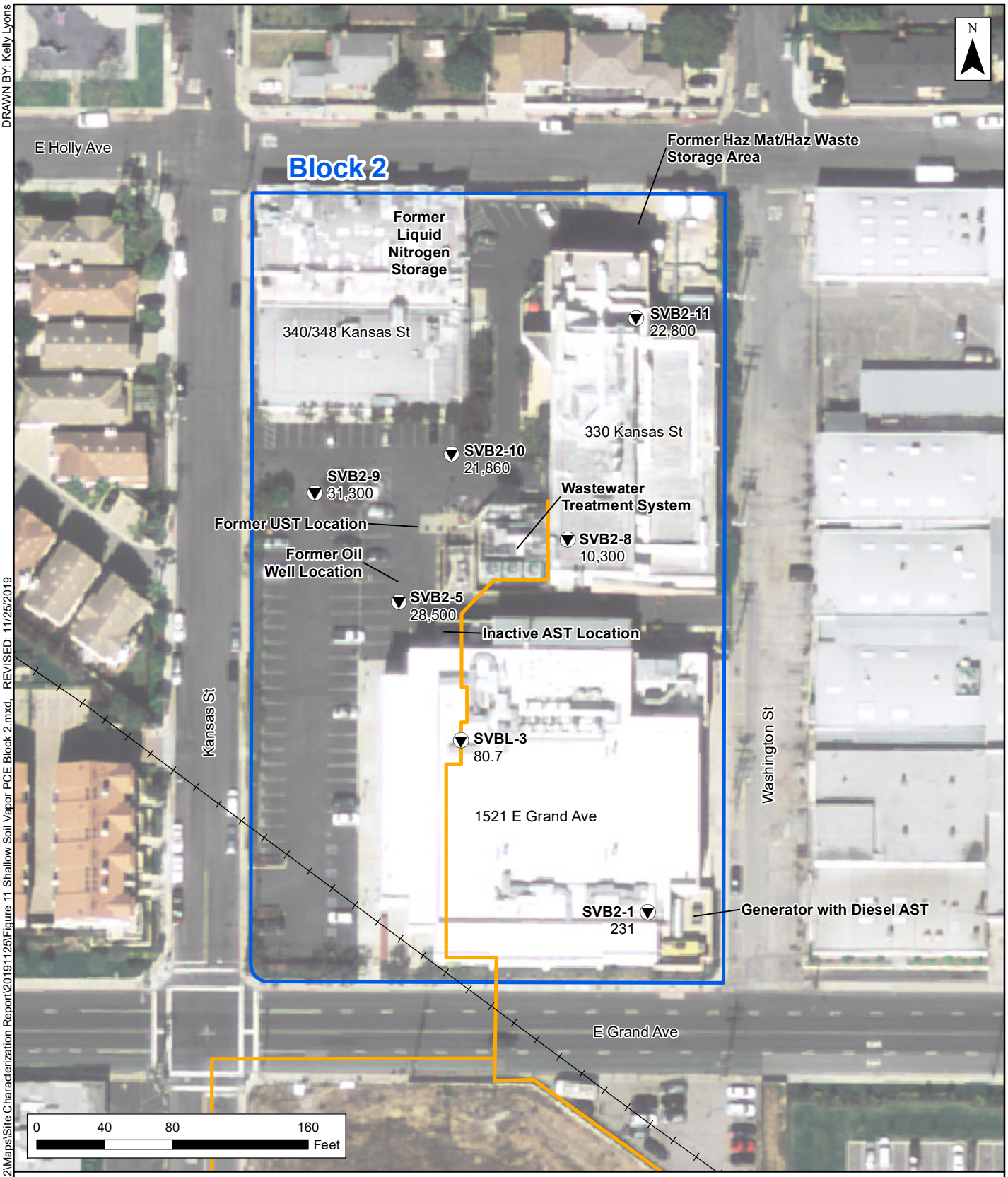
Legend

- ERM 2017 Soil Vapor Sample Location
- ERM 2018 Soil Boring and Soil Vapor Sample Location
- Hydrogen, Nitrogen, and Clean Dry Air Piping
- Former Railroad Track (Approximate)
- Subject Property

Figure 10
ERM Soil Vapor Sample Locations
Infineon Block 2
El Segundo, California

Environmental Resources Management
www.erm.com
ERM

Source: Los Angeles Aerial Webservice, 2012; NAD 1983 StatePlane California V FIPS 0405 Feet



DRAWN BY: Kelly Lyons

M:\Projects\0444392 Infineon Phase 2\Maps\Site Characterization Report\20191125\Figure 11 Shallow Soil Vapor PCE Block 2.mxd, REVISED: 11/25/2019

Legend

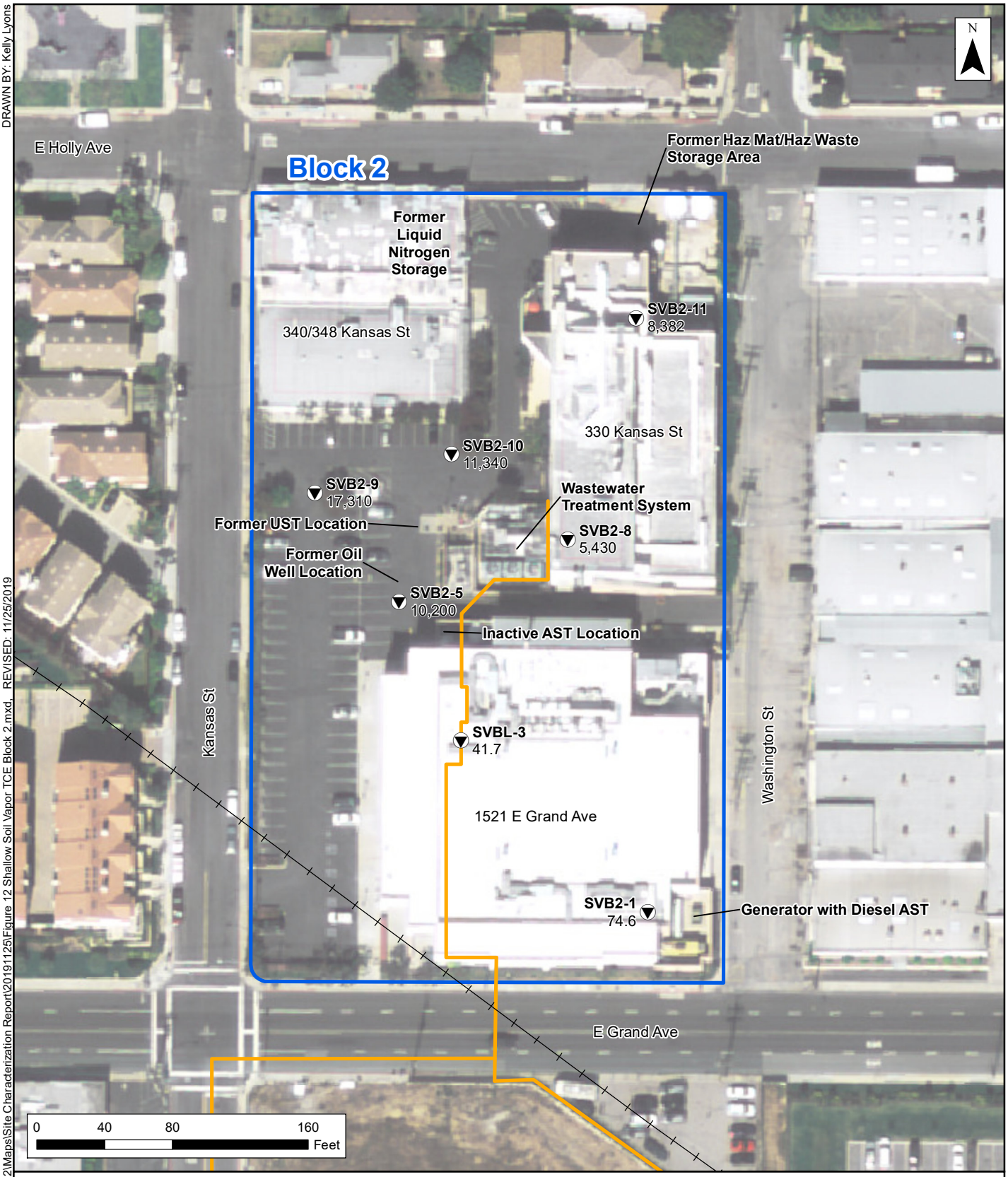
- ERM 2017 Soil Vapor Sample (5 feet BGS)
- Hydrogen, Nitrogen, and Clean Dry Air Piping
- Former Railroad Track (Approximate)
- Subject Property

Notes:
Concentrations in micrograms per cubic meter (µg/m^3).
PCE: Tetrachloroethene.
BGS: Below Ground Surface.

Figure 11
Shallow Soil Vapor - PCE
Infineon Block 2
El Segundo, California

Environmental Resources Management
www.erm.com
ERM

Source: Los Angeles Aerial Webservice, 2012; NAD 1983 StatePlane California V FIPS 0405 Feet



DRAWN BY: Kelly Lyons

M:\Projects\0444392 Infineon Phase 2\Maps\Site Characterization Report\20191125\Figure 12 Shallow Soil Vapor TCE Block 2.mxd, REVISED: 11/25/2019

Legend

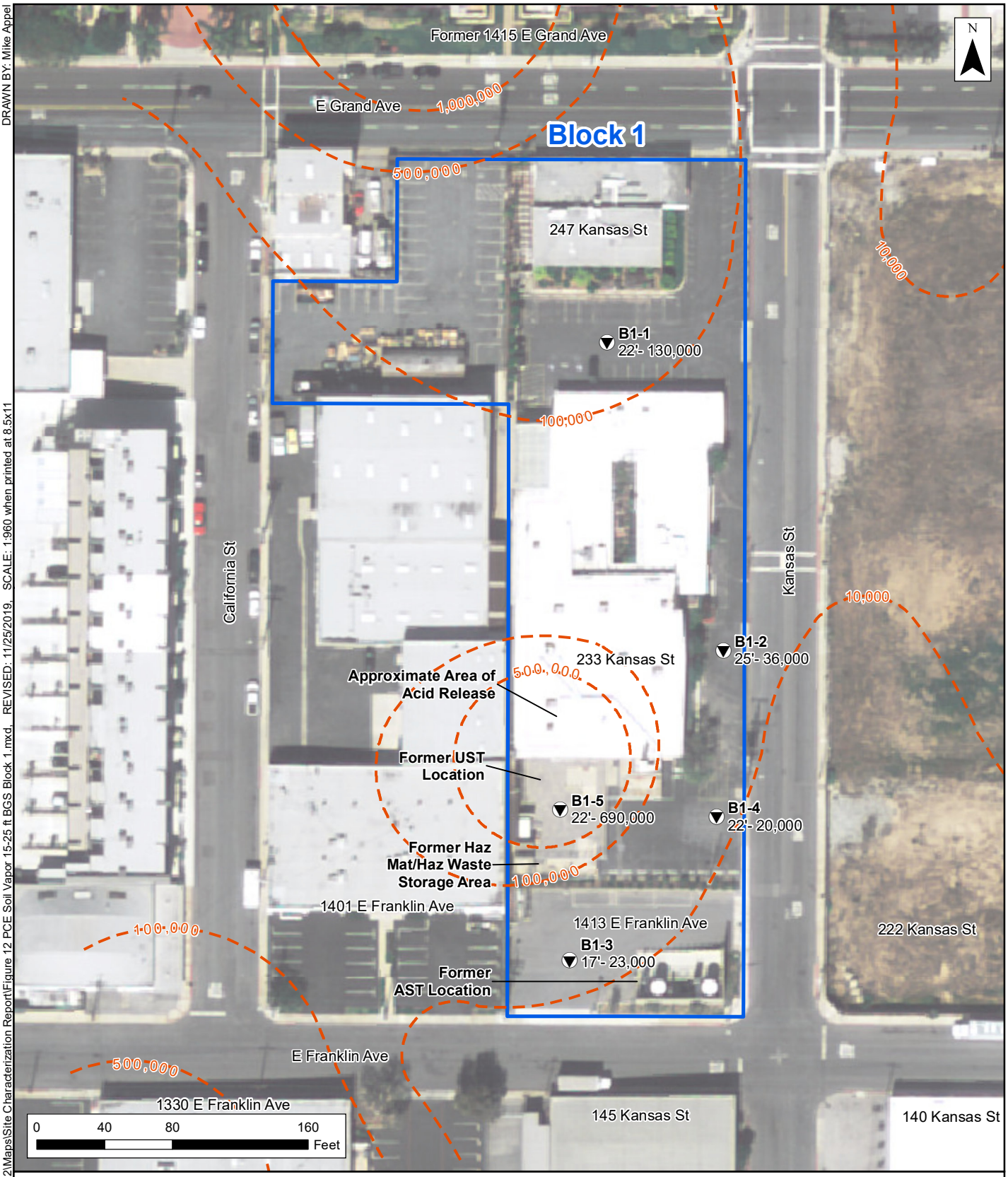
- ERM 2017 Soil Vapor Sample (5 feet BGS)
- Hydrogen, Nitrogen, and Clean Dry Air Piping
- Former Railroad Track (Approx.)
- Subject Property

Notes:
Concentrations in micrograms per cubic meter (µg/m^3).
TCE: Trichloroethene.
BGS: Below Ground Surface.

Figure 12
Shallow Soil Vapor - TCE
Infineon Block 2
El Segundo, California

Environmental Resources Management
www.erm.com
ERM

Source: Los Angeles Aerial Webservice, 2012; NAD 1983 StatePlane California V FIPS 0405 Feet



DRAWN BY: Mike Appel

M:\Projects\0444392 Infineon Phase 2\Maps\Site Characterization Report\Figure 12 PCE Soil Vapor 15-25 ft BGS Block 1.mxd, REVISED: 11/25/2019, SCALE: 1:960 when printed at 8.5x11

Legend

- ERM 2018 Soil Vapor Sample Location
- PCE Isoconcentration Contour
- Subject Property

Notes:
PCE: Tetrachloroethene
All results in micrograms per cubic meter (µg/m^3).
All depths in feet below ground surface (BGS).
Off-site contours are interpolated based on publicly available data from adjacent and/or nearby properties.

Figure 13
PCE in Soil Vapor
15-25 Feet BGS
Infineon Block 1
El Segundo, California

Environmental Resources Management
www.erm.com
ERM

Source: Los Angeles Aerial Webservice, 2012; NAD 1983 StatePlane California V FIPS 0405 Feet

Legend

- ERM 2018 Soil Vapor Sample Location
- PCE Isoconcentration Contour
- Subject Property

Notes:
PCE: Tetrachloroethene
All results in micrograms per cubic meter (µg/m^3).
All depths in feet below ground surface (BGS).
Off-site contours are interpolated based on publicly available data from adjacent and/or nearby properties.

Figure 14
PCE in Soil Vapor
45-55 Feet BGS
Infineon Block 1
El Segundo, California

Environmental Resources Management
www.erm.com

Source: Los Angeles Aerial Webservice, 2012; NAD 1983 StatePlane California V FIPS 0405 Feet

DRAWN BY: Mike Appel
SCALE: 1:960 when printed at 8.5x11
REVISED: 11/25/2019
M:\Projects\0444392 Infineon Phase 2\Maps\Site Characterization Report\Figure 13 PCE Soil Vapor 45-55 ft Block 1.mxd

Legend

- ERM 2018 Soil Vapor Sample Location
- PCE Isoconcentration Contour
- Subject Property

Notes:
PCE: Tetrachloroethene
All results in micrograms per cubic meter (µg/m^3).
All depths in feet below ground surface (BGS).
Off-site contours are interpolated based on publicly available data from adjacent and/or nearby properties.

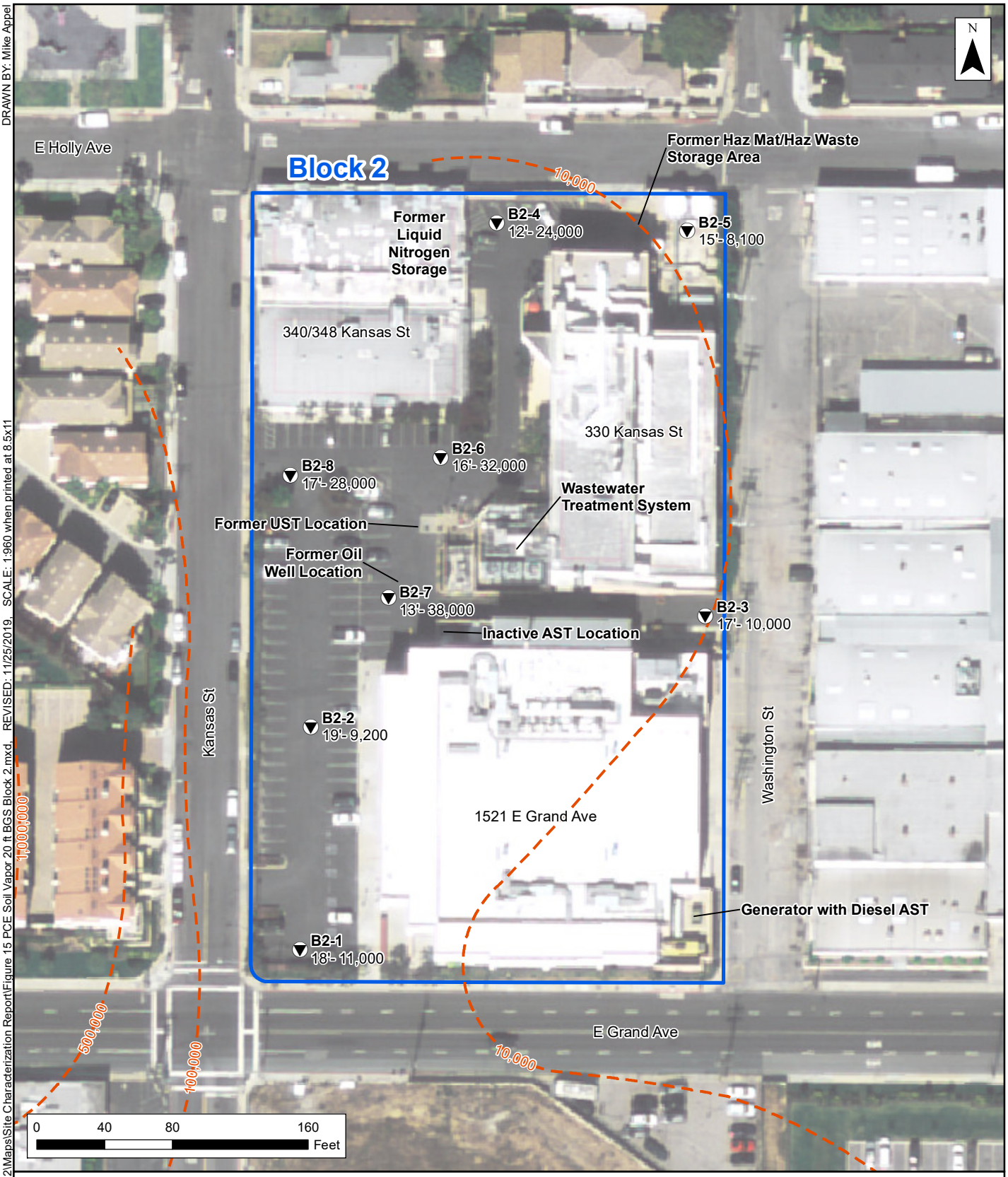
Figure 15
PCE in Soil Vapor
80 Feet BGS
Infineon Block 1
El Segundo, California

Environmental Resources Management
www.erm.com

Source: Los Angeles Aerial Webservice, 2012; NAD 1983 StatePlane California V FIPS 0405 Feet

DRAWN BY: Mike Appel

M:\Projects\0444392 Infineon Phase 2\Maps\Site Characterization Report\Figure 14 PCE Soil Vapor 80 ft BGS Block 1.mxd, REVISED: 11/25/2019, SCALE: 1:960 when printed at 8.5x11



Legend

- ERM 2018 Soil Vapor Sample Location
- PCE Isoconcentration Contour
- Subject Property

Notes:
PCE: Tetrachloroethene
All results in micrograms per cubic meter (µg/m^3).
All depths in feet below ground surface (BGS).
Off-site contours are interpolated based on publicly available data from adjacent and/or nearby properties.

Figure 16
PCE in Soil Vapor
10-20 Feet BGS
Infineon Block 2
El Segundo, California

Environmental Resources Management
www.erm.com
ERM

Source: Los Angeles Aerial Webservice, 2012; NAD 1983 StatePlane California V FIPS 0405 Feet

DRAWN BY: Mike Appel
SCALE: 1:960 when printed at 8.5x11
REVISED: 11/25/2019,
M:\Projects\0444392 Infineon Phase 2\Maps\Site Characterization Report\Figure 15 PCE Soil Vapor 20 ft BGS Block 2.mxd,

Legend

- Soil Vapor Sample Location
- PCE Isoconcentration Contour
- Subject Property

Notes:
PCE: Tetrachloroethene
All results in micrograms per cubic meter (µg/m^3).
All depths in feet below ground surface (BGS).
Off-site contours are interpolated based on publicly available data from adjacent and/or nearby properties.

Figure 17
PCE in Soil Vapor
45-55 Feet BGS
Infineon Block 2
El Segundo, California

Environmental Resources Management
www.erm.com
ERM

Source: Los Angeles Aerial Webservice, 2012; NAD 1983 StatePlane California V FIPS 0405 Feet

DRAWN BY: Mike Appel
SCALE: 1:960 when printed at 8.5x11
REVISED: 11/25/2019,
M:\Projects\0444392 Infineon Phase 2\Maps\Site Characterization Report\Figure 16 PCE Soil Vapor 45-55 ft BGS Block 2.mxd,

DRAWN BY: Mike Appel

M:\Projects\0444392 Infineon Phase 2\Maps\Site Characterization Report\Figure 17 PCE Soil Vapor 80ft Block 2.mxd, REVISED: 11/25/2019, SCALE: 1:960 when printed at 8.5x11

Legend

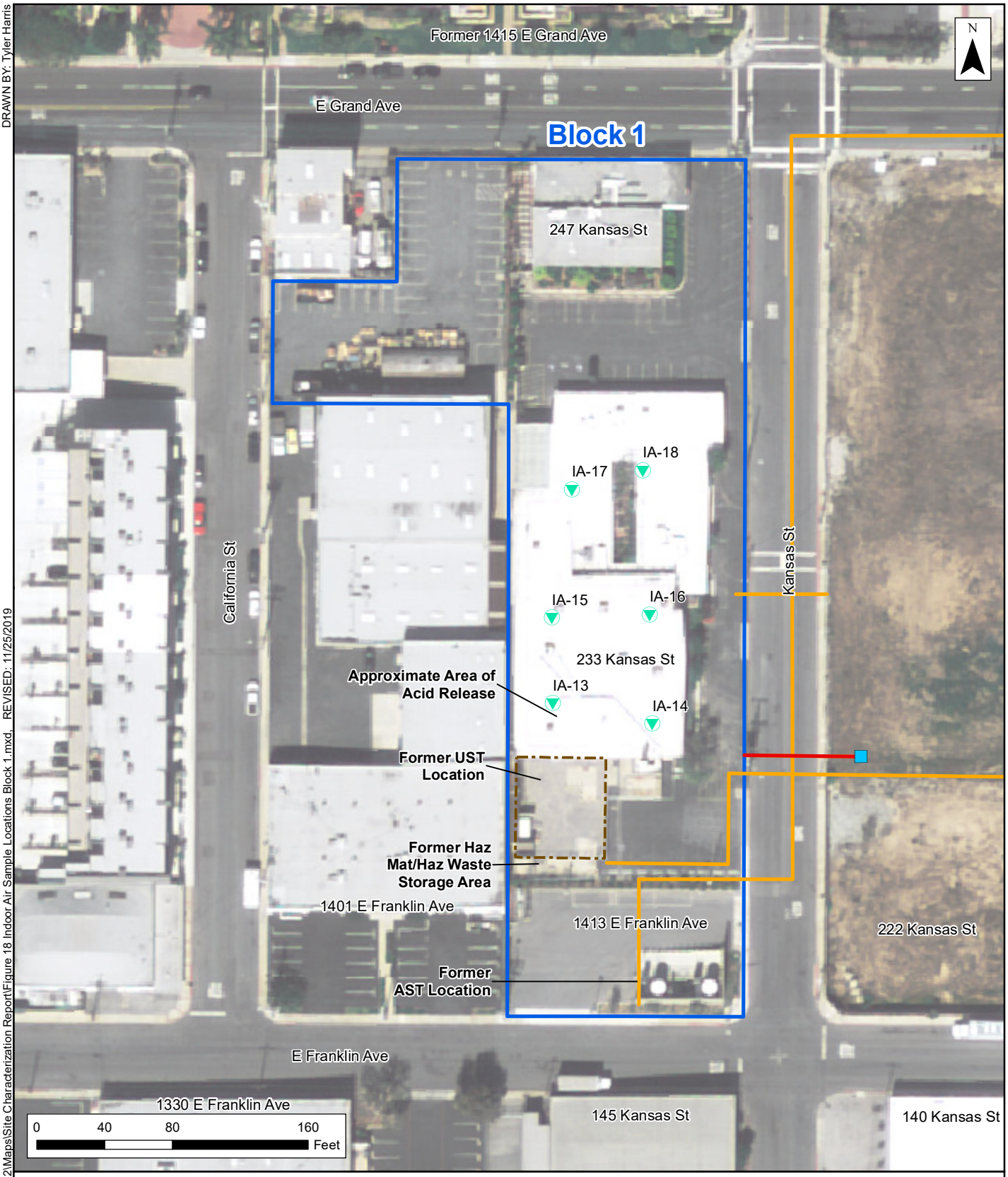
- Soil Vapor Sample Location
- PCE Isoconcentration Contour
- Subject Property

Notes:
PCE: Tetrachloroethene
All results in micrograms per cubic meter (µg/m^3).
All depths in feet below ground surface (BGS).
Off-site contours are interpolated based on publicly available data from adjacent and/or nearby properties.

Figure 18
PCE in Soil Vapor
75-80 Feet BGS
Infineon Block 2
El Segundo, California

Environmental Resources Management
www.erm.com
ERM

Source: Los Angeles Aerial Webservice, 2012; NAD 1983 StatePlane California V FIPS 0405 Feet



DRAWN BY: Tyler Harris

M:\Projects\0444392 Infineon Phase 2\Maps\Site Characterization Report\Figure 18 Indoor Air Sample Locations Block 1.mxd, REVISED: 11/25/2019

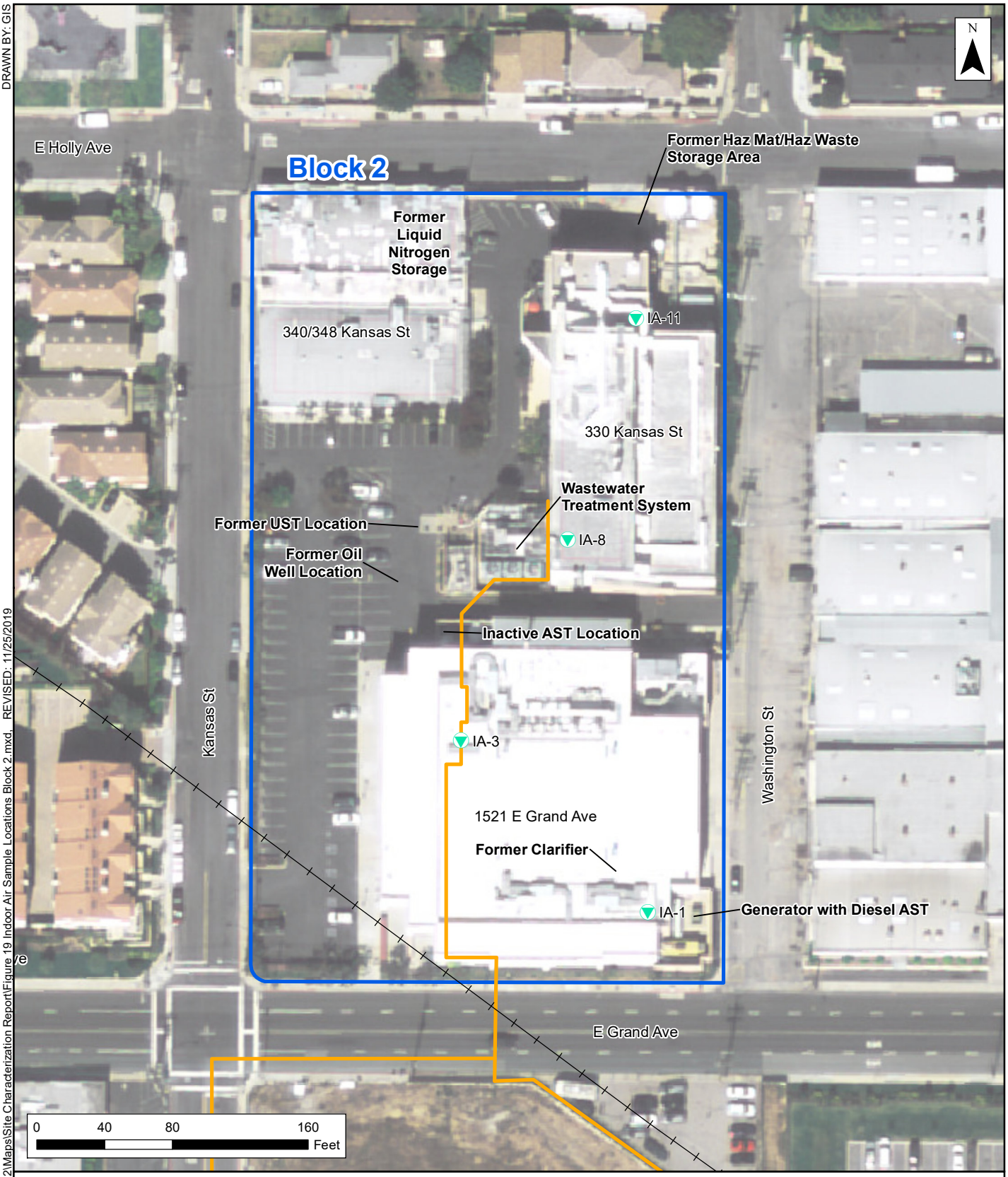
Legend

- ERM 2017 Indoor Air Sample Location
- Former Clarifier
- Presumed Waste Solvent Pipeline
- Hydrogen, Nitrogen, and Clean Dry Air Piping
- Soil Remediation Area
- Subject Property

Figure 19
Indoor Air Sample Locations
Infineon Block 1
El Segundo, California

Environmental Resources Management
www.erm.com

Source: Los Angeles Aerial Webservice, 2012; NAD 1983 StatePlane California V FIPS 0405 Feet



DRAWN BY: GIS

M:\Projects\0444392 Infineon Phase 2\Maps\Site Characterization Report\Figure 19 Indoor Air Sample Locations Block 2.mxd, REVISED: 11/25/2019

Legend

- ERM 2017 Indoor Air Sample Location
- Hydrogen, Nitrogen, and Clean Dry Air Piping
- Former Railroad Track (Approximate)
- Subject Property

Figure 20
Indoor Air Sample Locations
Infineon Block 2
El Segundo, California

Environmental Resources Management
www.erm.com
ERM

Source: Los Angeles Aerial Webservice, 2012; NAD 1983 StatePlane California V FIPS 0405 Feet

DRAWN BY: Tyler Harris

N

E Holly Ave

Block 2

A'

B2-5

B2-4

340/348 Kansas St

330 Kansas St

B2-8

B2-6

B2-3

B2-7

Kansas St

Former Olson Property

CV-1(R)

B2-2

CV-3

1521 E Grand Ave

CV-2(R)

B2-1

Former 1415 E Grand Ave

Washington St

E Grand Ave

Block 1

247 Kansas St

California St

B1-1

Kansas St

B1-2

SV-24

SV-5

B'

DSV-3

GW-2

GW-1

DSV-5

DSV-2

233 Kansas St

DSV-1

B

SV-6

B1-4

MW-7

B1-5

DSV-4

1401 E Franklin Ave

1413 E Franklin Ave

222 Kansas St

B1-3

E Franklin Ave

A

145 Kansas St

140 Kansas St

1330 E Franklin Ave

0 80 160 Feet

Beverly Hills

Los Angeles

Santa Monica

Inglewood

0 5 10 Miles

Legend

- Vertical Profile Data Point (Soil Vapor)
- Cross Section Line
- Former Building
- Subject Property

Figure 21
Soil Vapor Sample Locations
Infineon Facility and Adjacent Properties
El Segundo, California

Environmental Resources Management
www.erm.com

ERM

FILE: M:\Projects\0444392 Infineon Phase 2\Maps\Site Characterization Report\Figure 2 Soil Vapor Sample Locations.mxd | REVISED: 11/25/2019 | SCALE: 1:1,252 when printed at 11x17

Source: Esri - World Topoographic Map; NAD 1983 StatePlane California V FIPS 0405 Feet

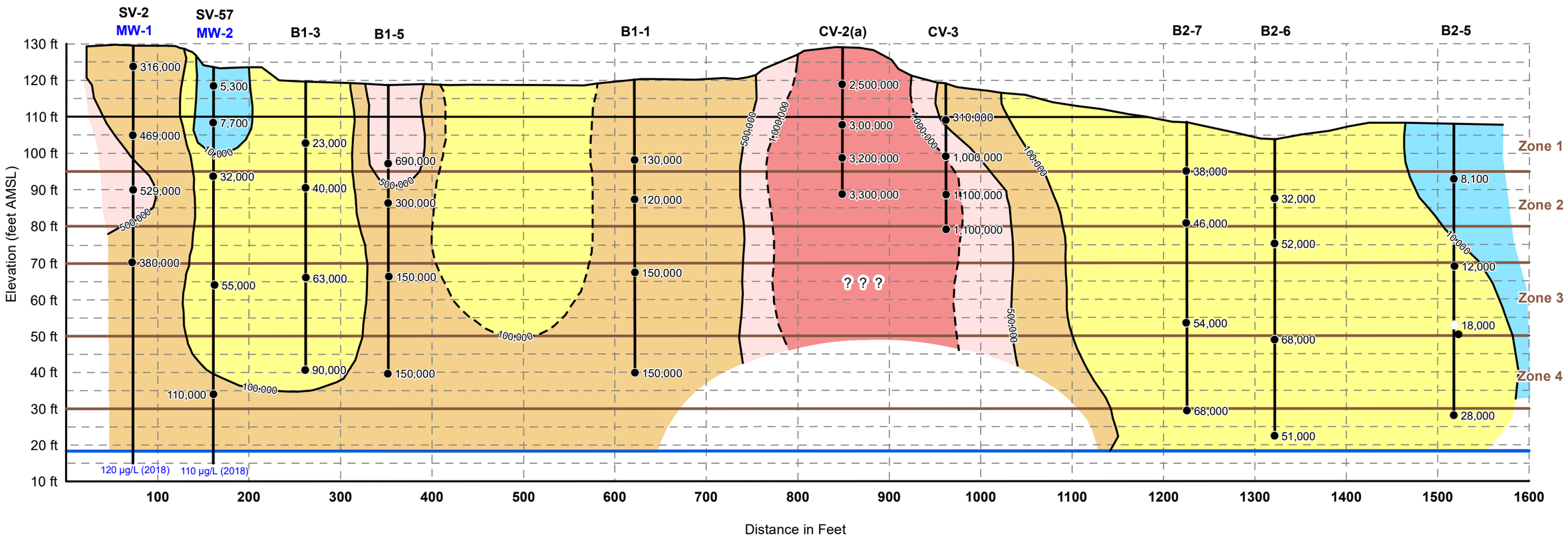
DRAWN BY: Jake Sullivan

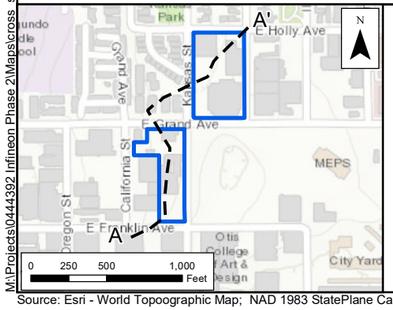
M:\Projects\0444392 Infineon Phase 2\Maps\cross_section_a.mxd REVISED: 11/25/2019 SCALE: 1:3,585 when printed at 11x17

A
South

A'
North

1330 E. Franklin Ave. | Block 1 | Former Olson Property | Block 2





Legend

- Soil Vapor Sample Point with PCE Concentration
- Boring Location
- Approximate Groundwater Elevation
- 120 µg/L PCE Concentration in Groundwater

Tetrachloroethene Concentration (Contour Dashed Where Inferred)

- < 10,000 µg/ m^3
- 10,000 - 100,000 µg/ m^3
- 100,000 - 500,000 µg/ m^3
- 500,000 - 1,000,000 µg/ m^3
- > 1,000,000 µg/ m^3

Notes:

Cross Section shown with 5x vertical exageration.
All soil vapor results in micrograms per cubic meter (µg/m^3).
All groundwater results in micrograms per liter (µg/L).
AMSL: above mean sea level.

Source: Esri - World Topoographic Map; NAD 1983 StatePlane California V FIPS 0405 Feet

Figure 22
Cross Section A-A': Tetrachloroethene Concentrations in Soil Vapor
Infineon Facility and Adjacent Properties
El Segundo, California

Environmental Resources Management
www.erm.com
ERM

DRAWN BY: Jake Sullivan

M:\Projects\0444392 Infineon Phase 2\Maps\cross_section_b_2.mxd, REVISED: 11/25/2019, SCALE: 1:1,080 when printed at 11x17

B West

B' East

1401 E, Franklin

Block 1

222 Kansas St.

SV-6 MW-7 | B1-5 | B1-2 | SV-24 GW-1 | DSV5 | DSV1 | DSV2 | SV5 GW-2 | DSV3

Elevation (feet AMSL)

130' 120' 110' 100' 90' 80' 70' 60' 50' 40' 30' 20'

100' 200' 300' 400' 500 600' 700' 800' 900' 1,000'

Distance In Feet

Zone 1

Zone 2

Zone 3

Zone 4

Approximate Groundwater Elevation

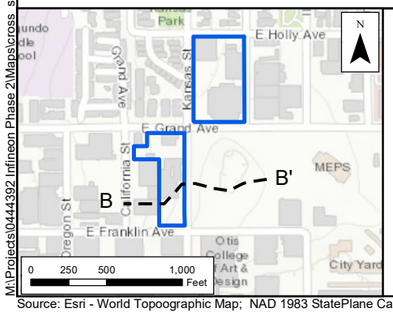
32,000
77,000
76,000
690,000
300,000
150,000
130,000
150,000
320,000
36,000
45,000
60,000
81,000
22
3,380
26,900
93,000
150,000
190,000
110,000
140,000
290,000
480,000
480,000
360,000
1,597,000
840,000
100,000
120,000
20,000
270,000

500,000
10,000
500,000
100,000
100,000
100,000

400 µg/L (2018)

782 µg/L (2012)

692 µg/L (2012)



Source: Esri - World Topoographic Map; NAD 1983 StatePlane California V FIPS 0405 Feet

Legend

- Soil Vapor Sample Point with PCE Concentration
- Boring Location
- Approximate Groundwater Elevation
- 120 µg/L PCE Concentration in Groundwater

Tetrachloroethene Concentrations

- < 10,000 µg/ m^3
- 10,000 - 100,000 µg/ m^3
- 100,000 - 500,000 µg/ m^3
- 500,000 - 1,000,000 µg/ m^3
- > 1,000,000 µg/ m^3

Notes:

Cross Section shown with 5x vertical exageration.
All soil vapor results in micrograms per cubic meter (µg/m^3).
All groundwater results in micrograms per liter (µg/L).
PCE: Tetrachloroethene.
AMSL: above mean sea level.

Figure 23
Cross Section B-B': Tetrachloroethene Concentrations in Soil Vapor
Infineon Facility and Adjacent Properties
El Segundo, California

Environmental Resources Management
www.erm.com
ERM

DRAWN BY: Tyler Harris

N

E Holly Ave

Kansas St

B2-4

B2-5
8,100

340/348 Kansas St

330 Kansas St

B2-8

B2-6
32,000

Block 2

B2-7
46,000

B2-3
10,000

Former Olson Property

B2-2
9,200

1521 E Grand Ave

Washington St

CV-1(R)
3,500,000
(1,300,000)

CV-3
1,000,000

CV-2(R)
3,600,000
(780,000)

Former 1415 E Grand Ave

B2-1
11,000

1,000,000

E Grand Ave

500,000

247 Kansas St

California St

B1-1
130,000

100,000

Block 1

Kansas St

10,000

SV-24
3,380

B1-2

GW-1

233 Kansas St

DSV-5

DSV-1

DSV-2

GW-2

DSV-3

SV-5
1,597,000

1,000,000

500,000

100,000

MW-7
76,000

SV-6

B1-5
690,000

B1-4

1401 E Franklin Ave

100,000

B1-3
23,000

1413 E Franklin Ave

DSV-4
34,000

222 Kansas St

E Franklin Ave

500,000

SV-57
7,700

SV-2/15/26

MW-4

MW-2

MW-1
469,000

145 Kansas St

140 Kansas St

1330 E Franklin Ave

0 80 160 Feet

Beverly Hills
Los Angeles
Santa Monica
10-Santa Monica Fwy
405
W Slauson Ave
Inglewood
42
110-Harbor Fwy
0 5 10 Miles

Legend

- Vertical Profile Data Point (Soil Vapor)
- Cross Section Line
- Zone 1 Soil Vapor Contours (95-110 ft amsl)
- Former Building
- Subject Property

Notes:
amsl: above mean sea level
Soil vapor isoconcentration contours represent PCE (µg/m^3)

Figure 24
Zone 1 Soil Vapor Contours
Infineon Facility and Adjacent Properties
El Segundo, California

Environmental Resources Management
www.erm.com
ERM

Source: Esri - World Topoographic Map; NAD 1983 StatePlane California V FIPS 0405 Feet

FILE: M:\Projects\0444392 Infineon Phase 2\Maps\Site Characterization Report\Figure 5 Zone 1 Soil Vapor Contours.mxd | REVISED: 11/25/2019 | SCALE: 1:1,252 when printed at 11x17

DRAWN BY: Tyler Harris

E Holly Ave

A'

B2-4

B2-5
8,100

10,000

340/348 Kansas St

330 Kansas St

B2-8
59,000

B2-6
32,000

Block 2

B2-7
46,000

B2-3

Former Olson Property

B2-2

CV-1(R)
4,200,000
(1,100,000)

CV-3
1,100,000

CV-2(R)
3,300,000
(890,000)

1,000,000

Former 1415 E Grand Ave

1521 E Grand Ave

Washington St

B2-1
21,000

E Grand Ave

500,000

100,000

10,000

247 Kansas St

B1-1
120,000

California St

Kansas St

Block 1

B1-2
45,000

SV-24
26,900

GW-1

DSV-5
93,000

DSV-1

DSV-2
480,000

GW-2

SV-5

B'

DSV-3
120,000

500,000

233 Kansas St

100,000

B1-4
49,000

MW-7

B

SV-6

B1-5

1401 E Franklin Ave

1413 E Franklin Ave

B1-3

DSV-4
190,000

222 Kansas St

100,000

E Franklin Ave

10,000

500,000

SV-57

SV-2/15/26

MW-4

MW-2

A

MW-1
529,000

1330 E Franklin Ave

145 Kansas St

140 Kansas St

0 80 160 Feet

N

Beverly Hills
Los Angeles
Santa Monica
10-Santa Monica Fwy
405
W Slauson Ave
Inglewood
42
D
Harbor Fwy-110

0 5 10 Miles

Legend

- Vertical Profile Data Point (Soil Vapor)
- Cross Section Line
- Zone 2 Soil Vapor Contours (80-95 ft amsl)
- Former Building
- Subject Property

Notes:
amsl: above mean sea level
Soil vapor isoconcentration contours represent PCE (µg/m^3)

Figure 25
Zone 2 Soil Vapor Contours
Infineon Facility and Adjacent Properties
El Segundo, California

Environmental Resources Management
www.erm.com
ERM

Source: Esri - World Topoographic Map; NAD 1983 StatePlane California V FIPS 0405 Feet

FILE: M:\Projects\0444392 Infineon Phase 2\Maps\Site Characterization Report\20191125\Figure 25 Zone 2 Soil Vapor Contours.mxd | REVISED: 11/25/2019 | SCALE: 1:1,252 when printed at 11x17

DRAWN BY: Tyler Harris

E Holly Ave

A'

B2-4
36,000

B2-5
28,000

340/348 Kansas St

330 Kansas St

Kansas St

B2-8
73,000

B2-6
68,000

Block 2

B2-3
29,000

B2-7
54,000

Former Olson Property

CV-1(R)

CV-3

CV-2(R)

500,000

100,000

B2-2
66,000

1521 E Grand Ave

Former 1415 E Grand Ave

B2-1
31,000

E Grand Ave

Washington St

247 Kansas St

California St

B1-1
150,000

Block 1

Kansas St

B1-2
60,000

SV-24

GW-1

DSV-2
480,000

SV-5

B'

DSV-3
20,000

GW-2

233 Kansas St

DSV-5
150,000

DSV-1
140,000

MW-7
130,000

B

SV-6

B1-5
150,000

B1-4
55,000

1401 E Franklin Ave

B1-3
63,000

1413 E Franklin Ave

DSV-4
22,000

222 Kansas St

E Franklin Ave

SV-57
55,000

SV-2/15/26

MW-4

MW-2

MW-1
380,000

A

1330 E Franklin Ave

145 Kansas St

140 Kansas St

0 80 160 Feet

N

Beverly Hills
Los Angeles
Santa Monica
10-Santa Monica Fwy
405
W Slauson Ave
Inglewood
42
D
Harbor Fwy-110
0 5 10 Miles

Legend

- Vertical Profile Data Point (Soil Vapor)
- Cross Section Line
- Zone 3 Soil Vapor Contours (50-70 ft amsl)
- Former Building
- Subject Property

Notes:
amsl: above mean sea level
Soil vapor isoconcentration contours represent PCE (µg/m^3)

Figure 26
Zone 3 Soil Vapor Contours
Infineon Facility and Adjacent Properties
El Segundo, California

Environmental Resources Management
www.erm.com
ERM

Source: Esri - World Topoographic Map; NAD 1983 StatePlane California V FIPS 0405 Feet

FILE: M:\Projects\0444392 Infineon Phase 2\Maps\Site Characterization Report\20191125\Figure 26 Zone 3 Soil Vapor Contours.mxd | REVISED: 11/25/2019 | SCALE: 1:1,252 when printed at 11x17

DRAWN BY: Tyler Harris

N

E Holly Ave

A'

B2-4
34,000

B2-5
28,000

340/348 Kansas St

330 Kansas St

Kansas St

B2-8
57,000

B2-6
51,000

Block 2

B2-7
62,000

B2-3

Former Olson Property

CV-1(R)

CV-3

500,000

B2-2
57,000

10,000

1521 E Grand Ave

Washington St

CV-2(R)

Former 1415 E Grand Ave

B2-1

500,000

E Grand Ave

100,000

247 Kansas St

California St

B1-1
150,000

Block 1

Kansas St

SV-24

B1-2
81,000

233 Kansas St

GW-1

DSV-2
360,000

SV-5

B'

GW-2

DSV-3
270,000

DSV-5
190,000

DSV-1
190,000

100,000

MW-7
320,000

B1-5
150,000

B1-4
75,000

B

SV-6

1401 E Franklin Ave

B1-3
90,000

1413 E Franklin Ave

DSV-4
210,000

222 Kansas St

10,000

SV-57

MW-2
110,000

E Franklin Ave

SV-2/15/26

MW-4

MW-1

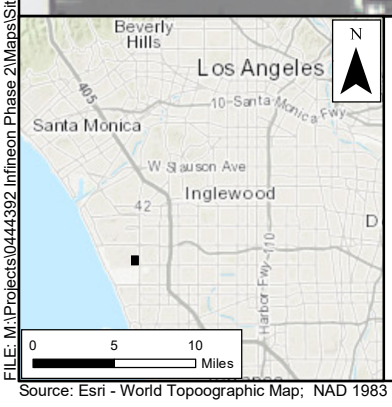
A

1330 E Franklin Ave

145 Kansas St

140 Kansas St

0 80 160 Feet



Legend

- Vertical Profile Data Point (Soil Vapor)
- Cross Section Line
- Zone 4 Soil Vapor Contours (30-50 ft amsl)
- Former Building
- Subject Property

Notes:
amsl: above mean sea level
Soil vapor isoconcentration contours represent PCE (µg/m^3)

Figure 27
Zone 4 Soil Vapor Contours
Infineon Facility and Adjacent Properties
El Segundo, California

Environmental Resources Management
www.erm.com
ERM

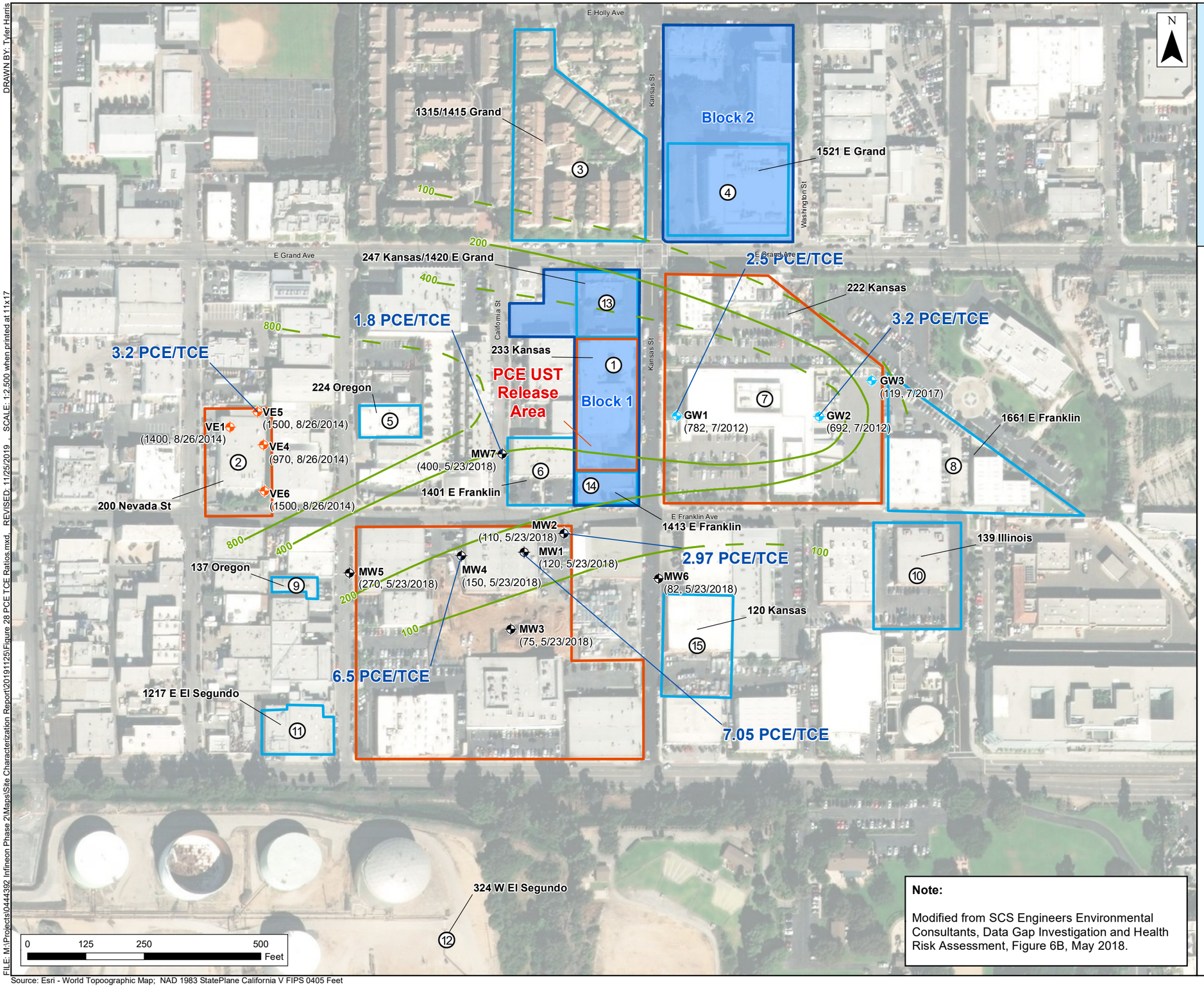
Source: Esri - World Topoographic Map; NAD 1983 StatePlane California V FIPS 0405 Feet

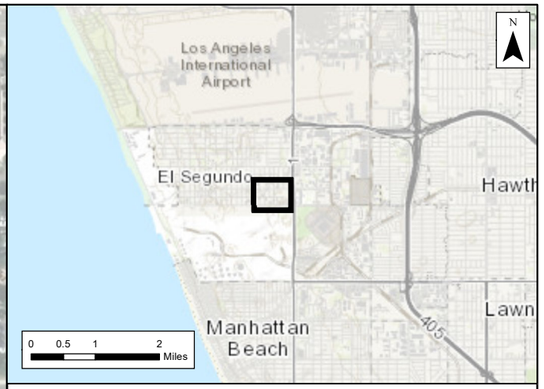
FILE: M:\Projects\0444392 Infineon Phase 2\Maps\Site Characterization Report\Figure 8 Zone 4 Soil Vapor Contours.mxd | REVISED: 11/25/2019 | SCALE: 1:1,252 when printed at 11x17

DRAWN BY: Tyler Harris

REVISED: 11/25/2019 SCALE: 1:2,500 when printed at 11x17

FILE: M:\Projects\0444392 Infineon Phase 2\Maps\Site Characterization Report\20191125\Figure 28 PCE TCE Ratios.mxd





Legend

- Groundwater Monitoring Well
- Offsite Groundwater Well (GSA Engineering, 08/11/2017)
- Offsite Groundwater Well (SCS Engineers, 07/2012)
- PCE in Groundwater Contour
- Infineon Blocks 1 and 2
- Known PCE Contamination Source
- Potential PCE Contamination Source
- (1) International Rectifier (IR) - 233 Kansas (EDR, GeoTracker)
- (2) Radiant (Former Dry Cleaners and IR Site) - 200 Nevada St (EDR, EVIROSTOR)
- (3) Current Condominiums (Former Manufacturer) - 1415 E Grand (City of El Segundo Fire Dept) and Deutsch Fastener - 1315 E Grand (SCAQMD Finds)
- (4) IR - 1521 E Grand (SCAQMD Finds)
- (5) Tashken Auto Service - 224 Oregon (SCAQMD Finds)
- (6) Herbert Aircraft - 1401 E Franklin
- (7) Former IR - 222 Kansas (SCAQMD Finds)
- (8) Buss Systems, Inc. - 1661 E Franklin (SCAQMD Finds)
- (9) Expo Center - 137 Oregon (SCAQMD Finds)
- (10) SRECO Flexible Inc. - 139 Illinois (SCAQMD Finds)
- (11) Alpha W - 1217 E El Segundo (SCAQMD Finds, DTSC HWTS)
- (12) Chevron - 324 W El Segundo (EDR)
- (13) Former IR - 247 Kansas/1420 E Grand (EDR, GeoTracker)
- (14) Former IR - 1413 E Franklin (EDR, GeoTracker)
- (15) Dallons Labs - 120 Kansas (Internet)

Note:

Modified from SCS Engineers Environmental Consultants, Data Gap Investigation and Health Risk Assessment, Figure 6B, May 2018.

Figure 28
Ratio of PCE to TCE in Groundwater Samples
Vicinity of Infineon Block 1 and Block 2
El Segundo, California

Environmental Resources Management
www.erm.com
ERM

Source: Esri - World Topoographic Map; NAD 1983 StatePlane California V FIPS 0405 Feet

DRAWN BY: Tyler Harris

E Holly Ave

Block 2

B2-5

B2-4

340/348 Kansas St

330 Kansas St

B2-8

B2-6

B2-3

B2-7

Former Olson Property

B2-2

1521 E Grand Ave

Kansas St

Washington St

B2-1

Former 1415 E Grand Ave

E Grand Ave

Block 1

247 Kansas St

California St

B1-1

B1-2

233 Kansas St

Kansas St

B1-4

B1-5

1401 E Franklin Ave

1413 E Franklin Ave

222 Kansas St

B1-3

E Franklin Ave

145 Kansas St

140 Kansas St

1330 E Franklin Ave

0 80 160 Feet

N

Beverly Hills

Los Angeles

Santa Monica

Inglewood

0 5 10 Miles

Legend

- Vertical Profile Data Point (Soil Vapor)
- VLEACH Tier 2 Polygons
- Subject Property

Figure 29
VLEACH Tier 2 Polygons
Infineon Block 1 and Block 2
El Segundo, California

Environmental Resources Management
www.erm.com
ERM

FILE: M:\Projects\0444392 Infineon Phase 2\Maps\Site Characterization Report\20191125\Figure 29 VLEACH Polygons.mxd | REVISED: 11/25/2019 | SCALE: 1:1,252 when printed at 11x17

Source: Esri - World Topoographic Map; NAD 1983 StatePlane California V FIPS 0405 Feet

TABLES

Table 1
Metals and pH in Soil
Location of 1995 Acidic Solution Release
233 Kansas Street Building
Infineon Block 2
El Segundo, California

Sample ID	Date	Location Relative to Cavity[1]	Sample Depth (ft bgs)	pH	Detected Metals (mg/kg)				
					Barium	Copper	Lead	Vanadium	Zinc
					USEPA RSL/DTSC Note 3 SL				
					220,000/NE	*47,000/NE*	*800/320*	*5,800/NE*	*350,000/NE*
GTI 1995									
WS-1	6/19/1995	Sidewall	5.0	2.4					
WN-1	6/19/1995	Sidewall	5.0	2.6					
FS-1	6/19/1995	Bottom	8.5	2.6					
FX-1	6/19/1995	Below Bottom	9.0	2.6					
FX-2	6/19/1995	Below Bottom	9.0		490	<1.0	4.3	<1.0	25
Bottom-10	7/26/1995	Below Bottom	10.0	2.9					
Bottom-13.25	7/26/1995	Below Bottom	13.25	4.3					
Environ 2000									
SB-1	5/8/2000	South[2]	5	4.2					
	5/8/2000	South[2]	10	3.6					
	5/8/2000	South[2]	13	3.9					
	5/8/2000	South[2]	14	4.0					
SB-2	5/8/2000	Northeast[2]	5	4.9					
	5/8/2000	Northeast[2]	10	3.9					
	5/8/2000	Northeast[2]	15	3.6	19	3.3	<4.0	3.7	<10
SB-3	5/8/2000	Northwest[2]	5	4.6					
	5/8/2000	Northwest[2]	10	4.1					
	5/8/2000	Northwest[2]	15	4.5					
SB-4	5/8/2000	Below Bottom	15	4.1	4.3	<1.0	<2.0	<1.0	<5.0
	5/8/2000	Below Bottom	20	3.7					
	5/8/2000	Below Bottom	25	4.0	1,700	<1.0	19	<1.0	<5.0
ERM 2017									
SB-11-0-1	3/14/2017	South	1[3]		41.5	5.58	7.39	15.3	2.1
SB-12-0-1	3/14/2017	East	1[3]		34.5	5.43	18.1	16.3	41.8
SB-13-0-1	3/14/2017	North	1[3]		44.3	3.7	2.08	14.6	10.3

Notes:

Approximate sample locations are shown on Figure 1

Blank cell = Sample was not analyzed for the respective constituent

1 = Cavity in soil below 1995 pipeline break measured 11.5 inches in diameter immediately below pipeline break, 8.5 feet deep and 3.5 inches in diameter at bottom (GTI, Environmental Assessment Report Waste Drain Line, International Rectifier Corporation, 233 Kansas Street, El Segundo, California, August 23, 1995)

2 = 10 to 15 ft from cavity. (Environ, Results of Subsurface Investigation Previous Waste Line Acid Release 233 Kansas Street, El Segundo, California, August 4, 2000)

3 = First soil below concrete floor.

Abbreviations:

bgs = Below ground surface

DTSC = Department of Toxic Substances Control

ft = Feet

mg/kg = Milligrams per kilogram

NE = Not established

pH = Hydrogen potential

RSL = Regional Screening Level (2019)

SL = Screening level (2019)

USEPA = United States Environmental Protection Agency

Table 2
Summary of Metals in Soil Samples - Block 1
Infineon Facility
El Segundo, California

		Sample Date	14-Mar-17	14-Mar-17	14-Mar-17	14-Mar-17	14-Mar-17	14-Mar-17	14-Mar-17	14-Mar-17	14-Mar-17	14-Mar-17	14-Mar-17	14-Mar-17	14-Mar-17	14-Mar-17
		Sample ID	SB-1-0-1	SB-2-1-2	SB-3-0-1	SB-4-0-1	SB-5-0-1	SB-6-0-1	SB-7-0-1	SB-9-0-1	SB-10-1-2	SB-11-0-1	SB-12-0-1	SB-13-0-1	SB-19-0-1	SB-20-0-1
		Sample Depth (feet bgs)	0 - 1	1 - 2	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	1 - 2	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1
	Screening Levels (mg/kg)															
	DTSC Note 3 SL (Commercial)	USEPA RSL (Commercial)	Results (mg/kg)													
Antimony	--	*470*	*< 0.714*	*< 0.714*	*< 0.728*	*< 0.739*	*< 0.718*	*< 0.728*	*< 0.721*	*< 0.721*	*< 0.735*	*< 0.739*	*< 0.728*	*< 0.721*	*< 0.732*	*< 0.725*
Arsenic	*0.36 (12*)*	--	**0.828**	**0.949**	**0.814**	*< 0.739*	**0.783**	*< 0.728*	**0.956**	**1.17**	**1.31**	*< 0.739*	**0.991**	**1.04**	*< 0.732*	*< 0.725*
Barium	--	*220,000*	**36.6**	**24.7**	**27.1**	**26.1**	**40.7**	**48.9**	**31.0**	**59.0**	**40.3**	**41.5**	**34.5**	**44.3**	**15.8**	**20.3**
Beryllium	*230*	--	*< 0.238*	*< 0.238*	*< 0.243*	*< 0.246*	*< 0.239*	*< 0.243*	*< 0.240*	*< 0.240*	*< 0.245*	*< 0.246*	*< 0.243*	*< 0.240*	*< 0.244*	*< 0.242*
Cadmium	*780*	--	*< 0.476*	*< 0.476*	**0.783**	**0.672**	*< 0.478*	**0.795**	**0.557**	**1.20**	*< 0.490*	*< 0.493*	*< 0.485*	*< 0.481*	**5.84**	*< 0.483*
Chromium	--	*1,800,000.00*	**8.73**	**6.82**	**10.2**	**8.68**	**10.1**	**8.34**	**8.42**	**10.4**	**12.5**	**9.31**	**10.2**	**9.55**	**11.6**	**9.83**
Chromium VI	*6.2*	--	NA	NA	NA	NA	NA	NA	NA	NA	*< 0.80*	NA	NA	NA	*< 0.80*	NA
Cobalt	--	*350*	**3.17**	**2.27**	**6.25**	**3.08**	**4.83**	**14.5**	**11.1**	**9.33**	**4.29**	**3.27**	**3.34**	**3.52**	**4.65**	**2.45**
Copper	--	*47,000*	**3.39**	**2.68**	**10.1**	**5.79**	**5.29**	**13.2**	**9.63**	**12.0**	**4.25**	**5.58**	**5.43**	**3.70**	**17.0**	**2.38**
Lead	*320*	--	**2.15**	**3.53**	**32.1**	**30.3**	**2.28**	**31.7**	**17.4**	**65.0**	**3.07**	**7.39**	**18.1**	**2.08**	**3.33**	**2.73**
Mercury	*4.4*	--	*< 0.0820*	*< 0.0806*	*< 0.0794*	*< 0.0794*	*< 0.0820*	*< 0.0794*	*< 0.0806*	*< 0.0806*	*< 0.0794*	*< 0.0820*	*< 0.0794*	*< 0.0806*	*< 0.0820*	*< 0.0806*
Molybdenum	--	*5,800*	*< 0.238*	*< 0.238*	*< 0.243*	*< 0.246*	*< 0.239*	*< 0.243*	*< 0.240*	*< 0.240*	*< 0.245*	*< 0.246*	*< 0.243*	*< 0.240*	*< 0.244*	*< 0.242*
Nickel	*11,000*	--	**3.71**	**2.79**	**4.30**	**4.16**	**5.11**	**4.50**	**4.45**	**5.80**	**5.41**	**4.46**	**4.30**	**4.34**	**8.94**	**3.65**
Selenium	--	*5,800*	**0.778**	*< 0.714*	**0.947**	**0.836**	*< 0.718*	**1.01**	**0.751**	**1.12**	**0.793**	*< 0.739*	**1.02**	**0.854**	**0.736**	*< 0.725*
Silver	--	*5,800*	*< 0.238*	*< 0.238*	*< 0.243*	*< 0.246*	*< 0.239*	*< 0.243*	*< 0.240*	*< 0.240*	*< 0.245*	*< 0.246*	*< 0.243*	*< 0.240*	*< 0.244*	*< 0.242*
Thallium	--	*12*	*< 0.714*	*< 0.714*	*< 0.728*	*< 0.739*	*< 0.718*	*< 0.728*	*< 0.721*	*< 0.721*	*< 0.735*	*< 0.739*	*< 0.728*	*< 0.721*	*< 0.732*	*< 0.725*
Vanadium	--	*5,800*	**13.0**	**12.5**	**13.9**	**15.3**	**15.4**	**17.9**	**14.2**	**22.9**	**17.0**	**15.3**	**16.3**	**14.6**	**14.7**	**13.1**
Zinc	--	*350,000*	**10.0**	**9.45**	**94.1**	**62.0**	**12.8**	**60.1**	**40.0**	**71.4**	**13.4**	**21.0**	**41.8**	**10.3**	**237**	**12.4J+**

Notes:
< = Metal not detected at concentrations at or above the designated laboratory reporting limit.
***Bold** = Detection*
-- = Not established or not required as DTSC value available.
J+ = Estimated detection with high bias
** DTSC 2008 background value for Southern California (12 mg/kg)*

Abbreviations:
bgs = Below ground surface
DTSC = Department of Toxic Substances Control Note 3, 2019
mg/kg = Milligrams per kilogram
NA = Not analyzed
RSL = Regional Screening Level
SL = Screening Level
USEPA = United States Environmental Protection Agency Regional Screening Levels, 2019

Table 3
Summary of TPH in Soil Samples - Block 1
Infineon Facility
El Segundo, California

Sample Date			14-Mar-17	14-Mar-17	14-Mar-17	14-Mar-17	14-Mar-17	14-Mar-17	14-Mar-17	14-Mar-17	14-Mar-17	14-Mar-17	14-Mar-17	14-Mar-17	14-Mar-17	14-Mar-17
Sample ID			SB-1-0-1	SB-2-1-2	SB-3-0-1*	SB-4-0-1	SB-5-0-1	SB-6-0-1	SB-7-0-1	SB-9-0-1	SB-10-1-2	SB-11-0-1	SB-12-0-1	SB-13-0-1	SB-19-0-1	SB-20-0-1
Sample Depth (feet bgs)			0 - 1	1 - 2	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	1 - 2	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1
	SFRWQCB ESL* (mg/kg)	LARWQCB SSL** (mg/kg)	Results (mg/kg)													
C25-C28	*180,000*	*10,000*	*< 5.0*	*< 4.9*	**28**	**13**	*< 4.9*	*< 5.0*	*< 5.0*	**18**	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.0*	*< 4.9*	*< 4.9*
C29-C32	*180,000*	*10,000*	*< 5.0*	*< 4.9*	**44**	**23**	*< 4.9*	*< 5.0*	**6.4**	**30**	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.0*	*< 4.9*	*< 4.9*
C33-C36	*180,000*	*10,000*	*< 5.0*	*< 4.9*	**26**	**16**	*< 4.9*	*< 5.0*	*< 5.0*	**19**	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.0*	*< 4.9*	*< 4.9*
C37-C40	*180,000*	*10,000*	*< 5.0*	*< 4.9*	*< 25*	**8.6**	*< 4.9*	*< 5.0*	*< 5.0*	**12**	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.0*	*< 4.9*	*< 4.9*
C6-C44-TOTAL	*1,200*	*500*	*< 5.0*	*< 4.9*	**120**	**65**	*< 4.9*	**12**	**16**	**88**	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.0*	*< 4.9*	*< 4.9*

Notes:
< = Compound not detected at concentrations at or above the indicated laboratory reporting limit.
***Bold** = TPH compounds detected above the laboratory reporting limits.*
**SFRWQCB ESL for motor oil for C25-C40, ESL for most conservative TPH product for C6-C44 (diesel); ESLs selected as per DTSC 2015.*
***LARWQCB Site Assessment and Cleanup Guidebook Table 4-1: Maximum Soil Screening Levels for TPH and BTEX above Drinking Water Aquifers, May 1996. For C6-C44, most conservative value selected.*

Abbreviations:
bgs = Below ground surface
BTEX = Benzene, toluene, ethylbenzene, and total xylenes
C = Carbon atom, shown above with number in molecular chain of a particular petroleum hydrocarbon compound.
Department of Toxic Substance Control
ESL = Environmental screening level
LARWQCB = Los Angeles Regional Water Quality Control Board
SFRWQCB = San Francisco Regional Water Quality Control Board
mg/kg = Milligrams per kilogram
SSL = Soil screening Level
TPH = Total petroleum hydrocarbon

Table 4
Summary of Metals in Soil Samples - Block 2
Infineon Facility
El Segundo, California

		Sample Date	15-Mar-17	15-Mar-17	15-Mar-17	15-Mar-17	15-Mar-17	15-Mar-17	15-Mar-17	15-Mar-17
		Sample ID	SBB2-1-0-1	SBB2-4-0-1	SBB2-5-3-4	SBB2-9-3-4	SBB2-10-2-3	SBB2-11-0-2	SBB2-12-7-8	SBB2-13-1-2
		Sample Depth (feet bgs)	0 - 1	0 - 1	3 - 4	3 - 4	2 - 3	0 - 2	7 - 8	1 - 2
	Screening Levels (mg/kg)									
	DTSC Note 3 SL (Commercial)	USEPA RSL (Commercial)	Results (mg/kg)							
Antimony	--	*470*	*< 0.735*	*< 0.721*	*< 0.728*	*< 0.761*	*< 0.739*	*< 0.765*	*< 0.765*	*< 0.761*
Arsenic	*0.36 (12*)*	--	**1.24**	**1.19**	**2.61**	*< 0.761*	*< 0.739*	**1.84**	**2.07**	**1.06**
Barium	--	*220,000*	**17.4**	**20.7**	**66.9**	**71.7**	**38.6**	**27.1**	**33.5**	**46.2**
Beryllium	*230*	--	*< 0.245*	*< 0.240*	*< 0.243*	**0.278**	*< 0.246*	*< 0.255*	**0.264**	**0.272**
Cadmium	*780*	--	*< 0.490*	*< 0.481*	**2.61**	*< 0.508*	*< 0.493*	*< 0.510*	*< 0.510*	*< 0.508*
Chromium	--	*1800000*	**15.2**	**13.9**	**17.8**	**15.3**	**13.2**	**25.6**	**27.6**	**14.5**
Chromium VI	*6.2*	--	NA	NA	NA	NA	NA	**1.1**	**1.1**	NA
Cobalt	--	*350*	**3.54**	**2.99**	**5.93**	**5.42**	**3.77**	**4.80**	**5.40**	**5.64**
Copper	--	*47,000*	**2.73**	**4.21**	**17.9**	**6.17**	**3.86**	**4.16**	**4.51**	**4.77**
Lead	*320*	--	**1.55**	**1.52**	**65.5**	**3.16**	**2.72**	**2.67**	**2.79**	**2.95**
Mercury	*4.4*	--	*< 0.0806*	*< 0.0820*	*< 0.0794*	*< 0.0833*	*< 0.0794*	*< 0.0877*	*< 0.0833*	**0.441**
Molybdenum	--	*5,800*	*< 0.245*	**0.343**	**0.463**	*< 0.254*	*< 0.246*	*< 0.255*	*< 0.255*	*< 0.254*
Nickel	*11,000*	--	**6.53**	**6.45**	**8.84**	**8.39**	**5.51**	**9.18**	**9.22**	**8.01**
Selenium	--	*5,800*	*< 0.735*	*< 0.721*	**3.98**	*< 0.761*	*< 0.739*	*< 0.765*	*< 0.765*	*< 0.761*
Silver	--	*5,800*	*< 0.245*	*< 0.240*	*< 0.243*	*< 0.254*	*< 0.246*	*< 0.255*	*< 0.255*	*< 0.254*
Thallium	--	*12*	*< 0.735*	*< 0.721*	*< 0.728*	*< 0.761*	*< 0.739*	*< 0.765*	*< 0.765*	*< 0.761*
Vanadium	--	*5,800*	**14.5**	**15.0**	**29.1**	**25.6**	**21.9**	**25.9**	**25.6**	**24.3**
Zinc	--	*350,000*	**8.29**	**9.20**	**66.3**	**19.5**	**13.8**	**13.2**	**15.3**	**17.3**

Notes:
< = Metal not detected at concentrations at or above the designated laboratory reporting limit
***Bold** = Metal compounds detected above the laboratory reporting limits.*
-- = Not established or not required as DTSC value available
** DTSC 2008 background value for Southern California (12 mg/kg)*

Abbreviations:
bgs = Below ground surface
DTSC = Department of Toxic Substance Control
mg/kg = Milligrams per kilogram
RSL = Regional Screening Level
SL = Screening Level
USEPA = United States Environmental Protection Agency

Table 5
Summary of TPH in Soil Samples - Block 2
Infineon Facility
El Segundo, California

Sample Date			15-Mar-17	15-Mar-17	15-Mar-17	15-Mar-17	15-Mar-17	15-Mar-17	15-Mar-17	15-Mar-17
Sample ID			SBB2-1-0-1	SBB2-4-0-1	SBB2-5-3-4	SBB2-9-3-4	SBB2-10-2-3	SBB2-11-0-2	SBB2-12-7-8	SBB2-13-1-2
Sample Depth (feet bgs)			0 - 1	0 - 1	3 - 4	3 - 4	2 - 3	0 - 2	7 - 8	1 - 2
	SFRWQCB ESL* (mg/kg)	LARWQCB SSL** (mg/kg)	Results (mg/kg)							
C19-C20	*180,000*	*1,000*	*< 5.0*	*< 5.0*	**15**	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.1*	*< 5.1*
C21-C22	*180,000*	*1,000*	*< 5.0*	*< 5.0*	**11**	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.1*	*< 5.1*
C23-C24	*180,000*	*10,000*	*< 5.0*	*< 5.0*	**14**	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.1*	*< 5.1*
C25-C28	*180,000*	*10,000*	*< 5.0*	*< 5.0*	**36**	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.1*	*< 5.1*
C29-C32	*180,000*	*10,000*	*< 5.0*	*< 5.0*	**52**	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.1*	*< 5.1*
C33-C36	*180,000*	*10,000*	*< 5.0*	*< 5.0*	**33**	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.1*	*< 5.1*
C37-C40	*180,000*	*10,000*	*< 5.0*	*< 5.0*	**16**	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.1*	*< 5.1*
C6-C44-TOTAL	*1,200*	*500*	*< 5.0*	*< 5.0*	**180**	*< 5.1*	*< 4.9*	**12**	*< 5.1*	*< 5.1*

Notes:
< = Compound not detected at concentration above indicated laboratory reporting limit
***Bold** = TPH compounds detected above the laboratory reporting limit are shown*
**SFRWQCB ESL for motor oil for C25-C40; ESL for most conservative TPH product for C6-C44 (diesel); ESLs selected as per DTSC 2015. DTSC PEA Guidance Manual (2015) recommends the usage of the SFRWQCB ESLs as they are derived for risk based analysis*
***LARWQCB Site Assessment and Cleanup Guidebook Table 4-1: Maximum Soil Screening Levels for TPH and BTEX above Drinking Water Aquifers, May 1996. For C6-C44, most conservative value selected.*

Abbreviations:
bgs = Below ground surface
BTEX = Benzene, toluene, ethylbenzene, and total xylenes
C = Carbon atom, shown above with number in molecular chain of a particular petroleum hydrocarbon compound.
DTSC = Department of Toxic Services Control
ESL = Environmental screening level
LARWQCB = Los Angeles Regional Water Quality Control Board
PEA = Preliminary Endangerment Assessment
SFRWQCB = San Francisco Regional Water Quality Control Board
mg/kg = Milligrams per kilogram
SSL = Soil screening Level
TPH = Total petroleum hydrocarbon

Table 6
Summary of VOCs in Soil Samples - Block 2
Infineon Facility
El Segundo, California

Sample Date			15-Mar-17	15-Mar-17	15-Mar-17	15-Mar-17	15-Mar-17	15-Mar-17	15-Mar-17	15-Mar-17
Sample ID			SBB2-1-0-1	SBB2-4-0-1	SBB2-5-3-4	SBB2-9-3-4	SBB2-10-2-3	SBB2-11-0-2	SBB2-12-7-8	SBB2-13-1-2
Sample Depth (feet bgs)			0 - 1	0 - 1	3 - 4	3 - 4	2 - 3	0 - 2	7 - 8	1 - 2
	Screening Level (µg/kg)									
	SL (Commercial)	USEPA RSL (Commercial)	Results (µg/kg)							
Detected VOC										
Tetrachloroethene	*2,700*	*100,000*	*< 5.2*	*< 5.2*	**21**	*< 5.1*	*< 5.0*	*< 5.2*	*< 4.8*	*< 5.1*

Notes:
< = Compound not detected at concentrationsabove the laboratory reporting detection limit.The laboratory reporting detection limit is shown.
***Bold** = Compound was detected above the laboratory reporting detection limit.*

Abbreviations:
µg/kg = Micrograms per kilogram
bgs = Below ground surface
DTSC = Department of Toxic Substance Control
RSL = Regional Screening Level
SL = Screening Level
USEPA = United States Environmental Protection Agency
VOC = Volatile organic compound

Table 7
Summary of Detected VOCs in Soil Samples - Block 1
Infineon Facility
El Segundo, California

				Analytes (µg/kg)	
Soil Boring	Sample Identification	Sample Date	Sample Depth (feet bgs)	1,2-Dichlorobenzene	Tetrachloroethene
B1-1	B1-1-10	19-Mar-18	10	*< 1.1*	*< 1.1*
	B1-1-22	19-Mar-18	22	*< 1.1*	*< 1.1*
	B1-1-33	19-Mar-18	33	*< 1.0*	*< 1.0*
	B1-1-53	19-Mar-18	53	*< 1.1*	**1.3**
	B1-1-80	19-Mar-18	80	*< 1.1*	*< 1.1*
B1-2	B1-2-6	23-Mar-18	6	*< 0.97*	*< 0.97*
	B1-2-25	23-Mar-18	25	*< 0.89*	**1.9**
	B1-2-32	23-Mar-18	32	*< 1.1*	*< 1.1*
	B1-2-49	23-Mar-18	49	*< 1.1*	*< 1.1*
	B1-2-80	23-Mar-18	80	*< 1.1*	*< 1.1*
B1-3	B1-3-4	21-Mar-18	4	*< 0.97*	*< 0.97*
	B1-3-17	21-Mar-18	17	*< 1.0*	*< 1.0*
	B1-3-29	21-Mar-18	29	*< 0.98*	*< 0.98*
	B1-3-54	21-Mar-18	54	*< 1.1*	**1.9**
	B1-3-80	21-Mar-18	80	*< 1.2*	*< 1.2*
B1-4	B1-4-13	22-Mar-18	13	*< 0.96*	*< 0.96*
	B1-4-22	22-Mar-18	22	*< 0.97*	*< 0.97*
	B1-4-32	22-Mar-18	32	*< 1.0*	*< 1.0*
	B1-4-48	22-Mar-18	48	*< 1.1*	*< 1.1*
	B1-4-80	22-Mar-18	80	*< 1.1*	*< 1.1*
B1-5	B1-5-10	20-Mar-18	10	*< 0.92*	**30**
	B1-5-22	20-Mar-18	22	*< 0.93*	**40**
	B1-5-33	20-Mar-18	33	**5.7**	**47**
	B1-5-53	20-Mar-18	53	*< 1.1*	**4.5**
	B1-5-80	20-Mar-18	80	*< 1.1*	**2.4**

Notes:
< = Compound not detected. Reportable detection limit shown.
***Bold** = Concentrations above the Reportable Detection Limit.*
SW8260B analyses performed by Calscience Environmental Laboratories, Inc.
Tetrachloroethene Commercial Screening Level (µg/kg): 2,700 (DTSC Note 3 SL); 100,000 (USEPA RSL)
1,2-Dichlorobenzene Commercial Screening Levels (µg/kg): 9,300,000 (USEPA RSL); Not established (DTSC Note 3 SL)

Abbreviations:
µg/kg = Micrograms per kilogram
DTSC = Department of Toxic Substances Control
RSL = Regional screening level
SL = Screening level
USEPA = United States Environmental Protection Agency
VOC = Volatile organic compound

Table 8
Derivation of SSLs for PCE - Block 1
Infineon Facility
El Segundo, California

Chemical	Drinking Water MCL (µg/l)	Soil Sample Depth (ft)	Depth from Sample to Groundwater (D) (ft)	Gravel Interval (Tgr) (ft)	Sand Interval (Tsa) (ft)	Silt Interval (Tsi) (ft)	Clay Interval (Tcl) (ft)	Attenuation Factor (AF_{MAX})	AF modified for groundwater depth (AF_D)	AF_D modified for lithology (AF_T)	Soil Screening Levels (SSLs) (µg/kg)
PCE	5	10 or less	90 or more	0	90	0	0	729.2	371.2	37.1	**186**
PCE	5	22	78	0	78	0	0	729.2	299.6	30.0	**150**
PCE	5	33	67	0	67	0	0	729.2	234.0	23.4	**117**
PCE	5	53	47	0	47	0	0	729.2	114.7	11.5	**57**
PCE	5	80	20	0	20	0	0	729.2	37.0	3.7	**18**

Abbreviations:
µg/kg = Micrograms per kilogram
µg/l = Micrograms per liter
AF = Attenuation factor
ft = Feet
g/ml = Grams per milliliter
MCL = California MCL (Maximum Contaminant Level)
ml/g = Milliliters per gram
PCE = Tetrachloroethene
SSL = Soil screening level concentrations (µg/kg)

Assumptions Used:

P_b =	2.27	: Soil Bulk Density (g/ml)
q_w =	0.031	: Soil Water Content by volume
f_{oc} =	0.015	: Soil Organic Carbon Content
n =	0.2	: Soil Porosity
K_{oc} =	660	: Organic Carbon Partition coefficient for PCE (ml/g)
K_H =	0.6	: Henry's Law constant for Benzene

Legend:
Tgr = Total thickness of gravel layer within D (feet)
Tsa = Total thickness of sand layer within D (feet)
Tsi = Total thickness of silt layer within D (feet)
Tcl = Total thickness of clay layer within D (feet)
$AF = 1 + (P_b / q_w) \times f_{oc} \times K_{oc} + (n - q_w) \times K_H / qw$
$AF_D = D \times (0.1 \times AF - 1)/40 + 1$
$AF_T = (AF_D / D) \times (Tgr / 20 + Tsa / 10 + Tsi / 5 + Tcl)$

Where:
AF_T *= Attenuation factor with total modification for distance to groundwater and lithology.*
AF_D *= Attenuation factor as a function of AF and interval between soil sample and groundwater.*
D = Distance from groundwater to soil sample of interest (feet).

Table 9
Summary of VOCs in Soil Samples - Block 2
Infineon Facility
El Segundo, California

				Analytes (µg/kg)	
Soil Boring	Sample Identification	Sample Date	Sample Depth (feet bgs)	Tetrachloroethene	Trichloroethene
B2-1	B2-1-6	29-Mar-18	6	*< 0.96*	*< 1.9*
	B2-1-18	29-Mar-18	18	*< 0.96*	*< 1.9*
	B2-1-42	29-Mar-18	42	*< 1.1*	*< 2.2*
	B2-1-52	29-Mar-18	52	*< 1.1*	*< 2.2*
	B2-1-80	29-Mar-18	80	*< 1.1*	*< 2.2*
B2-2	B2-2-7	12-Mar-18	7	**1.3**	*< 1.7*
	B2-2-19	12-Mar-18	19	*< 1.2*	*< 2.4*
	B2-2-46	12-Mar-18	46	*< 1.0*	*< 2.1*
	B2-2-65	12-Mar-18	65	**1.7**	*< 2.1*
	B2-2-80	12-Mar-18	80	**1.7**	*< 2.4*
B2-3	B2-3-5	13-Mar-18	5	**4.9**	**2.1**
	B2-3-17	13-Mar-18	17	*< 1.0*	*< 2.0*
	B2-3-29	13-Mar-18	29	*< 1.0*	*< 2.1*
	B2-3-54	13-Mar-18	54	*< 1.1*	*< 2.2*
B2-4	B2-4-5	28-Mar-18	5	*< 0.79*	*< 1.6*
	B2-4-12	28-Mar-18	12	*< 0.93*	*< 1.9*
	B2-4-27	28-Mar-18	27	*< 1.0*	*< 2.0*
	B2-4-55	28-Mar-18	55	*< 1.2*	*< 2.3*
	B2-4-80	28-Mar-18	80	**1.8**	*< 2.1*
B2-5	B2-5-5	26-Mar-18	5	*< 0.87*	*< 1.7*
	B2-5-15	26-Mar-18	15	*< 1.0*	*< 2.0*
	B2-5-39	26-Mar-18	39	*< 1.0*	*< 2.1*
	B2-5-55	26-Mar-18	55	*< 1.1*	*< 2.2*
	B2-5-80	26-Mar-18	80	*< 1.1*	*< 2.3*
B2-6	B2-6-5	16-Mar-18	5	**3.5**	**1.9**
	B2-6-16	16-Mar-18	16	*< 1.0*	*< 2.1*
	B2-6-28	16-Mar-18	28	*< 1.1*	*< 2.2*
	B2-6-55	16-Mar-18	55	*< 1.1*	*< 2.2*
	B2-6-80	16-Mar-18	80	**2.3**	*< 2.2*
B2-7	B2-7-6	15-Mar-18	6	**2.3**	*< 1.8*
	B2-7-13	15-Mar-18	13	*< 1.2*	*< 2.3*
	B2-7-28	15-Mar-18	28	*< 1.1*	*< 2.1*
	B2-7-55	15-Mar-18	55	*< 1.1*	*< 2.2*
	B2-7-80	15-Mar-18	80	*< 1.4*	*< 2.7*
B2-8	B2-8-5	27-Mar-18	5	**1.1**	*< 1.8*
	B2-8-17	27-Mar-18	17	*< 1.1*	*< 2.1*
	B2-8-28	27-Mar-18	28	*< 1.0*	*< 2.1*
	B2-8-55	27-Mar-18	55	*< 1.1*	*< 2.2*
	B2-8-80	27-Mar-18	80	*< 1.1*	*< 2.3*

Notes:
< = Compound not detected. Reportable detection limit shown.
***Bold** = Concentrations above the Reportable Detection Limit.*
SW8260B analyses performed by Calscience Environmental Laboratories, Inc.
Tetrachloroethene Commercial Screening Levels (µg/kg): 2,700 (DTSC Note 3 SL); 100,000 (USEPA RSL)
Trichloroethene Commercial Screening Levels (µg/kg): 6,000 (USEPA RSL); Not Established (DTSC Note 3 SL)

Abbreviations:
µg/kg = Micrograms per kilogram
bgs = Below ground surface
DTSC - Department of Toxic Substances Control
RSL = Regional screening level
SL = Screening level
USEPA = United States Environmental Protection Agency

Table 10
Derivation of SSLs for PCE - Block 2
Infineon Facility
El Segundo, California

Chemical	Drinking Water MCL (µg/l)	Soil Sample Depth (ft)	Depth from Sample to Groundwater (D) (ft)	Gravel Interval (Tgr) (ft)	Sand Interval (Tsa) (ft)	Silt Interval (Tsi) (ft)	Clay Interval (Tcl) (ft)	Attenuation Factor (AF_{MAX})	AF modified for groundwater depth (AF_D)	AF_D modified for lithology (AF_T)	Soil Screening Levels (SSLs) (µg/kg)
PCE	5	7 or less	93 or more	0	93	0	0	729.2	389.1	38.9	**195**
PCE	5	19	81	0	81	0	0	729.2	317.5	31.8	**159**
PCE	5	46	54	0	54	0	0	729.2	156.4	15.6	**78**
PCE	5	65	35	0	35	0	0	729.2	63.9	6.4	**32**
PCE	5	80	20	0	20	0	0	729.2	37.0	3.7	**18**

Abbreviations:
µg/kg = Micrograms per kilogram
µg/l = Micrograms per liter
AF_{MAX} = Maximum Attenuation Factor
ft = Feet
SSL = Soil screening level concentrations
MCL = California MCL (Maximum Contaminant Level)
PCE = Tetrachloroethene

Legend:
Tgr = Total thickness of gravel layer within D (feet)
Tsa = Total thickness of sand layer within D (feet)
Tsi = Total thickness of silt layer within D (feet)
Tcl = Total thickness of clay layer within D (feet)
$AF = 1 + (P_b / q_w) \times f_{oc} \times K_{oc} + (n - q_w) \times K_H / qw$
$AF_D = D \times (0.1 \times AF - 1)/40 + 1$
$AF_T = (AF_D / D) \times (Tgr / 20 + Tsa / 10 + Tsi / 5 + Tcl)$

Assumptions Used:

P_b =	2.27 :	Soil Bulk Density (g/ml)
q_w =	0.031 :	Soil Water Content by volume
f_{oc} =	0.015 :	Soil Organic Carbon Content
n =	0.2 :	Soil Porosity
K_{oc} =	660 :	Organic Carbon Partition coefficient for PCE (ml/g)
K_H =	0.6 :	Henry's Law constant for Benzene

Where:
AF_T = Attenuation factor with total modification for distance to groundwater and litholc
AF_D = Attenuation factor as a function of AF and interval between soil sample and grc
D = Distance from groundwater to soil sample of interest (feet).

Table 11
Summary of Metals in Soil Samples - Former Railroad Track Area on Block 2
Infineon Facility
El Segundo, California

		Sample Date	5-Sep-19	5-Sep-19	5-Sep-19	5-Sep-19
		Sample ID	B2-9-0	B2-9-6	B2-10-0	B2-10-6
		Sample Depth (inches)	0 to 3	3 to 6	0 to 3	3 to 6
	Screening Levels (mg/kg)					
	DTSC Note 3 SL (Commercial)	USEPA RSL (Commercial)	Results (mg/kg)			
Antimony	--	470	<1.0	**0.42 J**	**0.44 J**	**0.35 J**
Arsenic	*0.36 (12*)*	--	**2.7**	**4.4**	**4.3**	**4.6**
Barium	--	220,000	**75 F1**	**52**	**96**	**89**
Beryllium	230	--	**0.23 J**	**0.22 J**	**0.36**	**0.25 J**
Cadmium	780	--	**0.65**	**2.4**	**0.65**	**1.7**
Chromium	--	1,800,000	**11**	**16**	**13**	**16**
Cobalt	--	350	**3.4**	**3.8**	**4.4**	**3.9**
Copper	--	47,000	**8.5**	**11**	**19**	**15**
Lead	320	--	**7.6**	**18**	**24**	**18**
Mercury	4.4	--	**0.020**	**0.050**	**0.043**	**0.037**
Molybdenum	--	5,800	**0.62 J,F1**	**0.68 J**	**0.71 J**	**0.73 J**
Nickel	11,000	--	**8.2**	**8.7**	**11**	**10**
Selenium	--	5,800	**0.63 J,F1**	**0.61 J**	**0.45 J**	**0.67 J**
Silver	--	5,800	<0.50	<0.51	<0.50	<0.49
Thallium	--	120	<0.50 F1	<0.51	<0.50	<0.49
Vanadium	--	5,800	**20**	**24**	**26**	**25**
Zinc	--	350,000	**28**	**44**	**66**	**49**

Notes:

< = Metal not detected at concentrations at or above the designated laboratory reporting limit.

***Bold** = Compound was detected above the laboratory reporting detection limit.*

-- = Not established or not required as DTSC value available.

J = Result is less than the RL, but greater than or equal to the MDL; the concentration is an approximate value.

F1 = MS and/or MSD recovery is outside acceptance limits.

** Arsenic concentrations are all less than the published background level (12 mg/kg) for Southern California (DTSC 2008).*

Abbreviations:

DTSC = Department of Toxic Substance Control

mg/kg = Milligrams per kilogram

MDL = Method detection limit

MS = Matrix spike

MSD = Matrix spike duplicate

RSL = Regional Screening Level

SL = Screening Level

USEPA = United States Environmental Protection Agency

Table 12
Summary of VOCs in Soil Vapor Samples - Block 1
Infineon Facility
El Segundo, California

				Sample ID	SV-1	SV-10	SV-14	SV-15	SV-16	SV-17	SV-18	SV-21
				Sample Date	3/17/2017	3/17/2017	3/17/2017	3/17/2017	3/17/2017	3/17/2017	3/17/2017	3/17/2017
	Screening Levels (µg/m^3) (AF =0.001)	Basis[a]	Screening Levels (µg/m^3) (AF=0.03)	Basis[a]	Results (µg/m^3)							
Chloroform (Trichloromethane)	*530*	*USEPA*	*18*	*USEPA*	<3.0	**11.9**	**11.1**	<3.0	<3.0	<3.0	<3.0	5.91
1,1-Dichloroethene	*310,000*	*DTSC*	*10,333*	*DTSC*	<3.0	<3.0	<3.0	**12.8**	<3.0	**8.28**	<3.0	<1.5
cis-1,2-Dichloroethene	*35,000*	*DTSC*	*1,167*	*DTSC*	<3.0	<3.0	<3.0	**13.2**	<3.0	<3.0	<3.0	<1.5
1,4-Dioxane	*2,500*	*USEPA*	*83*	*USEPA*	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	**28.1**
Ethylbenzene	*4,900*	*USEPA*	*163*	*USEPA*	**10.4**	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<1.5
Methane	--	--	--	--	< 0.30	< 0.30	< 0.30	< 0.30	< 0.30	< 0.30	< 0.30	< 0.30
Tetrachloroethene	*2,000*	*DTSC*	*67*	*DTSC*	**1,560**	**76,300**	**9,020**	**3,570**	**1,890**	**1,630**	**4,690**	**3,620**
Toluene (Methyl benzene)	*1,300,000*	*DTSC*	*43,333*	*DTSC*	**8.63**	**9.57**	<2.0	<2.0	<2.0	<2.0	<2.0	5.84
Trichloroethene	*3,000*	*USEPA*	*100*	*USEPA*	**23.6**	**574**	**886**	**1,290**	**493**	**794**	**2,080**	**356**
Trichlorofluoromethane	*5,300,000*	*DTSC*	*176,667*	*DTSC*	<4.0	**13.0**	<4.0	<4.0	<4.0	<4.0	<4.0	<2.0
Trichlorotrifluoroethane (Freon-113)	*2,200,000*	*USEPA*	*73,333*	*USEPA*	<5.0	**188**	<5	**128**	**39.3**	**142**	**212**	<2.5
1,2,4-Trimethylbenzene	*260,000*	*USEPA*	*8,667*	*USEPA*	**20.5**	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<1.5
1,3,5-Trimethylbenzene	*260,000*	*USEPA*	*8,667*	*USEPA*	**9.29**	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<1.5
o-Xylene	*440,000*	*USEPA*	*14,667*	*USEPA*	**18.4**	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	**4.82**
m,p-Xylenes	*440,000*	*USEPA*	*14,667*	*USEPA*	**45.9**	**8.38**	<4.0	<4.0	<4.0	<4.0	8.20	**13.0**

Notes:
Table lists only those VOCs detected at or above the laboratory reporting limit.
< = Indicates constituent not detected above indicated laboratory reporting limit.
-- = Not established
Bold = Detection

Shaded values exceed Screening Level using the AF of 0.001

a = Screening Levels from DTSC Office of Human and Ecological Risk Note 3 (DTSC, 2019; primary) and USEPA RSLs Commercial/Industrial (USEPA, 2019), adapted to calculate soil vapor screening levels by applying DTSC Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air (Vapor Intrusion Guidance) – Final (DTSC, 2011) and DTSC Note 4 (2019) alternative AF of 0.03.

Abbreviations:
µg/m^3 = Micrograms per cubic meter
AF = Attenuation Factor
DTSC = Department of Toxic Substances Control
RSL = Regional Screening Level
USEPA = United States Environmental Protection Agency

Table 13
Summary of VOCs in Soil Vapor Samples - Block 2
Infineon Facility
El Segundo, California

	Sample ID				SVB2-1	SVB2-3	SVB2-5	SVB2-8	SVB2-9	SVB2-10	SVB2-11
	Sample Date				3/20/2017	3/20/2017	3/20/2017	3/20/2017	3/20/2017	3/17/2017	3/20/2017
Laboratory Job Number					87046	87046		87046	87046	87046	87046
	Screening Levels (µg/m^3) (AF =0.001)	Basis[a]	Screening Levels (µg/m^3) (AF=0.03)	Basis[a]	Results (µg/m^3)						
Acetone	*140,000,000*	*USEPA*	*4,666,667*	*USEPA*	**278**	<5.0	**164**	<10	<10	<10	<10
Benzene	*420*	*DTSC*	*14*	*DTSC*	<1.0	<1.0	<2.0	<2.0	**7.34**	**8.40**	**6.48**
Benzyl chloride	*250*	*USEPA*	*8*	*USEPA*	<1.5	<1.5		<3.0	<3.0	<3.0	<3.0
Bromodichloromethane	*330*	*USEPA*	*11*	*USEPA*	<1.5	<1.5		<3.0	<3.0	<3.0	<3.0
Bromoform	*11000*	*USEPA*	*367*	*USEPA*	<1.5	<1.5		<3.0	<3.0	<3.0	<3.0
Bromomethane (Methyl bromide)	*22000*	*USEPA*	*733*	*USEPA*	<1.5	<1.5		<3.0	<3.0	<3.0	<3.0
2-Butanone (MEK)	*22000000*	*USEPA*	*733333*	*USEPA*	<5.0	<5.0		<10	<10	<10	<10
Carbon disulfide	*3,100,000*	*USEPA*	*103333*	*USEPA*	<1.5	<1.5		<3.0	<3.0	<3.0	<3.0
Carbon tetrachloride	*2000*	*USEPA*	*67*	*USEPA*	<2.0	<2.0		<4.0	<4.0	<4.0	<4.0
Chlorobenzene	*220000*	*USEPA*	*7333*	*USEPA*	<1.0	<1.0		<2.0	<2.0	<2.0	<2.0
Chloroethane	*44000000*	*USEPA*	*1466667*	*USEPA*	<1.5	<1.5		<3.0	<3.0	<3.0	<3.0
Chloroform (Trichloromethane)	*530*	*USEPA*	*18*	*USEPA*	<1.5	<1.5	**27.1**	**47.2**	**82.5**	**50.8**	**140**
Chloromethane (Methyl chloride)	*390000*	*USEPA*	*13000*	*USEPA*	<1.0	<1.0		<2.0	<2.0	<2.0	<2.0
3-Chloropropene (Allyl chloride)	*2000*	*USEPA*	*67*	*USEPA*	<1.5	<1.5		<3.0	<3.0	<3.0	<3.0
Cyclohexane	*26,000,000*	*USEPA*	*866667*	*USEPA*	<1.0	<1.0		<2.0	<2.0	<2.0	<2.0
Dibromochloromethane	--	--	--	--	<1.5	<1.5		<3.0	<3.0	<3.0	<3.0
1,2-Dibromoethane (EDB)	*20*	*USEPA*	*0.67*	*USEPA*	<2.0	<2.0		<4.0	<4.0	<4.0	<4.0
1,2-Dichlorobenzene	*880000*	*USEPA*	*29333*	*USEPA*	<2.0	<2.0		<4.0	<4.0	<4.0	<4.0
1,3-Dichlorobenzene	--	--	--	--	<2.0	<2.0		<4.0	<4.0	<4.0	<4.0
1,4-Dichlorobenzene	*1100*	*USEPA*	*37*	*USEPA*	<2.0	<2.0		<4.0	<4.0	<4.0	<4.0
Dichlorodifluoromethane	*440,000*	*USEPA*	*14667*	*USEPA*	<2.0	<2.0		<4.0	<4.0	<4.0	<4.0
1,1-Dichloroethane	*3500000*	*DTSC*	*116667*	*DTSC*	<1.5	<1.5	<3.0	<3.0	<3.0	<3.0	**7.04**
1,2-Dichloroethane (EDC)	*470*	*USEPA*	*16*	*USEPA*	<1.5	<1.5		<3.0	<3.0	<3.0	<3.0
1,1-Dichloroethene	*310,000*	*DTSC*	*10333*	*DTSC*	**6.22**	<1.5	**44.9**	**270**	**432**	**587**	**535**
cis-1,2-Dichloroethene	*35,000*	*DTSC*	*1167*	*DTSC*	**10.6**	<1.5	<3.0	**28.1**	**33.8**	**14.7**	**25.1**
trans-1,2-Dichloroethene	*35000*	*DTSC*	*1167*	*DTSC*	<1.5	<1.5		<3.0	<3.0	<3.0	<3.0
1,2-Dichloropropane	*3300*	*USEPA*	*110*	*USEPA*	<1.5	<1.5		<3.0	<3.0	<3.0	<3.0
cis-1,3-Dichloropropene	*3100*	*USEPA*	*103*	*USEPA*	<1.5	<1.5		<3.0	<3.0	<3.0	<3.0
trans-1,3-Dichloropropene	*3100*	*USEPA*	*103*	*USEPA*	<1.5	<1.5		<3.0	<3.0	<3.0	<3.0
1,4-Dioxane	*2500*	*USEPA*	*83*	*USEPA*	<1.0	<1.0		<2.0	<2.0	<2.0	<2.0
Ethyl acetate	*310000*	*USEPA*	*10333*	*USEPA*	<1.5	<1.5		<3.0	<3.0	<3.0	<3.0
Ethylbenzene	*4,900*	*USEPA*	*163*	*USEPA*	<1.5	<1.5	**11.5**	<3.0	<3.0	<3.0	<3.0
Hexachlorobutadiene	*560*	*USEPA*	*19*	*USEPA*	<6.0	<6.0		<12	<12	<12	<12
n-Hexane	*3,100,000*	*USEPA*	*103333*	*USEPA*	<1.5	<1.5		<3.0	<3.0	<3.0	<3.0
2-Hexanone	*130000*	*USEPA*	*4333*	*USEPA*	<5.0	<5.0		<10	<10	<10	<10
Isopropyl alcohol	*880000*	*USEPA*	*29333*	*USEPA*	<5.0	<5.0		<10	<10	<10	<10
Methane	--	--	--	--	< 0.30	<0.30		< 0.30	< 0.30	< 0.30	< 0.30
4-Methyl-2-pentanone (MIBK)	*13000000*	*USEPA*	*433333*	*USEPA*	<5.0	<5.0		<10	<10	<10	<10
Methylene chloride (DCM)	*1200000*	*USEPA*	*40000*	*USEPA*	<5.0	<5.0		<10	<10	<10	<10
Propene	*13000000*	*USEPA*	*433333*	*USEPA*	<1.5	<1.5		<3.0	<3.0	<3.0	<3.0
Styrene	*3,900,000*	*DTSC*	*130000*	*DTSC*	<1.5	<1.5		<3.0	<3.0	<3.0	<3.0
1,1,2,2-Tetrachloroethane	*350000*	*DTSC*	*11667*	*DTSC*	<2.0	<2.0		<4.0	<4.0	<4.0	<4.0

Table 13
Summary of VOCs in Soil Vapor Samples - Block 2
Infineon Facility
El Segundo, California

	Sample ID				SVB2-1	SVB2-3	SVB2-5	SVB2-8	SVB2-9	SVB2-10	SVB2-11
	Sample Date				3/20/2017	3/20/2017	3/20/2017	3/20/2017	3/20/2017	3/17/2017	3/20/2017
Laboratory Job Number					87046	87046		87046	87046	87046	87046
	Screening Levels (µg/m^3) (AF =0.001)	Basis[a]	Screening Levels (µg/m^3) (AF=0.03)	Basis[a]	Results (µg/m^3)						
Tetrachloroethene	*2,000*	*DTSC*	*67*	*DTSC*	**231**	**80.7**	**28,500**	**10,300**	**31,300**	**21,860**	**22,800**
Tetrahydrofuran	*8,800,000*	*USEPA*	*293,333*	*USEPA*	**5.53**	<1.5	<3.0	<3.0	<3.0	<3.0	<3.0
Toluene (Methyl benzene)	*1,300,000*	*DTSC*	*43,333*	*DTSC*	**7.42**	**4.94**	<2.0	**35.6**	<2.0	<2.0	**55.4**
1,2,4-Trichlorobenzene	*1700*	*DTSC*	*57*	*DTSC*	<1.0	<1.0		<2.0	<2.0	<2.0	<2.0
1,1,1-Trichloroethane	*4,400,000*	*DTSC*	*146,667*	*DTSC*	<1.5	<1.5	**50.7**	**32.1**	**68.7**	**78.0**	**92.2**
1,1,2-Trichloroethane	*770*	*USEPA*	*26*	*USEPA*	<1.5	<1.5		<3.0	<3.0	<3.0	<3.0
Trichloroethene	*3,000*	*USEPA*	*100*	*USEPA*	**74.6**	**41.7**	**10,200**	**5,430**	**17,310**	**11,340**	**8,382**
Trichlorofluoromethane	*5,300,000*	*DTSC*	*176,667*	*DTSC*	<2.0	<2.0	**33.7**	**150**	**35.6**	**70.2**	**977**
Trichlorotrifluoroethane (Freon-113)	*22,000,000*	*USEPA*	*733,333*	*USEPA*	**7.32**	<2.5	**106**	**46.3**	**103**	**133**	**104**
1,2,4-Trimethylbenzene	*260,000*	*USEPA*	*8,667*	*USEPA*	**10.2**	**8.11**	**14.6**	<3.0	<3.0	<3.0	<3.0
1,3,5-Trimethylbenzene	*260,000*	*USEPA*	*8,667*	*USEPA*	<1.5	<1.5		<3.0	<3.0	<3.0	<3.0
2,2,4-Trimethylpentane	--	--	--	--	<1.5	<1.5		<3.0	<3.0	<3.0	<3.0
Vinyl acetate	*880000*	*USEPA*	*29333*	*USEPA*	<5.0	<5.0		<10	<10	<10	<10
Vinyl bromide	*380*	*USEPA*	*13*	*USEPA*	<1.5	<1.5		<3.0	<3.0	<3.0	<3.0
Vinyl chloride (Chloroethene)	*160*	*DTSC*	*5*	*DTSC*	<1.0	<1.0		<2.0	<2.0	<2.0	<2.0
o-Xylene	*440,000*	*USEPA*	*14,667*	*USEPA*	**3.29**	**4.64**	**29.9**	**6.51**	<2.0	<2.0	<2.0
m,p-Xylenes	*440,000*	*USEPA*	*14,667*	*USEPA*	**4.51**	**6.94**	**64.4**	**11.0**	<4.0	<4.0	**9.55**
n-Heptane	1,800,000	USEPA	60,000	USEPA	<1.5					<3.0	<3.0

Notes:

Table lists only those VOCs detected at or above the laboratory reporting limit.

< = Indicates constituent not detected above indicated laboratory reporting limit.

***Bold** = Detection*

-- = Not Established

Shaded values exceed Screening Level using the AF of 0.001

a = Screening Levels from DTSC Office of Human and Ecological Risk Note 3 (DTSC, 2019)(primary) and USEPA RSLs Commercial/Industrial (USEPA, 2019), adapted to calculate soil vapor screening levels by applying DTSC Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air (Vapor Intrusion Guidance) – Final (DTSC, 2011)

Abbreviation:

µg/m^3 = Micrograms per cubic meter

AF = Attenuation Factor

DTSC = Department of Toxic Substances Control

RSL = Regional Screening Level

VOC = Volatile organic compounds

USEPA = United States Environmental Protection Agency

Table 14

Summary of VOCs in Soil Vapor Samples - Block 1
Infineon Facility
El Segundo, California

Soil Boring	Sample Identification	Sample Depth (feet bgs)	Sample Date	Analytes (µg/m^3)									
				Acetone	Trichlorofluoromethane (F11)	1,1-Dichloroethene	1,1,2 Trichlorotrifluoroethane (F113)	cis-1,2-Dichloroethene (cis-1,2-DCE)	Chloroform	1,1,1-Trichloroethane (1,1,1-TCA)	Benzene	Trichloroethene (TCE)	Tetrachloroethene (PCE)
Screening Levels (µg/m^3) (.001)				*140000000*	*5,300,000*	*310,000*	*22,000,000*	*35,000*	*530*	*4,400,000*	*420*	*3,000*	*2,000*
Source				*USEPA*	*DTSC*	*DTSC*	*USEPA*	*DTSC*	*USEPA*	*DTSC*	*DTSC*	*USEPA*	*DTSC*
Screening Levels (µg/m^3)(.03)				*4,666,667*	*176,667*	*10,333*	*733,333*	*1,167*	*18*	*146,667*	*14*	*100*	*67*
Source				*USEPA*	*DTSC*	*DTSC*	*USEPA*	*DTSC*	*USEPA*	*DTSC*	*DTSC*	*USEPA*	*DTSC*
B1-1	SV-B1-1-22	22	27-Mar-18	<10000	<1000	<1000	**6,800**	**1,200**	<200	<1000	<200	**64,000**	**130,000**
	SV-B1-1-33	33	27-Mar-18	<10000	<1000	<1000	**7,000**	**1,500**	<200	<1000	<200	**67,000**	**120,000**
	SV-B1-1-53	53	27-Mar-18	<10000	<1000	<1000	**8,400**	**1,600**	<200	<1000	<200	**73,000**	**150,000**
	SV-B1-1-80	80	27-Mar-18	**4,700**	**380**	**760**	**6,500**	**2,000**	**180**	**110**	**20**	**82,000**	**160,000**
B1-2	SV-B1-2-25	25	27-Mar-18	<5000	<500	<500	**4,600**	<500	<100	<500	<100	**7,700**	**36,000**
	SV-B1-2-32	32	27-Mar-18	<5000	<500	<500	**5,700**	**1,100**	**130**	<500	<100	**11,000**	**45,000**
	SV-B1-2-49	49	27-Mar-18	<10000	<1000	<1000	**8,000**	**1,700**	<200	<1000	<200	**15,000**	**60,000**
	SV-B1-2-80	80	27-Mar-18	<10000	<1000	<1000	**9,300**	**2,600**	**270**	<1000	<200	**21,000**	**81,000**
B1-3	SV-B1-3-17	17	27-Mar-18	<5000	<500	<500	**1,000**	<500	<100	<500	<100	**1,400**	**23,000**
	SV-B1-3-29	29	27-Mar-18	<5000	<500	<500	**1,900**	<500	<100	<500	<100	**3,900**	**40,000**
	SV-B1-3-54	54	27-Mar-18	<10000	<1000	<1000	**3,300**	<1000	<200	<1000	<200	**7,400**	**63,000**
	SV-B1-3-80	80	27-Mar-18	<10000	<1000	<1000	**4,400**	<1000	<200	<1000	<200	**12,000**	**90,000**
B1-4	SV-B1-4-22	22	28-Mar-18	<5000	<500	<500	**1,800**	<500	<100	<500	<100	**1,400**	**20,000**
	SV-B1-4-32	32	28-Mar-18	<5000	<500	<500	**4,400**	**750**	<100	<500	<100	**7,300**	**49,000**
	SV-B1-4-48	48	27-Mar-18	<10000	<1000	<1000	**5,900**	**1,200**	<200	<1000	<200	**8,700**	**55,000**
	SV-B1-4-80	80	27-Mar-18	<10000	<1000	<1000	**6,700**	**1,600**	<200	<1000	<200	**12,000**	**75,000**
B1-5	SV-B1-5-22	22	28-Mar-18	<10000	<1000	<1000	**3,900**	<1000	**550**	<1000	<200	**7,900**	**690,000**
	SV-B1-5-33	33	28-Mar-18	<10000	<1000	<1000	**5,800**	<1000	**230**	<1000	<200	**18,000**	**300,000**
	SV-B1-5-53	53	28-Mar-18	<10000	<1000	<1000	**6,600**	<1000	**210**	<1000	<200	**22,000**	**150,000**
	SV-B1-5-80	80	28-Mar-18	<10000	<1000	<1000	**7,000**	<1000	<200	<1000	<200	**25,000**	**150,000**

Notes:
Table lists only those VOCs detected at or above the laboratory reporting limit
< = Indicates constituent not detected above indicated laboratory reporting limit
Bold = Detection
Shaded = Values exceed Screening Level using the AF of 0.001
Screening levels are based on DTSC 2011, DTSC 2019 Human Ecological Risk Office Note 3, and USEPA RSLs Commercial/Industrial.

Abbreviations:
µg/m^3 = Micrograms per cubic meter
bgs = Below ground surface
DTSC = Department of Toxic Substances Control
RSL = Regional Screening Level
USEPA = United States Environmental Protection Agency
VOC = Volatile organic compound

Table 15
Summary of VOCs Soil Vapor Samples - Block 2
Infineon Facility
El Segundo, California

Soil Boring	Sample Identification	Sample Depth (feet bgs)	Sample Date	Analytes (µg/m³) Acetone	Trichloro-fluoromethane (F11)	1,1-Dichloroethene	1,1,2 Trichlorotrifluoro-ethane (F113)	cis-1,2-Dichloroethene (cis-1,2-DCE)	Chloroform	1,1,1-Trichloroethane (1,1,1-TCA)	Benzene	Trichloroethene (TCE)	Tetrachloroethene (PCE)
Screening Levels (µg/m³) (.001)				*140,000,000*	*5,300,000*	*310,000*	*22,000,000*	*35,000*	*530*	*4,400,000*	*420*	*3,000*	*2,000*
Source				*USEPA*	*DTSC*	*DTSC*	*USEPA*	*DTSC*	*USEPA*	*DTSC*	*DTSC*	*USEPA*	*DTSC*
Screening Levels (µg/m³)(.03)				*4,666,667*	*176,667*	*10,333*	*733,333*	*1,167*	*18*	*146,667*	*14*	*100*	*67*
Source				*USEPA*	*DTSC*	*DTSC*	*USEPA*	*DTSC*	*USEPA*	*DTSC*	*DTSC*	*USEPA*	*DTSC*
B2-1	SV-B2-1-18	18	2-Apr-18	**3,700**	<100	**220**	**950**	<100	**30**	<100	<20	**5,900**	**11,000**
	SV-B2-1-42	42	2-Apr-18	**2,600**	<200	**320**	**990**	**330**	**50**	<200	<40	**12,000**	**21,000**
	SV-B2-1-52	52	2-Apr-18	<5000	<500	<500	**1,500**	<500	<100	<500	<100	**17,000**	**31,000**
	SV-B2-1-80	80	2-Apr-18	<5000	<500	**550**	**1,800**	**680**	<100	<500	<100	**21,000**	**36,000**
B2-2	SV-B2-2-19	19	29-Mar-18	**9,800**	<100	**510**	**330**	<100	**50**	<100	**40**	**7,900**	**9,200**
	SV-B2-2-46	46	29-Mar-18	<5000	<500	**1,400**	**710**	<500	**110**	<500	<100	**37,000**	**66,000**
	SV-B2-2-65	65	29-Mar-18	<5000	<500	**1,600**	**770**	<500	**120**	<500	<100	**38,000**	**66,000**
	SV-B2-2-80	80	29-Mar-18	<5000	<500	**1,500**	**790**	<500	<100	<500	<100	**31,000**	**57,000**
B2-3	SV-B2-3-17	17	29-Mar-18	**3,900**	**2,400**	**270**	**250**	<100	**80**	<100	**20**	**4,300**	**10,000**
	SV-B2-3-29	29	29-Mar-18	**4,600**	**1,600**	**310**	**270**	<100	**80**	<100	<20	**4,700**	**10,000**
	SV-B2-3-54	54	29-Mar-18	<5000	**1,200**	<500	<500	<500	**120**	<500	<100	**6,400**	**17,000**
	SV-B2-3-63	63	28-Mar-18	<5000	**1,100**	<500	<500	<500	**150**	<500	<100	**7,900**	**21,000**
B2-4	SV-B2-4-12	12	2-Apr-18	<2000	<200	**790**	<200	<200	**40**	<200	<40	**5,800**	**24,000**
	SV-B2-4-27	27	30-Mar-18	**8,000**	<200	**1,400**	<200	<200	**100**	<200	<40	**15,000**	**33,000**
	SV-B2-4-55	55	30-Mar-18	<5000	<500	**1,800**	<500	<500	**110**	<500	<100	**17,000**	**34,000**
	SV-B2-4-75	75	30-Mar-18	<5000	<500	**1,600**	<500	<500	**120**	<500	<100	**17,000**	**34,000**
B2-5	SV-B2-5-15	15	29-Mar-18	**2,800**	**130**	**290**	<100	<100	**60**	<100	<20	**2,700**	**8,100**
	SV-B2-5-39	39	29-Mar-18	**4,300**	**180**	**530**	**110**	<100	**120**	<100	<20	**4,900**	**12,000**
	SV-B2-5-55	55	29-Mar-18	<5000	<500	**650**	<500	<500	**140**	<500	<100	**6,700**	**18,000**
	SV-B2-5-80	80	29-Mar-18	<5000	<500	**820**	<500	<500	**200**	<500	<100	**9,300**	**28,000**
B2-6	SV-B2-6-16	16	28-Mar-18	<5000	<500	**1,000**	<500	<500	<100	<500	<100	**19,000**	**32,000**
	SV-B2-6-28	28	28-Mar-18	<5000	<500	**1,700**	<500	<500	**100**	<500	<100	**28,000**	**52,000**
	SV-B2-6-55	55	28-Mar-18	<5000	<500	**2,300**	<500	<500	**140**	<500	<100	**37,000**	**68,000**
	SV-B2-6-80	80	29-Mar-18	<5000	<500	**1,900**	<500	<500	**130**	<500	<100	**30,000**	**51,000**
B2-7	SV-B2-7-13	13	28-Mar-18	<5000	<500	**540**	<500	<500	<100	<500	<100	**18,000**	**38,000**
	SV-B2-7-28	28	28-Mar-18	<5000	<500	**1,200**	<500	<500	<100	<500	<100	**26,000**	**46,000**
	SV-B2-7-55	55	29-Mar-18	<5000	<500	**1,600**	**520**	<500	**120**	<500	<100	**30,000**	**54,000**
	SV-B2-7-80	80	28-Mar-18	<5000	<500	**1,900**	**590**	<500	**120**	<500	<100	**37,000**	**62,000**
B2-8	SV-B2-8-17	17	30-Mar-18	<5000	<500	**1,300**	<500	<500	<100	<500	<100	**20,000**	**28,000**
	SV-B2-8-28	28	30-Mar-18	**8,800**	<100	**2,200**	**380**	**410**	**130**	**180**	**20**	**45,000**	**59,000**
	SV-B2-8-55	55	30-Mar-18	<5000	<100	**3,300**	**520**	**580**	**140**	<500	<100	**52,000**	**73,000**
	SV-B2-8-80	80	30-Mar-18	<5000	<500	**3,600**	**620**	**550**	**140**	<500	<100	**48,000**	**57,000**

Notes:
Table lists only those VOCs detected at or above the laboratory reporting limit
< = Indicates constituent not detected above indicated laboratory reporting limit
Bold = Detection
Shaded = Values exceed Screening Level using the AF of 0.001
Screening levels are based on DTSC 2011, DTSC 2019 Human Ecological Risk Office Note 3, and USEPA RSLs Commercial/Industrial 2019.

Abbreviations:
µg/m³ = Micrograms per cubic meter
bgs = Below ground surfact
DTSC = Department of Toxic Substances Control
RSL = Regional Screening Level
USEPA = United States Environmental Protection Agency
VOC = Volatile organic compound

Table 16
Summary of VOCs in Indoor Air Samples - Block 1
Infineon Facility
El Segundo, California

Sample Date	Sample ID		Acetone	Chloromethane	Dichlorodifluoro-methane	Toluene
		SL - Residential ($\mu g/m^3$)	140,000	390	440	1,300
		SL - Residential ($\mu g/m^3$)	140,000	390	440	1,300
3/13/2017	IA-13	$\mu g/m^3$	19	1.2	2.7	2.8
3/13/2017	IA-13D	$\mu g/m^3$	20	1.3	2.9	3.0
3/13/2017	IA-14	$\mu g/m^3$	20	1.3	2.9	2.8
3/13/2017	IA-15	$\mu g/m^3$	20	1.3	< 3.0	3.2
3/13/2017	IA-16	$\mu g/m^3$	21	1.3	2.9	3.3
3/13/2017	IA-17	$\mu g/m^3$	21	1.3	3.0	3.5
3/13/2017	IA-18	$\mu g/m^3$	24	1.4	3.1	3.5

Notes:
VOCs listed were detected in indoor air samples at concentrations at or exceeding laboratory reporting limits.
< = Indicates constituent not detected above indicated laboratory reporting limit.
SLs are based on DTSC Office of Human and Ecological Risk Note 3 (DTSC, 2019)(primary) and USEPA RSLs

Abbreviations:
$\mu g/m^3$ = Microgrmas per cubic meter
DTSC = Department of Toxic Substances Control
RSL = Regional Screening Level
SL = Screening Level
USEPA = United States Environmental Protection Agency
VOCs = Volatile organic compounds

Table 17
Summary of VOCs Detected in Indoor Air Samples - Block 2
Infineon Facility
El Segundo, California

Sample Date	Sample ID		Acetone	Benzene	Chloromethane	Dichlorodifluoro-methane	1,1-Difluoroethane	Isopropanol	Toluene
		SL - Commerical ($\mu g/m^3$)	*140,000*	*0.42*	*390*	*440*	*7.7*	*880*	*1,300*
		Source	*USEPA*	*DTSC*	*USEPA*	*USEPA*	*DTSC*	*USEPA*	*DTSC*
3/13/2017	IA-01	$\mu g/m^3$	29	**1.7**	2.0	3.0	9.8	440	4.0
3/13/2017	IA-01D	$\mu g/m^3$	28	**1.7**	1.9	3.0	9.1	450	3.6
3/13/2017	IA-03	$\mu g/m^3$	26	**1.7**	2.1	3.1	< 5.4	60	3.8
3/13/2017	IA-08	$\mu g/m^3$	21	< 1.6	1.9	3.5	< 5.4	< 12	2.2
3/13/2017	IA-11	$\mu g/m^3$	25	< 1.6	2.0	3.1	< 5.4	< 12	3.3

Notes:

VOCs listed were detected in indoor air samples at concentrations at or exceeding laboratory reporting limits.

SLs are based on DTSC Office of Human and Ecological Risk Note 3 (DTSC, 2019)(primary) and USEPA RSLs Commercial/Industrial (USEPA, 2019)

Values in bold exceed commercial screening levels (for benzene, the detected concentrations are typical of ambient air for the site area, based on the Los Angeles - North Main Street monitoring station, sampled in 2015 by the California Air Resources Board).

Abbreviations:

$\mu g/m^3$ = Milligrams per cubic meter

DTSC = Department of Toxic Substances Control

RSLs = Regional Screening Levels

SL = Screening Level

USEPA = United States Environmental Protection Agency

VOCs = Volatile organic compounds

Table 18
VLEACH Soil Source Development - Block 1 & Block 2
Infineon Facility
El Segundo, California

Compound	Soil Vapor Concentration			Chemical-specific Parameters: Henry's Law Constant (Hc) (unit less)	Chemical-specific Parameters: Carbon-Water Sorption Coefficient	Soil Matrix Concentration		
Units	µg/m3	g/cm^3	µg/L		cm^3/g	g/g	µg/kg	mg/kg
Acetone	1.0E+00	1.0E-12	0.0010	1.6E-03	5.8E-01	2.2E-11	0.022	2.2E-05
Benzene	1.0E+00	1.0E-12	0.0010	2.3E-01	1.5E+02	3.5E-12	0.0035	3.5E-06
Chloroform	1.0E+00	1.0E-12	0.0010	1.5E-01	3.2E+01	1.5E-12	0.0015	1.5E-06
1,1-Dichloroethane	1.0E+00	1.0E-12	0.0010	2.3E-01	3.2E+01	1.0E-12	0.0010	1.0E-06
1,1-Dichloroethene	1.0E+00	1.0E-12	0.0010	1.1E+00	3.2E+01	3.7E-13	0.0004	3.7E-07
cis-1,2-Dichloroethene	1.0E+00	1.0E-12	0.0010	1.7E-01	4.0E+01	1.6E-12	0.0016	1.6E-06
1,4-Dioxane	1.0E+00	1.0E-12	0.0010	2.0E-04	2.6E+00	2.3E-10	0.23	2.3E-04
Ethylbenzene	1.0E+00	1.0E-12	0.0010	3.2E-01	4.5E+02	7.2E-12	0.0072	7.2E-06
Tetrachloroethene	1.0E+00	1.0E-12	0.0010	7.2E-01	9.5E+01	8.9E-13	0.0009	8.9E-07
Tetrahydrofuran	1.0E+00	1.0E-12	0.0010	2.9E-03	1.1E+01	3.0E-11	0.0301	3.0E-05
Toluene	1.0E+00	1.0E-12	0.0010	2.7E-01	2.3E+02	4.6E-12	0.0046	4.6E-06
1,1,1-Trichloroethane	1.0E+00	1.0E-12	0.0010	7.0E-01	4.4E+01	5.5E-13	0.0006	5.5E-07
Trichloroethene	1.0E+00	1.0E-12	0.0010	4.0E-01	6.1E+01	1.0E-12	0.0010	1.0E-06
Trichlorofluoromethane	1.0E+00	1.0E-12	0.0010	4.0E+00	4.4E+01	2.6E-13	0.0003	2.6E-07
Trichlorortrifluororethane	1.0E+00	1.0E-12	0.0010	2.2E+01	2.0E+02	2.4E-13	0.0002	2.4E-07
1,2,4-Trimethylbenzene	1.0E+00	1.0E-12	0.0010	2.5E-01	6.1E+02	1.3E-11	0.0125	1.3E-05
1,3,5-Trimethylbenzene	1.0E+00	1.0E-12	0.0010	3.6E-01	6.0E+02	8.7E-12	0.0087	8.7E-06
o-Xylene	1.0E+00	1.0E-12	0.0010	2.1E-01	3.8E+02	9.4E-12	0.0094	9.4E-06
m,p-Xylenes	1.0E+00	1.0E-12	0.0010	2.9E-01	3.8E+02	6.7E-12	0.0067	6.7E-06

Defined Parameters (DTSC 2011 defaults):

0.054 = Soil Volumetric Water Content (θw) (cm3/cm3)
0.321 = Soil Volumetric Air Content (θa) (cm3/cm3)
1.66 = Soil Bulk Density (ρs) (g/cm3)
0.005 = Soil Fraction Organic Carbon (foc) (g/g)

Abbreviations:

µg/kg = Micrograms per kilogram
µg/L = Micrograms per liter
µg/m^3 = Micrograms per cubic meter
Cgas = Soil Vapor Concentration
cm^3/g = cubic centimeters per gram
Csoil = Soil Matrix Concentration
g/cm^3 = grams per cubic centimeter
g/g = grams per gram
Koc = Carbon-Water Sorption Coefficient
mg/kg = milligrams per kilogram

Table 19
Soil Vapor and Soil Matrix Equilibrium Calculation - Block 1 VLEACH Inputs (Single Polygon) - Tier 1
Infineon Facility
El Segundo, California

Sample ID	Depth	cis-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene
		Soil Vapor Data		
Units		µg/m³		
SV-1	5	<3.0	1560	23.6
SV-10	5	<3.0	76300	574
SV-14	5	<3.0	9020	886
SV-15	5	13.2	3570	1290
SV-16	5	<3.0	1890	493
SV-17	5	<3.0	1630	794
SV-18	5	<3.0	4690	2080
SV-21	5	<1.5	3620	356
SV-B1-3-17	17	<500	23000	1400
SV-B1-1-22	22	1200	130000	64000
SV-B1-4-22	22	<500	20000	1400
SV-B1-5-22	22	<1000	690000	7900
SV-B1-2-25	25	<500	36000	7700
SV-B1-3-29	29	<500	40000	3900
SV-B1-2-32	32	1100	45000	11000
SV-B1-4-32	32	750	49000	7300
SV-B1-1-33	33	1500	120000	67000
SV-B1-5-33	33	<1000	300000	18000
SV-B1-4-48	48	1200	55000	8700
SV-B1-2-49	49	1700	60000	15000
SV-B1-1-53	53	1600	150000	73000
SV-B1-5-53	53	<1000	150000	22000
SV-B1-3-54	54	<1000	63000	7400
SV-B1-1-80	80	2000	160000	82000
SV-B1-2-80	80	2600	81000	21000
SV-B1-3-80	80	<1000	90000	12000
SV-B1-4-80	80	1600	75000	12000
SV-B1-5-80	80	<1000	150000	25000

Sample ID	Depth	cis-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene
		Vapor Converted Soil Data		
		µg/kg		
		ND	1.4	0.02
		ND	68.2	0.6
		ND	8.1	0.9
		0.02	3.2	1.3
		ND	1.7	0.5
		ND	1.5	0.8
		ND	4.2	2.1
		ND	3.2	0.4
		ND	20.6	1.4
		1.9	116.3	65.8
		ND	17.9	1.4
		ND	617.1	8.1
		ND	32.2	7.9
		ND	35.8	4.0
		1.7	40.2	11.3
		1.2	43.8	7.5
		2.4	107.3	68.9
		ND	268.3	18.5
		1.9	49.2	8.9
		2.7	53.7	15.4
		2.5	134.1	75.0
		ND	134.1	22.6
		ND	56.3	7.6
		3.2	143.1	84.3
		4.1	72.4	21.6
		ND	80.5	12.3
		2.5	67.1	12.3
		ND	134.1	25.7

Sample ID	Depth	cis-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene
		Measured Soil Data		
		µg/kg		
SB-1-0-1	1	< 5.2	< 5.2	< 5.2
SB-3-0-1	1	< 5.0	< 5.0	< 5.0
SB-4-0-1	1	< 5.1	< 5.1	< 5.1
SB-5-0-1	1	< 5.0	< 5.0	< 5.0
SB-6-0-1	1	< 5.1	< 5.1	< 5.1
SB-7-0-1	1	< 5.1	< 5.1	< 5.1
SB-9-0-1	1	< 5.0	< 5.0	< 5.0
SB-11-0-1	1	< 5.0	< 5.0	< 5.0
SB-12-0-1	1	< 5.1	< 5.1	< 5.1
SB-13-0-1	1	< 4.9	< 4.9	< 4.9
SB-19-0-1	1	< 5.0	< 5.0	< 5.0
SB-20-0-1	1	< 5.1	< 5.1	< 5.1
SB-2-1-2	2	< 5.1	< 5.1	< 5.1
SB-10-1-2	2	< 5.0	< 5.0	< 5.0
B1-3-4	4	ND	< 0.97	ND
B1-2-6	6	ND	< 0.97	ND
B1-1-10	10	ND	< 1.1	ND
B1-5-10	10	ND	30	ND
B1-4-13	13	ND	< 0.96	ND
B1-3-17	17	ND	< 1.0	ND
B1-1-22	22	ND	< 1.1	ND
B1-4-22	22	ND	< 0.97	ND
B1-5-22	22	ND	40	ND
B1-2-25	25	ND	1.9	ND
B1-3-29	29	ND	< 0.98	ND
B1-2-32	32	ND	< 1.1	ND
B1-4-32	32	ND	< 1.0	ND
B1-1-33	33	ND	< 1.0	ND
B1-5-33	33	ND	47	ND
B1-4-48	48	ND	< 1.1	ND
B1-2-49	49	ND	< 1.1	ND
B1-1-53	53	ND	1.3	ND
B1-5-53	53	ND	4.5	ND
B1-3-54	54	ND	1.9	ND
B1-1-80	80	ND	< 1.1	ND
B1-2-80	80	ND	< 1.1	ND
B1-3-80	80	ND	< 1.2	ND
B1-4-80	80	ND	< 1.1	ND
B1-5-80	80	ND	2.4	ND

Depth	cis-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene
	Surrogate Selection		
	µg/kg		
0-5	0.021	68.2	2.1
5-10	0	0.0	0.0
10-20	0	30.0	1.4
20-30	1.9	617.1	65.8
30-40	2.4	268.3	68.9
40-50	2.7	53.7	15.4
50-60	2.5	134.1	75.0
60-70	2.5	134.1	75.0
70-80	4.1	143.1	84.3
80-100	4.1	143.1	84.3

Depth	cis-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene
	Surrogate Selection Final		
	µg/kg		
0-5	0.021	68	2.1
5-10	0.021	68	2.1
10-20	1.9	30	1.4
20-30	1.9	617	66
30-40	2.4	268	69
40-50	2.7	54	15
50-60	2.5	134	75
60-70	2.5	134	75
70-80	4.1	143	84
80-100	4.1	143	84

Notes:
< = Indicates constituent not detected above indicated laboratory reporting limit.
Reported Constituents had concentrations greater than 2 parts per billion.
Depth for Converted Soil Data is the same as the Soil Vapor Data.
Surrogate Selection Final fills in the non-detects in between sets of depths. This is based on the assumption that if it detected at 0-5 and 10-20, it would most likely be detected at 5-10 as well, etc.

Abbreviations:
µg/m³ = Micrograms per cubic meter
= Micrograms per kilogram
NA = Not applicable
ND = Not detected

Table 20

Soil Vapor and Soil Matrix Equilibrium Calculation - Block 2 VLEACH Inputs (Single Polygon) - Tier 1

Infineon Facility

El Segundo, California

Sample ID	Depth	Acetone	Tetrachloroethene	Trichloroethene	Acetone	Tetrachloroethene	Trichloroethene	Sample ID	Depth	Acetone	Tetrachloro-ethene	Trichloro-ethene	Depth	Acetone	Tetrachloro-ethene	Trichloro-ethene	Depth	Acetone	Tetrachloro-ethene	Trichloro-ethene
	Soil Vapor Data				Vapor Converted Soil Data			Measured Soil Data					Surrogate Selection				Surrogate Selection Final			
Units		µg/m³			µg/kg			µg/kg					µg/kg				µg/kg			
SVB2-1	5	278	231	74.6	6.2	0.21	0.08	SBB2-1-0-1	1	< 130	< 5.2	< 5.2								
SVB2-3	5	<5.0	80.7	41.7	ND	0.07	0.04	SBB2-4-0-1	1	< 130	< 5.2	< 5.2	0-5	6.2	28	18	0-5	6.2	28	18
SVB2-5	5	164	28500	10200	3.7	25.5	10.5	SBB2-11-0-2	1	< 130	< 5.2	< 5.2	5-10	0	2.3	21	5-10	219	2.3	21
SVB2-8	5	<10	10300	5430	ND	9.2	5.6	SBB2-13-1-2	1	< 130	< 5.1	< 5.1	10-20	219	34	21	10-20	219	34	21
SVB2-9	5	<10	31300	17310	ND	28.0	17.8	SBB2-10-2-3	2	< 120	< 5.0	< 5.0	20-30	197	53	46	20-30	197	53	46
SVB2-10	5	<10	21860	11340	ND	19.5	11.7	SBB2-5-3-4	3	< 120	21	< 4.9	30-40	0	0	46	30-40	197	59	46
SVB2-11	5	<10	22800	8382	ND	20.4	8.6	SBB2-9-3-4	3	< 130	< 5.1	< 5.1	40-50	58.1	59	38	40-50	58	59	38
SV-B2-4-12	12	<2000	24000	5800	ND	21.5	6.0	B2-3-5	5	ND	4.9	2.1	50-60	0	65	53	50-60	58	65	53
SV-B2-7-13	13	<5000	38000	18000	ND	34.0	18.5	B2-4-5	5	ND	< 0.79	< 1.6	60-70	0	59	39	60-70	0	59	39
SV-B2-5-15	15	2800	8100	2700	62.5	7.2	2.8	B2-5-5	5	ND	< 0.87	< 1.7	70-80	0	55	49	70-80	0	55	49
SV-B2-6-16	16	<5000	32000	19000	ND	28.6	19.5	B2-6-5	5	ND	3.5	1.9	80-100	0	55	49	80-100	0	55	49
SV-B2-3-17	17	3900	10000	4300	87.1	8.9	4.4	B2-8-5	5	ND	1.1	< 1.8								
SV-B2-8-17	17	<5000	28000	20000	ND	25.0	20.6	B2-1-6	6	ND	< 0.96	< 1.9								
SV-B2-1-18	18	3700	11000	5900	82.6	9.8	6.1	B2-7-6	6	ND	2.3	< 1.8								
SV-B2-2-19	19	9800	9200	7900	218.9	8.2	8.1	SBB2-12-7-8	7	< 120	< 4.8	< 4.8								
SV-B2-4-27	27	8000	33000	15000	178.7	29.5	15.4	B2-2-7	7	ND	1.3	< 1.7								
SV-B2-6-28	28	<5000	52000	28000	ND	46.5	28.8	B2-4-12	12	ND	< 0.93	< 1.9								
SV-B2-7-28	28	<5000	46000	26000	ND	41.1	26.7	B2-7-13	13	ND	< 1.2	< 2.3								
SV-B2-8-28	28	8800	59000	45000	196.6	52.8	46.3	B2-5-15	15	ND	< 1.0	< 2.0								
SV-B2-3-29	29	4600	10000	4700	102.8	8.9	4.8	B2-6-16	16	ND	< 1.0	< 2.1								
SV-B2-5-39	39	4300	12000	4900	96.0	10.7	5.0	B2-3-17	17	ND	< 1.0	< 2.0								
SV-B2-1-42	42	2600	21000	12000	58.1	18.8	12.3	B2-8-17	17	ND	< 1.1	< 2.1								
SV-B2-2-46	46	<5000	66000	37000	ND	59.0	38.0	B2-1-18	18	ND	< 0.96	< 1.9								
SV-B2-1-52	52	<5000	31000	17000	ND	27.7	17.5	B2-2-19	19	ND	< 1.2	< 2.4								
SV-B2-3-54	54	<5000	17000	6400	ND	15.2	6.6	B2-4-27	27	ND	< 1.0	< 2.0								
SV-B2-4-55	55	<5000	34000	17000	ND	30.4	17.5	B2-6-28	28	ND	< 1.1	< 2.2								
SV-B2-5-55	55	<5000	18000	6700	ND	16.1	6.9	B2-7-28	28	ND	< 1.1	< 2.1								
SV-B2-6-55	55	<5000	68000	37000	ND	60.8	38.0	B2-8-28	28	ND	< 1.0	< 2.1								
SV-B2-7-55	55	<5000	54000	30000	ND	48.3	30.8	B2-3-29	29	ND	< 1.0	< 2.1								
SV-B2-8-55	55	<5000	73000	52000	ND	65.3	53.4	B2-5-39	39	ND	< 1.0	< 2.1								
SV-B2-3-63	63	<5000	21000	7900	ND	18.8	8.1	B2-1-42	42	ND	< 1.1	< 2.2								
SV-B2-2-65	65	<5000	66000	38000	ND	59.0	39.1	B2-2-46	46	ND	< 1.0	< 2.1								
SV-B2-4-75	75	<5000	34000	17000	ND	30.4	17.5	B2-1-52	52	ND	< 1.1	< 2.2								
SV-B2-1-80	80	<5000	36000	21000	ND	32.2	21.6	B2-3-54	54	ND	< 1.1	< 2.2								
SV-B2-2-80	80	<5000	57000	31000	ND	51.0	31.9	B2-4-55	55	ND	< 1.2	< 2.3								
SV-B2-5-80	80	<5000	28000	9300	ND	25.0	9.6	B2-5-55	55	ND	< 1.1	< 2.2								
SV-B2-6-80	80	<5000	51000	30000	ND	45.6	30.8	B2-6-55	55	ND	< 1.1	< 2.2								
SV-B2-7-80	80	<5000	62000	37000	ND	55.4	38.0	B2-7-55	55	ND	< 1.1	< 2.2								
SV-B2-8-80	80	<5000	57000	48000	ND	51.0	49.3	B2-8-55	55	ND	< 1.1	< 2.2								
								B2-2-65	65	ND	1.7	< 2.1								
								B2-1-80	80	ND	< 1.1	< 2.2								
								B2-2-80	80	ND	1.7	< 2.4								
								B2-4-80	80	ND	1.8	< 2.1								
								B2-5-80	80	ND	< 1.1	< 2.3								
								B2-6-80	80	ND	2.3	< 2.2								
								B2-7-80	80	ND	< 1.4	< 2.7								
								B2-8-80	80	ND	< 1.1	< 2.3								

Notes:

< = Indicates constituent not detected above indicated laboratory reporting limit.

Reported Constituents had concentrations greater than 2 parts per billion

Depth for Converted Soil Data is the same as the Soil Vapor Data

Surrogate Selection Final fills in the non-detects in between sets of depths. This is based on the assumption that if it detected at 0-5 and 10-20, it would most likely be detected at 5-10 as well, etc

Abbreviations:

µg/m³ = Micrograms per cubic meter

µg/kg = Micrograms per kilogram

NA = Not applicable

ND = Not detected

Table 21
VLEACH Inputs - Tier 1a Maximum
Infineon Facility
El Segundo, California

Parameter	Value	Units	Source
Bulk Density	1.67	g/cc	VLEACH Default for sand
Porosity	0.36	--	VLEACH Default for sand
Moisture Content	0.3	--	VLEACH Default for sand
Fraction of Organic Carbon	0.005		USEPA, 2002; 2019
Depth to Groundwater	100	ft bgs	Assumed based on adjacent properties
Average Annual Precipitation	12.0	in/year	(1) Western Regional Climate Center: http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca5114 (2) CIMIS : http://wwwcimis.water.ca.gov – Santa Monica Station
Average Annual Recharge[a]	1.2	in/year	10% annual precipitation
Evaluation Area - Block 1	1.1	acres	Estimated based on site data
Evaluation Area - Block 2	3.4	acres	Estimated based on site data
Evaluation Area Width - Block 1	100	ft	Estimated based on site data
Evaluation Area Length- Block 1	500	ft	Estimated based on site data
Evaluation Area Width - Block 2	300	ft	Estimated based on site data
Evaluation Area Length- Block 2	500	ft	Estimated based on site data
Evaluation period	300	years	Assumed

[a] Average recharge assumed to be 10% of average rainfall.

Abbreviations:
bgs = Below ground surface
cc = Cubic centimeters
CIMIS = California Irrigation Management Information System
ft = Reet
g = Grams
in = Inches
USEPA = United States Environmental Protection Agency

Table 22
Dilution and Attenuation Factor - Tier 1a Maximum
Infineon Facility
El Segundo, California

Parameter	Abbreviation	Value	Units	Source
Hydraulic conductivity	K	100	ft/day	Regional estimate
Hydraulic conductivity	K	36500	ft/yr	
Gradient	i	0.0008	ft/ft	Regional estimate
Mixing zone	d	10	ft	Conservative default
Infiltration rate	I	0.10	ft/yr	10% annual precipitation
Length of source parallel to flow	L	250	ft	Approximate-GWF W/SW
Dilution Factor	DF	13	--	DF = 1 + (KiD/IL) (EPA, 1996)

Abbreviations:
EPA = Environmental Protection Agency
ft = Feet
GWF = Groundwater flow
SW = Southwest
W = West
yr = Year

Table 23
VLEACH Results - Tier 1a Maximum
Infineon Facility
El Segundo, California

Chemical	Years to Reach GW	Max Leachate Concentration at GW		Max Year	Dilution Factor	Max Estimated GW Concentration	Primary WQC	Greater than WQC	Average Leachate Concentration at GW		Dilution Factor	Average Estimated GW Concentration	Primary WQG	Upgradient GW Concentration
		(mg/L)	(µg/L)			(µg/L)	(µg/L)		(mg/L)	(µg/L)		(µg/L)	(µg/L)	(µg/L)
Block 1														
TCE	0	0.169	169	0	13	13	5	TRUE	0.112	112	13	9	5	308 ppb GW1
PCE	0	0.21	210	0	13	17	5	TRUE	0.15	151	13	12	5	782 ppb GW1
cis-1,2-DCE	0	0.0106	10.6	0	13	0.8	6	FALSE	0.0072	7.2	13	0.6	6	
Block 2														
TCE	0	0.098	98	0	13	8	5	TRUE	0.068	68	13	5	5	
PCE	0	0.0808	81	0	13	6	5	TRUE	0.058	58	13	5	5	
Acetone	0	0.64	636	189	13	50	14,000	FALSE	0.46	460	13	36	14,000	

Abbreviations:
µg/L = Micrograms per liter
DCE = Dichloroethene
GW = Groundwater
mg/L = Milligrams per liter
PCE = Tetrachloroethene
ppb = Parts per billion
TCE = Trichloroethene
WQG = Water quality goal

Table 24
VLEACH Inputs - Tier 1b
Infineon Facility
El Segundo, California

Parameter	Value	Units	Source
Bulk Density	1.67	g/cc	VLEACH Default for sand
Porosity	0.36	--	VLEACH Default for sand
Moisture Content	0.3	--	VLEACH Default for sand
Fraction of organic carbon	0.005		USEPA, 2002; 2019
Depth to Ground Water	100	ft bgs	Assumed based on adjacent properties
Average Annual Precipitation	12.0	in/year	(1) Western Regional Climate Center: http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca5114
Average Annual Evapotranspiration	49.7	in/year	(2) CIMIS : http://wwwcimis.water.ca.gov – Santa Monica Station
Number of Net Positive Precip. Months	2	Months	(2) CIMIS : http://wwwcimis.water.ca.gov – Santa Monica Station
Average Annual Percent Precip. Available[a]	10%		Assumed ~10%. January and February have total estimated net positive precipitation (precip - ETo) of 1 inch versus total of 12 inches total precip.
Approx. Percent Green Space Block 1	10%	%	Assumed ~10%. Based on planned redevelopment (Appendix C). Block 1 currently has virtually no surface area uncovered by hardscape.
Approx. Percent Green Space Block 2	10%	%	Assumed ~10% based on planned redevelopment (Appendix C). Block 2 currently has virtually no surface area uncovered by hardscape.
Average Annual Recharge-Block 1[a]	0.12	in/year	Annual precipitation x % precip available x % uncovered
Average Annual Recharge-Block 2[a]	0.12	in/year	Annual precipitation x % precip available x % uncovered
Evaluation Area - Block 1	1.1	acres	Estimated based on site data
Evaluation Area - Block 2	3.4	acres	Estimated based on site data
Evaluation Area Width - Block 1	100	ft	Estimated based on site data
Evaluation Area Length - Block 1	500	ft	Estimated based on site data
Evaluation Area Width - Block 2	300	ft	Estimated based on site data
Evaluation Area Length - Block 2	500	ft	Estimated based on site data
Evaluation period	300	years	Assumed

[a] Average recharge assumed to be 10% of average net precipitation.

Abbreviations:
bgs = Below ground surface
cc = Cubic centimeters
CIMIS = California Irrigation Management Information System
ft = Feet
g = Grams
in = Inches
USEPA = United States Environmental Protection Agency

Table 25
Dilution and Attenuation Factor - Tier 1b
Infineon Facility
El Segundo, California

Parameter	Abbreviation	Value	Units	Source
Hydraulic conductivity	K	100	ft/day	Regional estimate
Hydraulic conductivity	K	36500	ft/yr	
Gradient	i	0.0008	ft/ft	Regional estimate
Mixing zone	d	10	ft	Conservative default
Infiltration rate	I	0.01	ft/yr	Table 28
Length of source parallel to flow	L	250	ft	Approximate-GWF W/SW
Dilution Factor	DF	120	--	DF = 1 + (KiD/IL) (EPA, 1996)

Abbreviations:
EPA = Environmental Protection Agency
ft = Feet
GWF = Groundwater flow
SW = Southwest
W= West
yr = Year

Table 26
VLEACH Results - Tier 1b
Infineon Facility
El Segundo, California

Chemical	Years to Reach GW	Max Leachate Concentration at GW (mg/L)	Max Leachate Concentration at GW (µg/L)	Max Year	Dilution Factor	Max Estimated GW Concentration	Primary WQC (µg/L)	Greater than WQC
Block 1								
TCE	0	0.169	169	0	120	1.4	5	FALSE
PCE	0	0.21	210	0	120	1.8	5	FALSE
Block 2								
TCE	0	0.098	98	0	120	0.8	5	FALSE
PCE	0	0.0808	81	0	120	0.7	5	FALSE

Abbreviations:
µg/L = Micrograms per liter
DCE = Dichloroethene
GW = Groundwater
mg/L = Milligrams per liter
PCE = Tetrachloroethene
TCE = Trichloroethene
WQG = Water quality goal

Table 27
Soil Vapor and Soil Matrix Equilibrium Calculation - Tier 2 VLEACH Inputs
Infineon Facility
El Segundo, California

Soil Vapor Polygon Samples (2017 & 2018)

Polygon Identification	Sample Date	Sample Depth Interval	Sample Depth (feet bgs)	Sample Identification (Soil Vapor)	PCE ($\mu g/m^3$)	TCE (µg/m3)
Block 1						
B1-1	17-Mar-17	0-10	5	SV-18	**4,690**	**2,080**
B1-1	27-Mar-18	20-30	22	SV-B1-1-22	**130,000**	**64,000**
B1-1	27-Mar-18	30-40	33	SV-B1-1-33	**120,000**	**67,000**
B1-1	27-Mar-18	50-60	53	SV-B1-1-53	**150,000**	**73,000**
B1-1	27-Mar-18	80-90	80	SV-B1-1-80	**160,000**	**82,000**
B1-2	17-Mar-17	0-10	5	SV-14	**9,020**	**886**
B1-2	27-Mar-18	20-30	25	SV-B1-2-25	**36,000**	**7,700**
B1-2	27-Mar-18	30-40	32	SV-B1-2-32	**45,000**	**11,000**
B1-2	27-Mar-18	40-50	49	SV-B1-2-49	**60,000**	**15,000**
B1-2	27-Mar-18	80-90	80	SV-B1-2-80	**81,000**	**21,000**
B1-3	27-Mar-18	10-20	17	SV-B1-3-17	**23,000**	**1,400**
B1-3	27-Mar-18	20-30	29	SV-B1-3-29	**40,000**	**3,900**
B1-3	27-Mar-18	50-60	54	SV-B1-3-54	**63,000**	**7,400**
B1-3	27-Mar-18	80-90	80	SV-B1-3-80	**90,000**	**12,000**
B1-4	28-Mar-18	20-30	22	SV-B1-4-22	**20,000**	**1,400**
B1-4	28-Mar-18	30-40	32	SV-B1-4-32	**49,000**	**7,300**
B1-4	27-Mar-18	40-50	48	SV-B1-4-48	**55,000**	**8,700**
B1-4	27-Mar-18	80-90	80	SV-B1-4-80	**75,000**	**12,000**
B1-5	17-Mar-17	0-10	5	SV-10	**76,300**	**574**
B1-5	17-Mar-17	0-10	5	SV-15	**3,570**	**1,290**
B1-5	28-Mar-18	20-30	22	SV-B1-5-22	**690,000**	**7,900**
B1-5	28-Mar-18	30-40	33	SV-B1-5-33	**300,000**	**18,000**
B1-5	28-Mar-18	50-60	53	SV-B1-5-53	**150,000**	**22,000**
B1-5	28-Mar-18	80-90	80	SV-B1-5-80	**150,000**	**25,000**
Block 2						
B2-1	2-Apr-18	10-20	18	SV-B2-1-18	**11,000**	**5,900**
B2-1	2-Apr-18	40-50	42	SV-B2-1-42	**21,000**	**12,000**
B2-1	2-Apr-18	50-60	52	SV-B2-1-52	**31,000**	**17,000**
B2-1	2-Apr-18	80-90	80	SV-B2-1-80	**36,000**	**21,000**
B2-2	20-Mar-17	0-10	5	SVB2-3	**81**	**42**
B2-2	29-Mar-18	10-20	19	SV-B2-2-19	**9,200**	**7,900**
B2-2	29-Mar-18	40-50	46	SV-B2-2-46	**66,000**	**37,000**
B2-2	29-Mar-18	60-70	65	SV-B2-2-65	**66,000**	**38,000**
B2-2	29-Mar-18	80-90	80	SV-B2-2-80	**57,000**	**31,000**
B2-3	20-Mar-17	0-10	5	SVB2-1		
B2-3	20-Mar-17	0-10	5	SVB2-8	**10,300**	**5,430**
B2-3	29-Mar-18	10-20	17	SV-B2-3-17	**10,000**	**4,300**
B2-3	29-Mar-18	20-30	29	SV-B2-3-29	**10,000**	**4,700**
B2-3	29-Mar-18	50-60	54	SV-B2-3-54	**17,000**	**6,400**
B2-3	28-Mar-18	60-70	63	SV-B2-3-63	**21,000**	**7,900**
B2-4	2-Apr-18	10-20	12	SV-B2-4-12	**24,000**	**5,800**
B2-4	30-Mar-18	20-30	27	SV-B2-4-27	**33,000**	**15,000**
B2-4	30-Mar-18	50-60	55	SV-B2-4-55	**34,000**	**17,000**
B2-4	30-Mar-18	70-80	75	SV-B2-4-75	**34,000**	**17,000**
B2-5	20-Mar-17	0-10	5	SVB2-11	**22,800**	**8,382**
B2-5	29-Mar-18	10-20	15	SV-B2-5-15	**8,100**	**2,700**
B2-5	29-Mar-18	30-40	39	SV-B2-5-39	**12,000**	**4,900**
B2-5	29-Mar-18	50-60	55	SV-B2-5-55	**18,000**	**6,700**
B2-5	29-Mar-18	80-90	80	SV-B2-5-80	**28,000**	**9,300**
B2-6	20-Mar-17	0-10	5	SVB2-10	**21,860**	**11,340**
B2-6	28-Mar-18	10-20	16	SV-B2-6-16	**32,000**	**19,000**
B2-6	28-Mar-18	20-30	28	SV-B2-6-28	**52,000**	**28,000**
B2-6	28-Mar-18	50-60	55	SV-B2-6-55	**68,000**	**37,000**
B2-6	29-Mar-18	80-90	80	SV-B2-6-80	**51,000**	**30,000**
B2-7	20-Mar-17	0-10	5	SVB2-5	**28,500**	**10,200**
B2-7	28-Mar-18	10-20	13	SV-B2-7-13	**38,000**	**18,000**
B2-7	28-Mar-18	20-30	28	SV-B2-7-28	**46,000**	**26,000**
B2-7	29-Mar-18	50-60	55	SV-B2-7-55	**54,000**	**30,000**
B2-7	28-Mar-18	80-90	80	SV-B2-7-80	**62,000**	**37,000**
B2-8	20-Mar-17	0-10	5	SVB2-9	**31,300**	**17,310**
B2-8	30-Mar-18	10-20	17	SV-B2-8-17	**28,000**	**20,000**
B2-8	30-Mar-18	20-30	28	SV-B2-8-28	**59,000**	**45,000**
B2-8	30-Mar-18	50-60	55	SV-B2-8-55	**73,000**	**52,000**
B2-8	30-Mar-18	80-90	80	SV-B2-8-80	**57,000**	**48,000**

Soil Vapor Converted Soil Data (ug/kg)

Polygon Identification	Sample Depth Interval	PCE (µg/kg)	TCE (µg/kg)
Block 1			
B1-1	0-10	4.2	2.1
B1-1	20-30	116.3	65.8
B1-1	30-40	107.3	68.9
B1-1	50-60	134.1	75.0
B1-1	80-90	143.1	84.3
B1-2	0-10	8.1	0.9
B1-2	20-30	32.2	7.9
B1-2	30-40	40.2	11.3
B1-2	40-50	53.7	15.4
B1-2	80-90	72.4	21.6
B1-3	10-20	20.6	1.4
B1-3	20-30	35.8	4.0
B1-3	50-60	56.3	7.6
B1-3	80-90	80.5	12.3
B1-4	20-30	17.9	1.4
B1-4	30-40	43.8	7.5
B1-4	40-50	49.2	8.9
B1-4	80-90	67.1	12.3
B1-5	0-10	68.2	0.6
B1-5	0-10	3.2	1.3
B1-5	20-30	617.1	8.1
B1-5	30-40	268.3	18.5
B1-5	50-60	134.1	22.6
B1-5	80-90	134.1	25.7
Block 2			
B2-1	10-20	9.8	6.1
B2-1	40-50	18.8	12.3
B2-1	50-60	27.7	17.5
B2-1	80-90	32.2	21.6
B2-2	0-10	0.1	0.0
B2-2	10-20	8.2	8.1
B2-2	40-50	59.0	38.0
B2-2	60-70	59.0	39.1
B2-2	80-90	51.0	31.9
B2-3	0-10	0.0	0.0
B2-3	0-10	9.2	5.6
B2-3	10-20	8.9	4.4
B2-3	20-30	8.9	4.8
B2-3	50-60	15.2	6.6
B2-3	60-70	18.8	8.1
B2-4	10-20	21.5	6.0
B2-4	20-30	29.5	15.4
B2-4	50-60	30.4	17.5
B2-4	70-80	30.4	17.5
B2-5	0-10	20.4	8.6
B2-5	10-20	7.2	2.8
B2-5	30-40	10.7	5.0
B2-5	50-60	16.1	6.9
B2-5	80-90	25.0	9.6
B2-6	0-10	19.5	11.7
B2-6	10-20	28.6	19.5
B2-6	20-30	46.5	28.8
B2-6	50-60	60.8	38.0
B2-6	80-90	45.6	30.8
B2-7	0-10	25.5	10.5
B2-7	10-20	34.0	18.5
B2-7	20-30	41.1	26.7
B2-7	50-60	48.3	30.8
B2-7	80-90	55.4	38.0
B2-8	0-10	28.0	17.8
B2-8	10-20	25.0	20.6
B2-8	20-30	52.8	46.3
B2-8	50-60	65.3	53.4
B2-8	80-90	51.0	49.3

Soil Polygon Samples (2017 & 2018)

Polygon Identification	Sample Date	Sample Depth Interval	Sample Depth (feet bgs)	Sample Identification (Soil)	PCE (µg/kg)	TCE (µg/kg)
Block 1						
B1-1	14-Mar-17	0-10	1	SB-19-0-1	< 5.0	< 5.0
B1-1	14-Mar-17	0-10	1	SB-20-0-1	< 5.1	< 5.1
B1-1	19-Mar-18	10-20	10	B1-1-10	*< 1.1*	NS
B1-2	23-Mar-18	0-10	6	B1-2-6	*< 0.97*	NS
B1-2	23-Mar-18	30-40	32	B1-2-32	*< 1.1*	NS
B1-2	23-Mar-18	40-50	49	B1-2-49	*< 1.1*	NS
B1-2	23-Mar-18	80-90	80	B1-2-80	*< 1.1*	NS
B1-3	21-Mar-18	0-10	4	B1-3-4	*< 0.97*	NS
B1-3	21-Mar-18	10-20	17	B1-3-17	*< 1.0*	NS
B1-3	21-Mar-18	20-30	29	B1-3-29	*< 0.98*	NS
B1-3	21-Mar-18	50-60	54	B1-3-54	**1.9**	NS
B1-3	21-Mar-18	80-90	80	B1-3-80	*< 1.2*	NS
B1-4	14-Mar-17	0-10	2	SB-2-1-2	< 5.1	< 5.1
B1-4	14-Mar-17	0-10	1	SB-3-0-1	< 5.0	< 5.0
B1-4	14-Mar-17	0-10	1	SB-4-0-1	< 5.1	< 5.1
B1-4	14-Mar-17	0-10	1	SB-7-0-1	< 5.1	< 5.1
B1-4	14-Mar-17	0-10	1	SB-9-0-1	< 5.0	< 5.0
B1-4	22-Mar-18	10-20	13	B1-4-13	*< 0.96*	NS
B1-4	22-Mar-18	20-30	22	B1-4-22	*< 0.97*	NS
B1-4	22-Mar-18	30-40	32	B1-4-32	*< 1.0*	NS
B1-4	22-Mar-18	40-50	48	B1-4-48	*< 1.1*	NS
B1-4	22-Mar-18	80-90	80	B1-4-80	*< 1.1*	NS
B1-5	14-Mar-17	0-10	1	SB-5-0-1	< 5.0	< 5.0
B1-5	14-Mar-17	0-10	1	SB-6-0-1	< 5.1	< 5.1
B1-5	14-Mar-17	0-10	1	SB-11-0-1	< 5.0	< 5.0
B1-5	14-Mar-17	0-10	1	SB-12-0-1	< 5.1	< 5.1
B1-5	14-Mar-17	0-10	1	SB-13-0-1	< 4.9	< 4.9
B1-5	20-Mar-18	10-20	10	B1-5-10	**30**	NS
B1-5	20-Mar-18	20-30	22	B1-5-22	**40**	NS
B1-5	20-Mar-18	30-40	33	B1-5-33	**47**	NS
B1-5	20-Mar-18	50-60	53	B1-5-53	**4.5**	NS
B1-5	20-Mar-18	80-90	80	B1-5-80	**2.4**	NS
Block 2						
B2-1	29-Mar-18	0-10	6	B2-1-6	*< 0.96*	*< 1.9*
B2-1	29-Mar-18	10-20	18	B2-1-18	*< 0.96*	*< 1.9*
B2-1	29-Mar-18	40-50	42	B2-1-42	*< 1.1*	*< 2.2*
B2-1	29-Mar-18	50-60	52	B2-1-52	*< 1.1*	*< 2.2*
B2-1	29-Mar-18	80-90	80	B2-1-80	*< 1.1*	*< 2.2*
B2-2	12-Mar-18	0-10	7	B2-2-7	**1.3**	*< 1.7*
B2-2	12-Mar-18	10-20	19	B2-2-19	*< 1.2*	*< 2.4*
B2-2	12-Mar-18	40-50	46	B2-2-46	*< 1.0*	*< 2.1*
B2-2	12-Mar-18	60-70	65	B2-2-65	**1.7**	*< 2.1*
B2-2	12-Mar-18	80-90	80	B2-2-80	**1.7**	*< 2.4*
B2-3	15-Mar-17	0-10	1	SBB2-1-0-1	< 5.2	< 5.2
B2-3	15-Mar-17	0-10	1	SBB2-4-0-1	< 5.2	< 5.2
B2-3	13-Mar-18	0-10	5	B2-3-5	**4.9**	**2.1**
B2-3	13-Mar-18	10-20	17	B2-3-17	*< 1.0*	*< 2.0*
B2-3	13-Mar-18	20-30	29	B2-3-29	*< 1.0*	*< 2.1*
B2-3	13-Mar-18	50-60	54	B2-3-54	*< 1.1*	*< 2.2*
B2-4	28-Mar-18	0-10	5	B2-4-5	*< 0.79*	*< 1.6*
B2-4	28-Mar-18	10-20	12	B2-4-12	*< 0.93*	*< 1.9*
B2-4	28-Mar-18	20-30	27	B2-4-27	*< 1.0*	*< 2.0*
B2-4	28-Mar-18	50-60	55	B2-4-55	*< 1.2*	*< 2.3*
B2-4	28-Mar-18	80-90	80	B2-4-80	**1.8**	*< 2.1*
B2-5	15-Mar-17	0-10	2	SBB2-11-0-2	< 5.2	< 5.2
B2-5	15-Mar-17	0-10	2	SBB2-13-1-2	< 5.1	< 5.1
B2-5	15-Mar-17	0-10	8	SBB2-12-7-8	< 4.8	< 4.8
B2-5	26-Mar-18	0-10	5	B2-5-5	*< 0.87*	*< 1.7*
B2-5	26-Mar-18	10-20	15	B2-5-15	*< 1.0*	*< 2.0*
B2-5	26-Mar-18	30-40	39	B2-5-39	*< 1.0*	*< 2.1*
B2-5	26-Mar-18	50-60	55	B2-5-55	*< 1.1*	*< 2.2*
B2-5	26-Mar-18	80-90	80	B2-5-80	*< 1.1*	*< 2.3*
B2-6	15-Mar-17	0-10	3	SBB2-10-2-3	< 5.0	< 5.0
B2-6	16-Mar-18	0-10	5	B2-6-5	**3.5**	**1.9**
B2-6	16-Mar-18	10-20	16	B2-6-16	*< 1.0*	*< 2.1*
B2-6	16-Mar-18	20-30	28	B2-6-28	*< 1.1*	*< 2.2*
B2-6	16-Mar-18	50-60	55	B2-6-55	*< 1.1*	*< 2.2*
B2-6	16-Mar-18	80-90	80	B2-6-80	**2.3**	*< 2.2*
B2-7	15-Mar-17	0-10	4	SBB2-5-3-4	**21**	< 4.9
B2-7	15-Mar-18	0-10	6	B2-7-6	**2.3**	*< 1.8*
B2-7	15-Mar-18	10-20	13	B2-7-13	*< 1.2*	*< 2.3*
B2-7	15-Mar-18	20-30	28	B2-7-28	*< 1.1*	*< 2.1*
B2-7	15-Mar-18	50-60	55	B2-7-55	*< 1.1*	*< 2.2*
B2-7	15-Mar-18	80-90	80	B2-7-80	*< 1.4*	*< 2.7*
B2-8	15-Mar-17	0-10	4	SBB2-9-3-4	< 5.1	< 5.1
B2-8	27-Mar-18	0-10	5	B2-8-5	**1.1**	*< 1.8*
B2-8	27-Mar-18	10-20	17	B2-8-17	*< 1.1*	*< 2.1*
B2-8	27-Mar-18	20-30	28	B2-8-28	*< 1.0*	*< 2.1*
B2-8	27-Mar-18	50-60	55	B2-8-55	*< 1.1*	*< 2.2*
B2-8	27-Mar-18	80-90	80	B2-8-80	*< 1.1*	*< 2.3*

Surrogate Selection

Sample Depth Interval	PCE (µg/kg)	TCE (µg/kg)
Block 1 - Polygon 1		
0-10	4.2	2.1
10-20	0	0
20-30	116.3	65.8
30-40	107.3	68.9
40-50	0	0
50-60	134.1	75.0
60-70	0	0
70-80	0	0
80-90	143.1	84.3
90-100	143.1	84.3
Block 1 - Polygon 3		
0-10	20.6	1.4
10-20	0	0
20-30	35.8	4.0
30-40	0	0
40-50	0	0
50-60	56.3	7.6
60-70	0	0
70-80	0	0
80-90	80.5	12.3
Block 1 - Polygon 5		
0-10	68.2	1.3
10-20	30	0
20-30	617.1	8.1
30-40	268.3	18.5
40-50	0	0
50-60	134.1	22.6
60-70	0	0
70-80	0	0
80-90	134.1	25.7
Block 2 - Polygon 1		
0-10	0	0
10-20	9.8	6.1
20-30	0	0
30-40	0	0
40-50	18.8	12.3
50-60	27.7	17.5
60-70	0	0
70-80	0	0
80-90	32.2	21.6
Block 2 - Polygon 3		
0-10	9.2	5.6
10-20	8.9	4.4
20-30	8.9	4.8
30-40	0	0
40-50	0	0
50-60	15.2	6.6
60-70	18.8	8.1
70-80	0	0
80-90	0	0
Block 2 - Polygon 5		
0-10	20.4	8.6
10-20	7.2	2.8
20-30	0	0
30-40	10.7	5.0
40-50	0	0
50-60	16.1	6.9
60-70	0	0
70-80	0	0
80-90	25.0	9.6
Block 2 - Polygon 7		
0-10	25.5	10.5
10-20	34.0	18.5
20-30	41.1	26.7
30-40	0	0
40-50	0	0
50-60	48.3	30.8
60-70	0	0
70-80	0	0
80-90	55.4	38.0

Surrogate Selection

Sample Depth Interval	PCE (µg/kg)	TCE (µg/kg)
Block 1 - Polygon 2		
0-10	8.1	0.9
10-20	0	0
20-30	32.195714	7.9
30-40	40.2	11.3
40-50	53.7	15.4
50-60	0	0
60-70	0	0
70-80	0	0
80-90	72.4	21.6
90-100	72.4	21.6
Block 1 - Polygon 4		
0-10	0	0
10-20	0	0
20-30	17.9	1.4
30-40	43.8	7.5
40-50	49.2	8.9
50-60	0	0
60-70	0	0
70-80	0	0
80-90	67.1	12.3
Block 2 - Polygon 2		
0-10	1.3	0.04
10-20	8.2	8.1
20-30	0	0
30-40	7.2	2.8
40-50	59.0	38.0
50-60	0	0
60-70	59.0	39.1
70-80	0	0
80-90	51.0	31.9
Block 2 - Polygon 4		
0-10	0	0
10-20	21.5	6.0
20-30	29.5	15.4
30-40	0	0
40-50	0	0
50-60	30.4	17.5
60-70	0	0
70-80	30.4	17.5
80-90	0	0
Block 2 - Polygon 6		
0-10	19.5	11.7
10-20	28.6	19.5
20-30	46.5	28.8
30-40	0	0
40-50	0	0
50-60	60.8	38.0
60-70	0	0
70-80	0	0
80-90	45.6	30.8
Block 2 - Polygon 8		
0-10	28.0	18
10-20	25.0	20.6
20-30	52.8	46.3
30-40	0	0
40-50	0	0
50-60	65.3	53.4
60-70	0	0
70-80	0	0
80-90	51.0	49.3

Surrogate Selection-Final

Sample Depth Interval	PCE (µg/kg)	TCE (µg/kg)
Block 1 - Polygon 1		
0-10	4.2	2.1
10-20	60	34
20-30	116.3	65.8
30-40	107.3	68.9
40-50	121	72
50-60	134.1	75.0
60-70	134.1	75.0
70-80	143.1	84.3
80-90	143.1	84.3
90-100	143.1	84.3
Block 1 - Polygon 3		
0-10	20.6	1.4
10-20	28	3
20-30	35.8	4.0
30-40	46	6
40-50	46.1	5.8
50-60	56.3	7.6
60-70	56.3	7.6
70-80	80.5	12.3
80-90	80.5	12.3
90-100	80.5	12.3
Block 1 - Polygon 5		
0-10	68.2	1.3
10-20	30	4.7
20-30	617.1	8.1
30-40	268.3	18.5
40-50	201.2	20.6
50-60	134.1	22.6
60-70	134.1	22.6
70-80	134.1	25.7
80-90	134.1	25.7
90-100	134.1	25.7
Block 2 - Polygon 1		
0-10	0	0.0
10-20	9.8	6.1
20-30	14.3	9.2
30-40	14.3	9.2
40-50	18.8	12.3
50-60	27.7	17.5
60-70	27.7	17.5
70-80	32.2	21.6
80-90	32.2	21.6
90-100	32.2	21.6
Block 2 - Polygon 3		
0-10	9.2	5.6
10-20	8.9	4.4
20-30	8.9	4.8
30-40	8.9	4.8
40-50	15.2	6.6
50-60	15.2	6.6
60-70	18.8	8.1
70-80	19	8
80-90	0	0
90-100	0	0
Block 2 - Polygon 5		
0-10	20.4	8.6
10-20	7.2	2.8
20-30	9.0	3.9
30-40	10.7	5.0
40-50	13.4	6.0
50-60	16.1	6.9
60-70	16.1	6.9
70-80	25.0	9.6
80-90	25.0	9.6
90-100	25.0	9.6
Block 2 - Polygon 7		
0-10	25.5	10.5
10-20	34.0	18.5
20-30	41.1	26.7
30-40	41.1	26.7
40-50	48.3	30.8
50-60	48.3	30.8
60-70	48.3	30.8
70-80	55.4	38.0
80-90	55.4	38.0
90-100	55.4	38.0

Surrogate Selection-Final

Sample Depth Interval	PCE (µg/kg)	TCE (µg/kg)
Block 1 - Polygon 2		
0-10	8.1	0.9
10-20	20	4
20-30	32.2	7.9
30-40	40.2	11.3
40-50	53.7	15.4
50-60	53.7	15.4
60-70	63.0	18.5
70-80	72.4	21.6
80-90	72.4	21.6
90-100	72.4	21.6
Block 1 - Polygon 4		
0-10	0	0
10-20	0	0
20-30	17.9	1.4
30-40	43.8	7.5
40-50	49.2	8.9
50-60	49.2	8.9
60-70	58.1	10.6
70-80	67.1	12.3
80-90	67.1	12.3
90-100	67.1	12.3
Block 2 - Polygon 2		
0-10	1.3	0.04
10-20	8.2	8.1
20-30	7.7	5.4
30-40	7.2	2.8
40-50	59.0	38.0
50-60	59.0	38.5
60-70	59.0	39.1
70-80	55.0	35.5
80-90	51.0	31.9
90-100	51.0	31.9
Block 2 - Polygon 4		
0-10	0	0
10-20	21.5	6.0
20-30	29.5	15.4
30-40	29.5	15.4
40-50	30.4	17.5
50-60	30.4	17.5
60-70	30.4	17.5
70-80	30.4	17.5
80-90	30	17
90-100	30.4	17.5
Block 2 - Polygon 6		
0-10	19.5	11.7
10-20	28.6	19.5
20-30	46.5	28.8
30-40	46.5	28.8
40-50	60.8	38.0
50-60	60.8	38.0
60-70	60.8	38.0
70-80	45.6	30.8
80-90	45.6	30.8
90-100	45.6	30.8
Block 2 - Polygon 8		
0-10	28.0	18
10-20	25.0	20.6
20-30	52.8	46.3
30-40	52.8	46.3
40-50	65.3	53.4
50-60	65.3	53.4
60-70	65.3	53.4
70-80	51.0	49.3
80-90	51.0	49.3
90-100	51.0	49.3

Table 28
VLEACH Inputs - Tier 2
Infineon Facility
El Segundo, California

Parameter	Value	Units	Source
Bulk Density	1.67	g/cc	VLEACH Default for sand
Porosity	0.36	--	VLEACH Default for sand
Moisture Content	0.3	--	VLEACH Default for sand
Fraction of organic carbon	0.005		USEPA, 2002; 2019
Depth to Groundwater	100	ft bgs	Assumed based on adjacent properties
Average Annual Precipitation	12	in/year	(1) Western Regional Climate Center: http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca5114
Average Annual Evapotranspiration	50	in/year	(2) CIMIS : http://wwwcimis.water.ca.gov – Santa Monica Station
Number of Net Positive Precip. Months	2	Months	(2) CIMIS : http://wwwcimis.water.ca.gov – Santa Monica Station
Average Annual Percent Precip. Available[a]	10%		Assumed ~10%. January and February have total estimated net positive precipitation (precip - ETo) of 1 inch versus total of 12 inches total precip.
Approx. Percent Green Space Block 1	10%	%	Assumed ~10%. Based on planned redevelopment (see Appendices). Block 1 currently has nominal surface area uncovered by hardscape.
Approx. Percent Green Space Block 2	10%	%	Assumed ~10% based on planned redevelopment (see Appendices). Block 2 currently has virtually no surface area uncovered by hardscape.
Average Annual Recharge-Block 1[a]	0.12	in/year	Annual precipitation x % precip available x % uncovered
Average Annual Recharge-Block 1[a]	0.010	ft/year	
Average Annual Recharge-Block 2[a]	0.12	in/year	Annual precipitation x % precip available x % uncovered
Average Annual Recharge-Block 2[a]	0.010	ft/year	
Evaluation Area - Block 1 - Polygon 1	32,800	ft^2	Estimated based on site data
Evaluation Area - Block 1 - Polygon 2	11,000	ft^2	Estimated based on site data
Evaluation Area - Block 1 - Polygon 3	7,125	ft^2	Estimated based on site data
Evaluation Area - Block 1 - Polygon 4	5,900	ft^2	Estimated based on site data
Evaluation Area - Block 1 - Polygon 5	9,750	ft^2	Estimated based on site data
Evaluation Area - Block 2 - Polygon 1	18,500	ft^2	Estimated based on site data
Evaluation Area - Block 2 - Polygon 2	14,750	ft^2	Estimated based on site data
Evaluation Area - Block 2 - Polygon 3	25,900	ft^2	Estimated based on site data
Evaluation Area - Block 2 - Polygon 4	12,525	ft^2	Estimated based on site data
Evaluation Area - Block 2 - Polygon 5	8,450	ft^2	Estimated based on site data
Evaluation Area - Block 2 - Polygon 6	6,650	ft^2	Estimated based on site data
Evaluation Area - Block 2 - Polygon 7	8,050	ft^2	Estimated based on site data
Evaluation Area - Block 2 - Polygon 8	12,025	ft^2	Estimated based on site data
Evaluation period	300	years	Assumed

[a] Average recharge assumed to be 10% of average rainfall

Abbreviations:
bgs = Below ground surface
cc = Cubic centimeters
CIMIS = California Irrigation Management Information System
ft = Feet
g = Grams
in = Inches
USEPA = United States Environmental Protection Agency

Table 29
VLEACH Results - Tier 2
Infineon Facility
El Segundo, California

Time (years)	Approximate Area (square feet)	Infiltration Rate (feet/year)	Volume Water (cu.feet/year)	Modeled Mass to GW (g/year)	Leachate Concentration (µg/L/year)	Mixing Zone Thickness (feet)	Mixing Zone Porosity (feet)	Mixing Zone Concentration (µg/L)[a]	Primary WQG (µg/L)	Greater than WQC
Block 1 TCE (Cumulative Across Polygons 1 through 5)										
10	6.7 E+4	0.01	665	5.3	279	10	0.33	0.84	5	FALSE
50	6.7 E+4	0.01	665	5.4	287	10	0.33	0.87	5	FALSE
100	6.7 E+4	0.01	665	5.4	287	10	0.33	0.87	5	FALSE
300	6.7 E+4	0.01	665	4.7	251	10	0.33	0.76	5	FALSE
Block 1 PCE (Cumulative Across Polygons 1 through 5)										
10	6.7 E+4	0.01	665	9.5	505	10	0.33	1.53	5	FALSE
50	6.7 E+4	0.01	665	9.4	500	10	0.33	1.51	5	FALSE
100	6.7 E+4	0.01	665	9.2	491	10	0.33	1.48	5	FALSE
300	6.7 E+4	0.01	665	8.3	440	10	0.33	1.33	5	FALSE
Block 2 TCE (Cumulative Across Polygons 1 through 8)										
10	1.1 E+5	0.01	1069	3.6	121	10	0.33	0.36	5	FALSE
50	1.1 E+5	0.01	1069	3.8	124	10	0.33	0.37	5	FALSE
100	1.1 E+5	0.01	1069	3.8	124	10	0.33	0.38	5	FALSE
300	1.1 E+5	0.01	1069	3.3	110	10	0.33	0.33	5	FALSE
Block 2 PCE (Cumulative Across Polygons 1 through 8)										
10	1.1 E+5	0.01	1069	4.4	145	10	0.33	0.44	5	FALSE
50	1.1 E+5	0.01	1069	4.4	144	10	0.33	0.44	5	FALSE
100	1.1 E+5	0.01	1069	4.3	142	10	0.33	0.43	5	FALSE
300	1.1 E+5	0.01	1069	3.9	128	10	0.33	0.39	5	FALSE

Notes:
a. Mass flux x 1e6 µg/g) / (((Area x Infiltration rate) + (Area x Mixing Zone Porosity x Thickness))*28.32 L/ft3)

Abbreviations:
µg/L = Micrograms per liter
cu. = Cubic
g = Grams
PCE = Tetrachloroethene
TCE = Trichloroethene
WQG = Water quality goal

Table 30
Summary of Estimated Hazards Indices and Risks
Infineon Facility
El Segundo, California

	Block 1			Block 2			
Exposure Scenario/Location	**HI**	**ILCR**	**Notes**	**Location**	**HI**	**ILCR**	**Notes**
Soil							
Future Commercial Worker, Block 1	0.06	2 E-8		Future Commercial Worker, Block 2	0.03	2 E-7	
Future Construction Worker, Block 1	1, SC=0.6	1 E-9		Future Construction Worker, Block 2	0.66	2 E-8	
Soil Vapor/ Indoor Air							
Soil Vapor (0 to 5 feet bgs)[a]							
Future Commercial Worker, Block 1	20	1 E-3	Use Measured Indoor Air	Future Commercial Worker, Block 2	65	6 E-4	Use Measured Indoor Air
Soil Vapor (>5 feet bgs)[a]							
Future Commercial Worker, Block 1	401	1 E-2	Use Measured Indoor Air	Future Commercial Worker, Block 2	192	2 E-3	Use Measured Indoor Air
Measured Indoor Air							
Future Commercial Worker, Block 1	0.013	0 E+0		Future Commercial Worker, Block 2	0.66	4E-6 (regional BG)	Benzene - Same as regional bg; SV<SL[c]
Cumulative Risk[b]							
Future Commercial Worker, Block 1-Soil and Theoretical Soil Vapor Migration	20	1 E-3	Use Measured Indoor Air	Future Commercial Worker, Block 2-Soil and Theoretical Soil Vapor Migration	65	6 E-4	Use Measured Indoor Air
Future Commercial Worker, Block 1-Soil and Measured Indoor Air	0.07	2 E-8		Future Commercial Worker, Block 2-Soil and Measured Indoor Air	0.69	2 E-7	Benzene not included- Same as regional bg
Future Construction Worker, Block 1	1, SC=0.6	1 E-9		Future Construction Worker, Block 2	0.66	2 E-8	

Notes:

> = Greater than

[a] Soil vapor intrusion estimates based on default attenuation factor 0.03. Measured indoor air concentrations suggest vapor intrusion pathway may not be complete as the main COPCs (PCE and TCE) are not detected, but requires verification post redevelopment.

[b] Soil vapor risks added to soil direct contact risks for completeness. Indoor air measurements suggest VI pathway may not be complete, indoor air measurements provide a direct indicator of potential impact directly. However, this requires verification post-redevelopment.

[c] Maximum indoor air concentration same as regional background. Max 0 to 5 foot soil vapor less than most conservative vapor screening value using attenuation of 0.03. No direct evidence of VI based on main COPCs PCE and TCE not detected in air; requires verification post redevelopment.

Greater than risk thresholds

Less than risk thresholds

Abbreviations:

bgs = Below ground surface

COPC = Chemicals of potential concern

HI = Health index

ILCR = Incremental Lifetime Cancer Risk

PCE = Tetrachloroethene

APPENDIX A HISTORICAL ENVIRONMENTAL RECORDS

FLUOR DANIEL GTI

CLOSURE REPORT &
VERIFICATION PLAN
INTERNATIONAL RECTIFIER CORPORATION
233 KANSAS STREET
EL SEGUNDO, CALIFORNIA 90245

July 3, 1996

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INTRODUCTION

International Rectifier Corporation (IRC) operates an electronics manufacturing facility at 233 Kansas Street in El Segundo, California. The location of the property is shown in Figure 1. A 3,000-gallon underground storage tank was used to collect spent solvents from the manufacturing process. Although this tank was removed from service in 1984, no environmental assessment of the surrounding soils was done at that time. The former location of the tank is shown in Figure 2.

In April, 1989, Sladden Engineering encountered a strong odor while drilling a geotechnical soil boring (Sladden #2) in the location of the former tank. At IRC's request, two soil samples were collected at depths of 9 and 33 feet below surface. The samples were analyzed for the presence of volatile organics by Environmental Protection Agency (EPA) Method 8010. Tetrachloroethylene (PCE) concentrations of 1,300 and 14,000 milligrams per kilogram (mg/kg) were reported for the 9- and 33-foot samples, respectively. The location of the boring is shown in Figure 3.

In May, 1989, Ecology and Environment, Inc. drilled three additional borings to further assess the extent of subsurface PCE levels. One of the borings (IRK-1) was drilled to 90 feet below surface while the remaining two (IRK-2 and IRK-3) were drilled to 75 feet below surface. Four soil samples from each location were submitted for laboratory analysis of volatile organics by EPA Method 8240. Laboratory results detected the presence of PCE, ethylbenzene, toluene, and xylenes at location IRK-1. No detectable concentrations of volatile organics were reported for samples from locations IRK-2 and IRK-3. Boring locations are shown in Figure 3. Laboratory results are presented in Table 1.

IRC contracted Fluor Daniel GTI, Inc. in January, 1990, to complete the delineation of the waste solvent plume and evaluate the feasibility of remedial options. These studies culminated in the submittal of a Remedial Action Plan (RAP) to the Los Angeles County Department of Public Works (LACDPW) in June, 1990. The RAP was conditionally approved by the LACDPW in January, 1991. Fluor Daniel GTI did some additional investigation and a pilot test in April, 1993, in compliance with the conditions of the RAP approval. Implementation of the RAP began in March, 1994, after the project was funded and contractual issues were resolved. The remainder of this document describes Fluor Daniel GTI's efforts to implement the RAP and remediate the site to closure. A timeline of events and document list is provided as Table 2.

SITE CONDITIONS

This section summarizes site conditions prior to remediation as evidenced by investigative data collected through 1993.

Geology and Hydrogeology

Nine soil borings were drilled in the vicinity of the former tank as shown in Figure 3. These borings were drilled to between 60 and 90 feet below surface. Groundwater was not encountered. Soils were described as a brown, fine-grained sand with approximately 5 percent silt and clay. This lithology was found at all depths within the borings. According to Bulletin 104, published by the Department of Water Resources, this formation is called the El Segundo Sand Hills. Drilling logs for the five soil borings drilled by Fluor Daniel GTI are provided as Appendix A.

Depth to groundwater is expected to be between 100 and 120 feet below surface. This assumption is based on data from nearby wells as reported by the Los Angeles County Flood Control District. The aquifer system beneath the site is referred to as the West Coast Groundwater Basin. The uppermost aquifer is not used as a source for drinking water as indicated by the West Basin Municipal Water District.

Contaminant Distribution

Detectable concentrations of volatile organics were found at 7 of the 9 soil boring locations. The constituents discovered and their ranges were as follows:

PCE	0.01 to 14,000 mg/kg
Xylenes	100 to 2,500 mg/kg
1,2-Dichlorobenzene	0.6 to 1,200 mg/kg
Ethylbenzene	24 to 760 mg/kg
Toluene	3 to 4.8 mg/kg
Benzene	4.2 mg/kg
Acetone	1.1 mg/kg
Trichloroethene	0.65 mg/kg

Of these 8 volatile organics, PCE is the primary constituent of concern because it was present in relatively high concentrations and was found to have the broadest and deepest distribution. In addition, PCE has a relatively low action level compared with the other detected constituents.

The vertical extent of the spent solvent plume was delineated by boring IRK-1 where the 80-foot sample contained 0.01 mg/kg of PCE. The highest concentrations of spent solvents were found at depths between 20 and 40 feet below surface. Contaminant concentrations for all soil samples are provided in Tables 1 and 3. Cross-section A-A' shows the PCE concentrations with depth (Figure 4). Since only two borings demonstrated no detectable concentrations of contarninants, the lateral extent of the vadose zone plume is not precisely known. However, it is estimated to be approximately 3,000 square feet as shown in Figure 5. The western edge of the plume extends underneath the manufacturing facility. The distance that the plume extends to the west is assumed to be no greater than it extends to the east. Approximately 16,000 pounds of spent solvents were estimated to exist in the soils at this location prior to remedial action.

REMEDIAL ACTION

The following two sections describe Fluor Daniel GTI's efforts to remediate the contamination present at the site.

System Description

Soil vapor extraction was selected as the preferred technology for this site. Both soil and contaminant conditions favored this technology selection. The uniform sandy soils offered a highly permeable matrix for subsurface air flow. All the contaminants were adequately volatile with the exception of 1,2-dichlorobenzene (a semivolatile). Borings V-1 through V-4 were completed as soil vapor wells. Wells V-1 and V-3 were completed with slotted screen from 20 to 80 feet below surface. Wells V-2 and V-4 were completed with slotted screen from 20 to 60 feet below surface. In April, 1993, well V-1 was backfilled with a bentonite and cement grout from 50 to 80 feet below surface to focus remediation efforts on the most contaminated soils in the zone from 20 to 50 feet below surface. Pilot testing showed that soil vapor extraction from well V-1 would influence an area significantly larger than the spent solvent plume.

Soil vapors were extracted from well V-1 using an explosion proof Sutorbilt 10-horsepower positive displacement blower. Soil vapors were routed to the blower via 3-inch diameter polyvinylchloride (PVC) piping as shown in Figure 6. The portion of the piping in the loading dock area was buried to accommodate vehicular traffic. Carbon steel pipe was used along this high traffic section. Separators were used to trap entrained moisture in the soil vapor stream. A filter was used to collect fine dust and particles from the soil vapor stream.

Extracted vapors were treated on site using a Westport Environmental regenerable carbon system. This system used two 1,000-pound tanks of carbon to alternately treat soil vapors. When breakthrough occurred across one carbon tank, pneumatic valves switched the standby tank into active adsorption. The saturated tank was then regenerated on site using steam. A Fulton 150-horsepower electric boiler was used to generate the steam. Steam was injected into the bottom of the saturated tank at a pressure of approximately 15 pounds per square inch. The steam would strip the contaminants from the carbon surface and exit the top of the tank. The steam and contaminant stream

were then cooled in a condenser. City supplied water was used as the cooling agent for the condenser. Condensed liquids were discharged to a three phase decanting system. The first decanter separated heavier-than-water liquids while the second decanter separated water from lighter-than-water contaminants. Separate phase contaminants were temporarily stored on site in 500-gallon steel tanks. These tanks were emptied every 90 days, and the liquid product hauled for recycling or incineration depending on purity. The steam condensate was treated on site by circulating through two 1,000-pound carbon filters. The treated condensate was then pumped to the sanitary sewer in conjunction with IRC's plant operations. Samples of the treated condensate were collected and analyzed to confirm the effectiveness of the carbon filtration system. Photographs of the remediation system are provided in Appendix B.

Vapors exiting the carbon tank were polished with three 400-pound carbon drums, connected in parallel, prior to atmospheric discharge. Intermediate and effluent contaminant concentrations were monitored continuously using a two channel HNU photoionization detector. This instrument was calibrated on a weekly basis to 500 parts per million by volume (ppmv) hexane gas. Soil vapor concentrations were recorded on a Honeywell circular chart recorder. Treated soil vapors were discharged to atmosphere through a 30-foot stack that extended above the plant's roof.

Permits

Permits were obtained from the following agencies prior to operating the above remediation system:

1. Los Angeles County Department of Public Works
2. South Coast Air Quality Management District
3. El Segundo Fire Department
4. City of El Segundo, Building and Safety Department

Copies of the applicable permits are provided in Appendix C. Construction activities began in September, 1994, with the installation of a concrete floor for the treatment compound. The regenerable carbon system was delivered to the site on September 15, 1994. System construction was completed in December, 1994.

Operations Summary

Remediation operations began on December 21, 1994. Influent and effluent soil vapor samples were collected to document system performance. The samples were analyzed by Quanterra Environmental Services, and the following constituents were detected:

	Concentrations (ppmv)	
Contaminant	Influent	Effluent
PCE	7,900	<0.0044
Xylenes	1,300	<0.0044
Ethylbenzene	400	<0.0044

The above concentrations correspond to an initial mass loading rate of 46 pounds per hour. This conversion assumes an average well flow rate of 200 standard cubic feet per minute (scfm). The maximum system capacity was 50 pounds per hour. A copy of the laboratory report is provided in Appendix D.

A sample of the influent vapor stream was collected on December 20, 1995, to evaluate remediation progress. The sample was analyzed by Quanterra Environmental Services, and the following constituents were detected:

Contaminant	Concentration
PCE	49.0 ppmv
Xylenes	18.0 ppmv
Trichloroethylene	9.5 ppmv
Ethylbenzene	3.6 ppmv
1,2-Dichlorobenzene	3.3 ppmv
Freon 113	2.0 ppmv
Freon 11	0.6 ppmv

The above concentrations correspond to a mass loading rate of 0.38 pounds per hour (a reduction of 99.2 percent). A copy of the laboratory report is provided in Appendix D.

Soil vapor extraction operations continued until March 6, 1996, when they were terminated following authorization by IRC. During this period, the remediation system operated for 6,910 hours at an average well flow rate of 221 scfm. A total of 96 million standard cubic feet of soil vapors were extracted from the subsurface and treated on site. A total of 15,853 pounds of contaminant were recovered in the free product tanks. Graphs of operating hours, soil vapor concentration, and cumulative mass recovered versus time are provided as Figures 7, 8, and 9, respectively. Operations data is summarized in Table 4.

Soil vapor concentrations remained relatively constant through March, 1996. The mass recovery rate at the end of the remediation was approximately 0.45 pounds per hour.

VERIFICATION

The following three sections describe Fluor Daniel GTI's efforts and plan for verifying remediation success.

Current

On February 27, 1996, one verification boring (VB-1) was drilled adjacent to well V-1 in the center of the plume, at the location shown in Figure 10. The boring was drilled to a depth of 80 feet below surface using hollow-stem augers. Soil samples were collected every five feet using an 18-inch split-spoon sampler with 6-inch brass ring inserts. One of the lower two rings was capped, sealed, labeled, and placed on ice pending delivery to a state-certified environmental laboratory. The other ring was emptied into a plastic bag, and the bag sealed for headspace evaluation. Soil from the upper ring was discarded. All used rings and samplers were washed in a dilute solution of trisodiumphosphate and deionized water. Washed rings and samplers were then rinsed in two successive baths of deionized water before reuse. All soil cuttings were placed in 55-gallon steel drums pending disposal by IRC. The drums were sealed and labeled. A total of 4 drums of soil were generated in the installation of boring VB-1. At the conclusion of sampling, the augers were removed from the ground and steam-cleaned on site. Auger washwater was placed in a 55-gallon steel drum pending disposal by IRC. Boring VB-1 was backfilled to within 2 feet of surface using a bentonite/cement grout. The boring was then capped at surface with pre-mixed concrete.

Headspace measurements were taken using the HNU photoionization detector calibrated to 500 ppmv hexane gas. Bagged soil samples were shaken to enhance volatilization. The 5-foot sample exhibited a headspace concentration of 4 ppmv. All remaining samples exhibited no detectable headspace concentrations. The drilling log is provided as Appendix E.

Sixteen soil samples were delivered on February 28, 1996, to National Environmental Testing, Inc. Eleven of the samples were selected for analysis of volatile organics by EPA Method 8240. The samples were analyzed on March 1 and 4, 1996. Results are provided in Table 5 and are summarized as follows:

- PCE was detected in five samples with concentrations ranging from 0.005 to 0.020 mg/kg.
- Xylenes were detected in only one sample (VB-1-15) at a concentration of 0.015 mg/kg.
- No 1,2-dichlorobenzene or ethylbenzene were detected in any of the samples.
- Methylene chloride was detected in six samples with concentrations ranging from 0.010 to 0.050 mg/kg.
- No other volatile organics were detected in any of the samples.

The presence of methylene chloride in the verification samples at concentrations near the detection limit suggests the possibility of laboratory contamination. Methylene chloride has not been previously detected in soil or soil vapor samples from the site. Methylene chloride is a common laboratory contaminant, and its presence in some of the verification samples is highly suspect. A copy of the laboratory report is provided in Appendix F.

Recommended Closure Levels

Fluor Daniel GTI recommends using Interim Guidance for Remediation of VOC Impacted Sites as a basis for determining closure levels. This document was authored by the Los Angeles Region of the California Regional Water Quality Control Board in January, 1995. This document provides equations for determining soil cleanup levels based on contaminant type, soil type, and depth to groundwater. Closure levels for PCE have been calculated on 10-foot intervals and are presented in Table 6. These calculations assume a depth to groundwater of 100 feet (worst-case scenario) and a vadose zone composed of 100 percent sand. The closure levels vary from 0.186 mg/kg at 10 feet to 0.019 mg/kg at 80 feet. Concentrations of PCE reported in boring VB-1 are all below the closure levels established in Table 6. No calculation was required for xylenes since soil concentrations are below the minimum closure level of 1.750 mg/kg.

Proposed

Fluor Daniel GTI recommends drilling three additional borings to verify the success of the remediation. The borings will be drilled further from the plume center in opposite directions as shown in Figure 10. One of the borings (VB-3) may need to be drilled at an approximate slant angle of 10 degrees due to

the structures currently located west of the former underground storage tank. The borings will be drilled following the same methodology as was used for VB-1. Soil samples will be collected every 5 feet using an 18-inch split-spoon sampler with 6-inch brass ring inserts. One of the two bottom samples will be capped, sealed, labeled, and placed on ice pending delivery to a state-certified environmental laboratory. Soil from the other bottom ring will be placed into a plastic bag for headspace analysis, and the bag will be sealed. The top ring will be discarded. Rings and samplers will be washed in a dilute solution of trisodiumphosphate and deionized water. They will then be successively rinsed in baths of deionized water before reuse. Sampling in this manner will continue to a total depth of 80 feet below surface. The augers will be steam-cleaned between boring locations, and the washwater placed in 55-gallon drums pending disposal by IRC. The borings will be backfilled using a bentonite/cement grout and capped at surface with premixed concrete. Headspace concentrations will be measured using the HNU photoionization detector calibrated to 500 ppmv hexane gas. Drilling, headspace, and lithologic information will be incorporated into a written log for each boring.

The soil samples will be delivered within 24 hours to a state-certified environmental laboratory for analysis. Ten of the 16 samples collected at each location will be analyzed for the presence of volatile organics by EPA Method 8240. The samples will be scheduled for analysis as the first batch following instrument calibration thus reducing the potential for introduction of methylene chloride as a laboratory contaminant.

Following laboratory analysis, a brief report summarizing the additional verification activities will be prepared. In this report, analytical results will be compared against the recommended closure levels identified in Table 6. If concentrations are equal to or less than the proposed cleanup levels, a recommendation for no further remedial action at the site will be submitted to the Regional Water Quality Control Board. Following agency concurrence, the remediation system and wells will be properly and permanently abandoned.

CONCLUSIONS

Based on the information presented in this report, Fluor Daniel GTI has concluded the following:

1. Site soils contained concentrations of volatile organics (primarily PCE) to a maximum depth of 80 feet below surface prior to remediation. The suspected source of contamination was a former underground storage tank used to store spent solvents from the manufacturing process. Approximately 16,000 pounds of volatile organics impacted an area of nearly 3,000 square feet.

2. A soil vapor extraction system was installed in 1994 to reduce subsurface solvent levels in soil. Vapors were extracted from well V-1 until volatile organic concentrations had declined to a near static level. The remediation system effectively reduced influent volatile organic concentrations from 9,600 ppmv to less than 83 ppmv. A total of 96 million standard cubic feet of soil vapor was withdrawn from well V-1 and treated on site. An estimated 15,853 pounds of volatile organics were recovered by the vapor treatment system.

3. One verification boring at the center of the former tank location has preliminarily verified remediation success. PCE concentrations in soil at this location have been reduced from a maximum of 14,000 mg/kg at 33 feet below surface to 0.02 mg/kg at 10 feet below surface. All concentrations of PCE are below the proposed cleanup levels identified in Table 6. The closure levels identified in this table were calculated using equations from Interim Guidance for Remediation of VOC Impacted Sites. This document was authored by the Regional Water Quality Control Board in January, 1995. All concentrations of other volatile organics (excluding methylene chloride) are below action levels. The presence of methylene chloride is suspected to result from laboratory contamination.

4. Three additional verification borings are recommended to confirm the overall remediation success. These borings will surround the former tank location as shown in Figure 10. Soil samples will be collected every 5 feet to a total depth of 80 feet below surface. Ten of the 16 samples from each location will be selected for analysis of volatile organics. Laboratory results will be compared against the PCE cleanup levels identified in Table 6. If verification

results are equal to or less than these levels, a recommendation for no further remedial action at the site will be submitted to the Regional Water Quality Control Board.

TABLE 1

PRELIMINARY SITE INVESTIGATION DATA
International Rectifier Corporation
233 Kansas Street, El Segundo, California 90245

		Concentrations in Soil (milligrams per kilogram)			
Boring	Depth (ft)	PCE	Xylenes	Ethylbenzene	Toluene
IRK-1	18	680	350	70	<1
IRK-1	35	2,500	2,000	480	3
IRK-1	60	100	100	24	<1
IRK-1	80	0.010	0.015	<0.005	<0.005
IRK-2	20	<0.005	<0.005	<0.005	<0.005
IRK-2	40	<0.005	<0.005	<0.005	<0.005
IRK-2	60	<0.005	<0.005	<0.005	<0.005
IRK-2	75	<0.005	<0.005	<0.005	<0.005
IRK-3	15	<0.005	<0.005	<0.005	<0.005
IRK-3	35	<0.005	<0.005	<0.005	<0.005
IRK-3	55	<0.005	<0.005	<0.005	<0.005
IRK-3	75	<0.005	<0.005	<0.005	<0.005
Sladden #2	9	1,300	---	---	---
Sladden #2	33	14,000	---	---	---

Notes:
PCE = Tetrachloroethylene
--- = not analyzed
Depth shown is depth to top of 18-inch sampler.
1,2-Dichlorobenzene was not a target analyte for these analyses.
Samples from borings IRK-1, IRK-2, and IRK-3 were analyzed following EPA Method 8240.
Samples from boring Sladden #2 were analyzed following EPA Method 8010.

Source:
Preliminary Site Investigation Report, Ecology and Environment, Inc., May 19, 1989.

TABLE 2

TIMELINE AND DOCUMENT LIST
International Rectifier Corporation
233 Kansas Street, El Segundo, California 90245

Date	Doc/Action	Description	Originator[1]
4-11-89	Document	Preliminary Soil Investigation	Sladden
5-19-89	Document	Preliminary Site Investigation Report	E & E
1-15-90	Action	Drilled and installed 4 wells (V-1 through V-4)	GTI
2-7-90	Action	Vapor extraction pilot test of well V-1	GTI
6-21-90	Document	Remedial Action Plan	GTI
7-20-90	Document	Hazardous Waste Facility Permit Variance	GTI
4-24-91	Document	Remedial Action Plan Conditional Approval Letter	LACDPW
4-28-92	Document	Response to (LACDPW) Comments	GTI
4-13-93	Action	Drilled soil boring GTI-1	GTI
4-13-93	Action	Plugged well V-1 back to 50 feet below surface	GTI
4-14-93	Action	Retested vapor extraction from well V-1	GTI
4-26-93	Document	Submittal of Supporting Documentation (to LACDPW)	GTI
7-14-93	Document	Environmental Assessment Report - Boring GTI-1	GTI
7-23-93	Document	Soil Vapor Extraction Test Report - Well V-1	GTI
5-2-94	Document	Remedial Action Plan Addendum	GTI

[1] Sladden = Sladden Engineering
E & E = Ecology and Environment, Inc.
GTI = Groundwater Technology, Inc.
LACDPW = Los Angeles County Department of Public Works

TABLE 3

SOIL SAMPLE LABORATORY RESULTS
International Rectifier Corporation
233 Kansas Street, El Segundo, California 90245

		Concentrations in Soil (milligrams per kilogram)							
Boring	Depth (ft)	PCE	1,2-DCB	TCE	Acetone	Xylenes	Ethyl-benzene	Toluene	Benzene
V-1	10	1,600	1,000	---	---	---	---	---	---
V-1	20	11,000	<0.5	---	---	2,500	760	4.8	4.2
V-1	25	1,600	380	---	---	---	---	---	---
V-1	35	1,500	370	---	---	---	---	---	---
V-1	80	<0.5	<0.5	---	---	<0.05	<0.05	<0.05	<0.05
V-2	20	1,500	540	---	---	---	---	---	---
V-2	30	0.8	<0.5	---	---	---	---	---	---
V-2	40	0.9	<0.5	---	---	---	---	---	---
V-2	60	3.0	<0.5	---	---	---	---	---	---
V-3	20	50	20	---	---	---	---	---	---
V-3	25	1,100	250	---	---	---	---	---	---
V-3	40	9,700	1,200	---	---	---	---	---	---
V-3	65	<0.5	<0.5	---	---	---	---	---	---
V-3	80	<0.5	<0.5	---	---	---	---	---	---
V-4	20	0.9	<0.5	---	---	---	---	---	---
V-4	30	3,500	1,200	---	---	---	---	---	---
V-4	60	<0.5	<0.5	---	---	---	---	---	---
GTI-1	20	1,200	1,000	0.65	<5.0	840	170	<0.25	<0.25
GTI-1	30	0.8	0.6	<0.005	1.1	<0.010	<0.005	<0.005	<0.005
GTI-1	40	<0.5	<0.5	---	---	---	---	---	---
GTI-1	50	1.8	0.9	---	---	---	---	---	---
GTI-1	55	2.1	<0.5	---	---	---	---	---	---
GTI-1	60	<0.5	<0.5	---	---	---	---	---	---
GTI-1	65	<0.5	<0.5	---	---	---	---	---	---
GTI-1	70	<0.5	<0.5	---	---	<0.015	<0.005	<0.005	<0.005
GTI-1	80	<0.5	<0.5	---	---	<0.015	<0.005	<0.005	<0.005
GTI-1	90	<0.5	<0.5	---	---	<0.015	<0.005	<0.005	<0.005

Notes:
PCE = Tetrachloroethylene
DCB = Dichlorobenzene
TCE = Trichloroethylene
--- = not analyzed
Depth shown is depth to top of 18-inch sampler.
Samples were analyzed following EPA Method 8240.

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TABLE 4

OPERATIONS SUMMARY
International Rectifier Corporation
233 Kansas Street, El Segundo, California 90245

Week #	Hours Oper	Total Flow (scfm)	Dilution Flow (scfm)	Well Flow (scfm)	Well Volume (scf)	Mass Removed (lbs)	Subtotal Flow (scf)	Distrib Mass (lbs)	Calc Conc (ppmv)	Cum Mass (lbs)
1	11.75	468	174	293	2.1E+05			227	2560	227
2	3.25	469	280	189	3.7E+04			40	2560	268
3	3.00	470	319	151	2.7E+04			30	2560	297
4	23.50	469	329	140	2.0E+05			217	2560	515
5	24.25	489	310	179	2.6E+05			287	2560	801
6	17.75	492	436	56	6.0E+04			66	2560	867
7	13.25	484	430	55	4.4E+04			48	2560	915
8	75.75	498	401	97	4.4E+05	1400	1.3E+06	485	2560	1400
9	61.25	484	319	165	6.1E+05			370	1419	1770
10	60.75	478	280	198	7.2E+05			440	1419	2209
11	111.00	470	258	212	1.4E+06			859	1419	3068
12	133.75	471	246	225	1.8E+06			1099	1419	4168
13	133.25	493	328	165	1.3E+06			804	1419	4972
14	37.75	493	328	165	3.7E+05	3800	6.2E+06	228	1419	5200
15	0.00	0	0	0	0.0E+00			0	0	5200
16	107.25	451	246	205	1.3E+06			526	930	5726
17	89.50	429	156	273	1.5E+06			585	930	6312
18	65.75	491	135	356	1.4E+06			561	930	6873
19	138.50	451	111	340	2.8E+06	2800	7.0E+06	1127	930	8000
20	66.75	435	111	325	1.3E+06			399	714	8399
21	101.75	443	111	333	2.0E+06			622	714	9021
22	29.50	457	220	236	4.2E+05			128	714	9149
23	66.50	471	246	226	9.0E+05			276	714	9425
24	141.25	468	246	222	1.9E+06	2000	6.5E+06	575	714	10000
25	158.75	489	246	244	2.3E+06			491	493	10491
26	151.50	500	306	194	1.8E+06	864	4.1E+06	373	493	10864
27	168.00	500	319	181	1.8E+06			352	450	11216
28	136.00	495	301	194	1.6E+06			306	450	11522
29	168.00	497	301	196	2.0E+06			382	450	11904
30	147.00	494	299	194	1.7E+06	1371	7.1E+06	331	450	12235
31	141.50	493	297	196	1.7E+06	232	1.7E+06	232	325	12467
32	168.00	496	298	198	2.0E+06	170	2.0E+06	170	199	12637
33	168.00	498	290	208	2.1E+06	170	2.1E+06	170	189	12807
34	168.00	494	290	204	2.1E+06	170	2.1E+06	170	193	12977
35	168.00	494	290	204	2.1E+06			331	375	13308
36	112.00	494	290	204	1.4E+06			221	376	13529
37	116.25	494	340	154	1.1E+06			202	439	13731
38	130.50	488	295	194	1.5E+06	980	6.0E+06	226	347	13957
39	144.75	500	279	215	1.9E+06			167	208	14124
40	139.25	486	279	207	1.7E+06	322	3.6E+06	155	208	14279
41	158.50	487	208	279	2.7E+06			122	107	14401
42	168.00	490	205	285	2.9E+06	254	5.5E+06	132	107	14533
43	149.00	482	206	277	2.5E+06	209	2.5E+06	209	197	14742
44	168.00	486	206	280	2.8E+06			135	112	14877
45	168.00	485	206	279	2.8E+06	270	5.6E+06	135	112	15012
46	64.75	486	206	280	1.1E+06			24	52	15037
47	74.00	486	206	280	1.2E+06			28	52	15065
48	154.00	490	246	245	2.3E+06			51	52	15115
49	42.75	488	228	260	6.7E+05			15	52	15130
50	134.75	503	256	247	2.0E+06			45	52	15175
51	153.75	490	246	244	2.2E+06			51	52	15226
52	95.00	498	339	158	9.0E+05	234	1.0E+07	20	52	15246
53	157.50	504	308	196	1.9E+06			49	62	15296
54	140.50	503	304	199	1.7E+06			45	62	15340
55	154.25	493	242	251	2.3E+06			62	62	15402
56	76.25	495	244	252	1.2E+06			31	62	15433
57	105.25	495	242	253	1.6E+06			43	62	15476
58	131.50	495	242	253	2.0E+06			53	62	15529
59	65.25	495	242	253	9.9E+05	309	1.2E+07	26	62	15555
60	152.25	495	217	278	2.5E+06			69	63	15624
61	168.00	489	203	286	2.9E+06			78	63	15703
62	168.00	487	203	284	2.9E+06			78	63	15780
63	96.75	487	203	284	1.6E+06			45	63	15825
64	61.00	487	203	284	1.0E+06	298	1.1E+07	28	63	15853
Total	**6910**				**9.6E+07**	**15853**	**9.6E+07**	**15853**		
Average		**477**	**256**	**221**						

TABLE 5

VERIFICATION SAMPLE LABORATORY RESULTS
International Rectifier Corporation
233 Kansas Street, El Segundo, California 90245

		Concentrations in Soil (milligrams per kilogram)				
Boring	Depth (ft)	PCE	1,2-DCB	MC	Xylenes	Ethylbenzene
VB-1	10	0.020	<0.005	0.011	<0.005	<0.005
VB-1	15	0.018	<0.005	<0.010	0.015	<0.005
VB-1	20	<0.005	<0.005	0.010	<0.005	<0.005
VB-1	25	<0.005	<0.005	<0.010	<0.005	<0.005
VB-1	30	<0.025	<0.025	0.050	<0.025	<0.025
VB-1	40	<0.005	<0.005	0.010	<0.005	<0.005
VB-1	50	<0.005	<0.005	<0.010	<0.005	<0.005
VB-1	60	<0.005	<0.005	<0.010	<0.005	<0.005
VB-1	70	0.015	<0.005	<0.010	<0.005	<0.005
VB-1	75	0.009	<0.005	0.010	<0.005	<0.005
VB-1	80	0.005	<0.005	0.010	<0.005	<0.005

Notes:
PCE = Tetrachloroethylene
DCB = Dichlorobenzene
MC = Methylene Chloride
Depth shown is depth to top of 18-inch sampler.
Samples were analyzed following EPA Method 8240.

TABLE 6

CALCULATED CLOSURE LEVELS - TETRACHLOROETHYLENE
International Rectifier Corporation
233 Kansas Street, El Segundo, California 90245

Assumptions:
1. Depth to groundwater = 100 ft
2. Lithology is 100% sand from surface to groundwater

Depth (ft)	Sand Column (ft)	Tetrachloroethylene				
		MCL (ug/l)	AF	AFd	AFt	C (ug/kg)
10	90	5	729	371.1	37.1	185.6
20	80	5	729	311.5	31.1	155.7
30	70	5	729	251.8	25.2	125.9
40	60	5	729	192.2	19.2	96.1
50	50	5	729	132.5	13.3	66.3
60	40	5	729	72.9	7.3	36.5
70	30	5	729	54.9	5.5	27.5
80	20	5	729	37.0	3.7	18.5

*** Note ***
C = Soil Closure Level

Source: *Interim Guidance for Remediation of VOC Impacted Sites*
California Regional Water Quality Control Board, Los Angeles Region
January, 1995

FIGURE 1

SITE LOCATION MAP

International Rectifier Corporation
233 Kansas Street
El Segundo, California
JOB NO. 04250-1381

N

SITE LOCATION

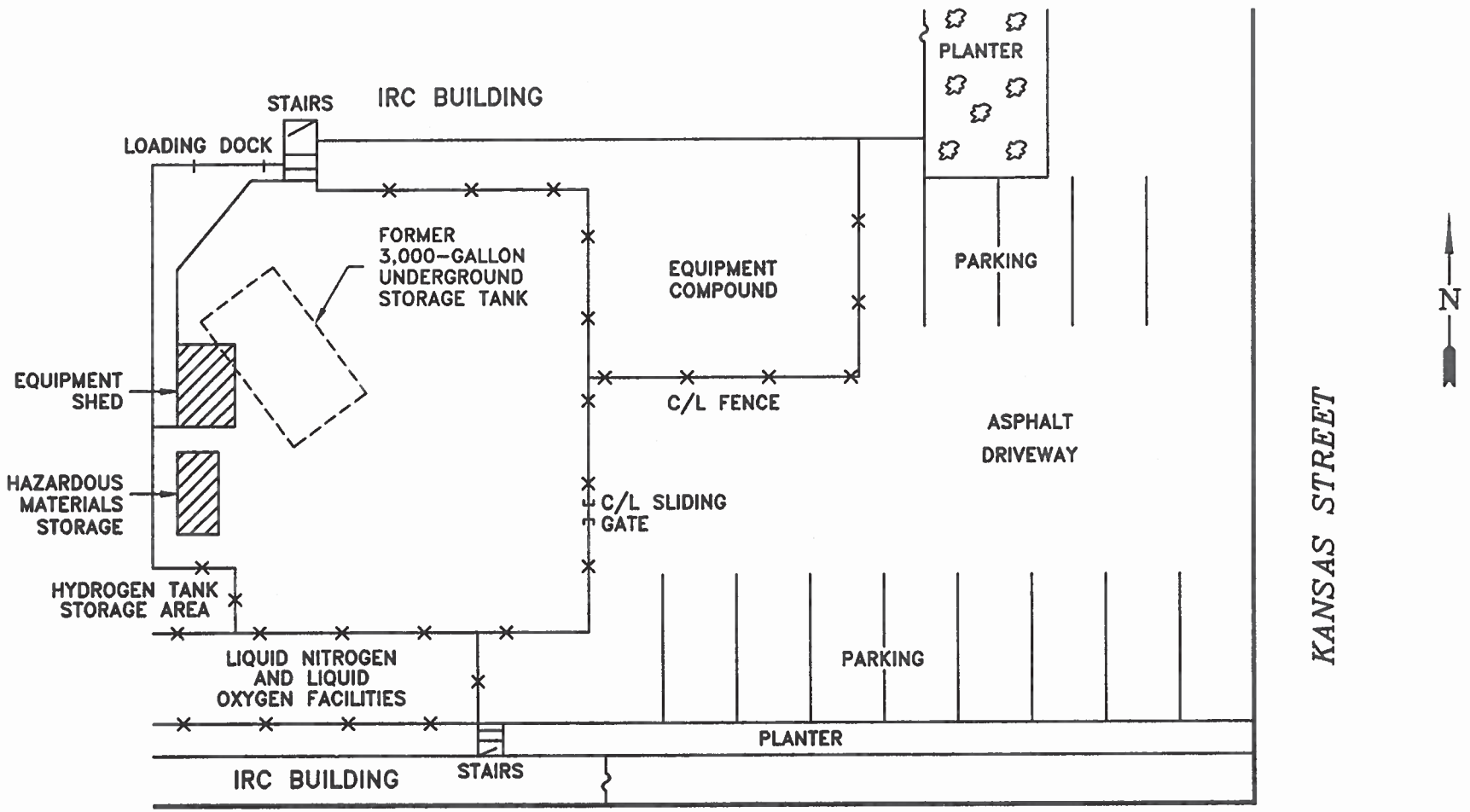
SOURCE: U.S.G.S. Venice, Calif. 1964
Photorevised 1981

SCALE 1:24 000

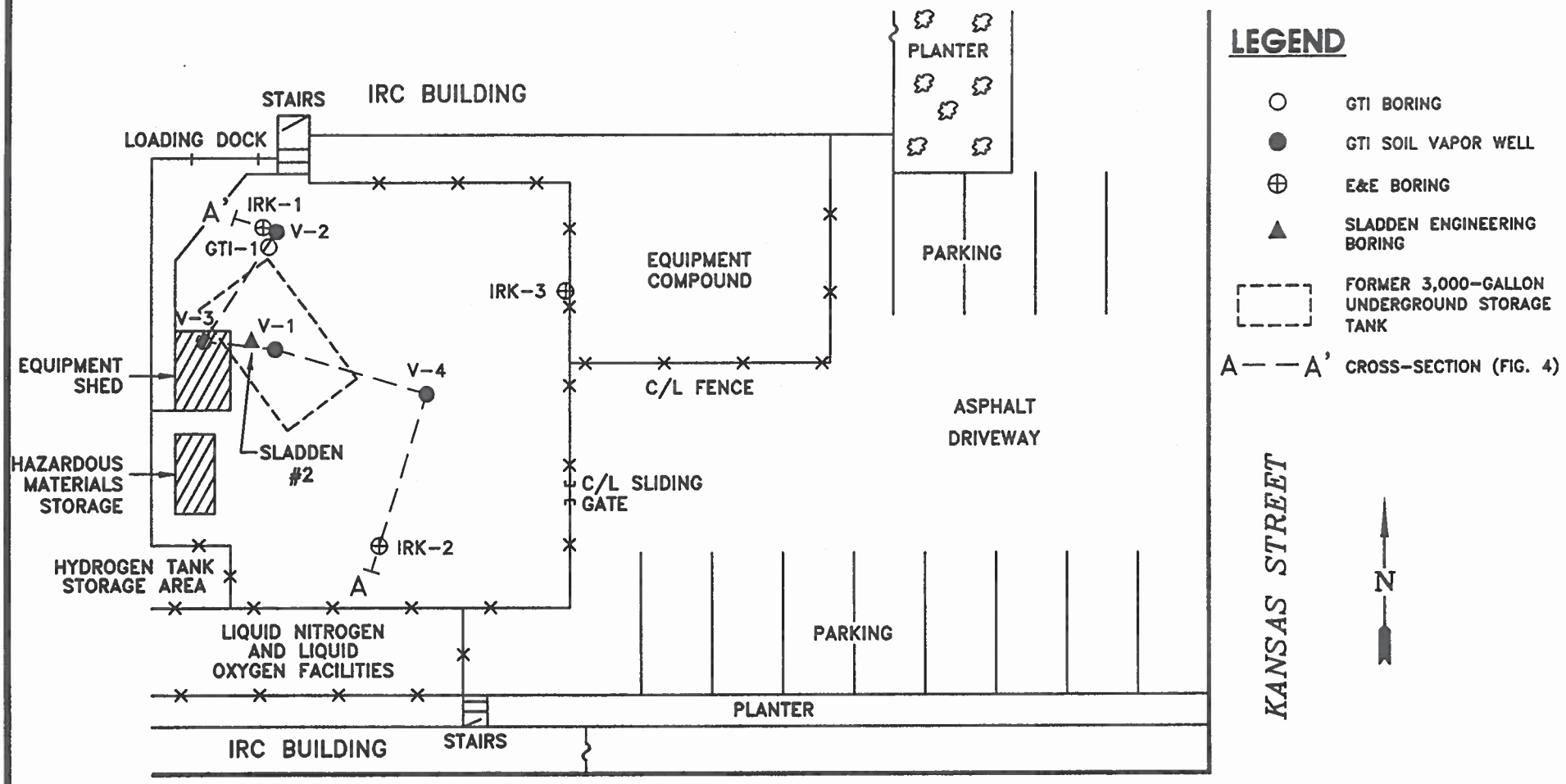
1 1/2 0 1 mile

1000 0 1000 2000 3000 4000 5000 6000 7000 feet

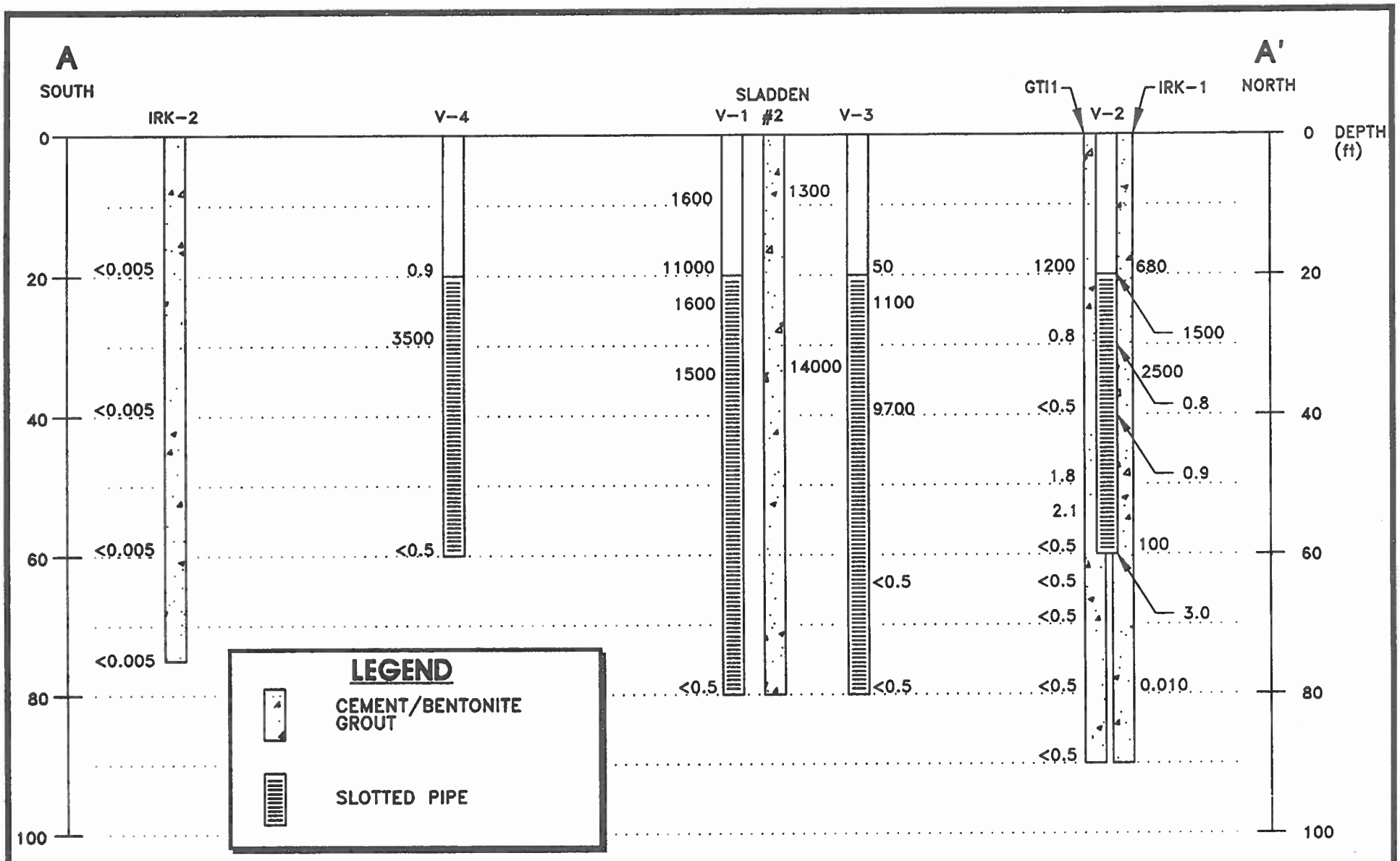
FLUOR DANIEL GTI



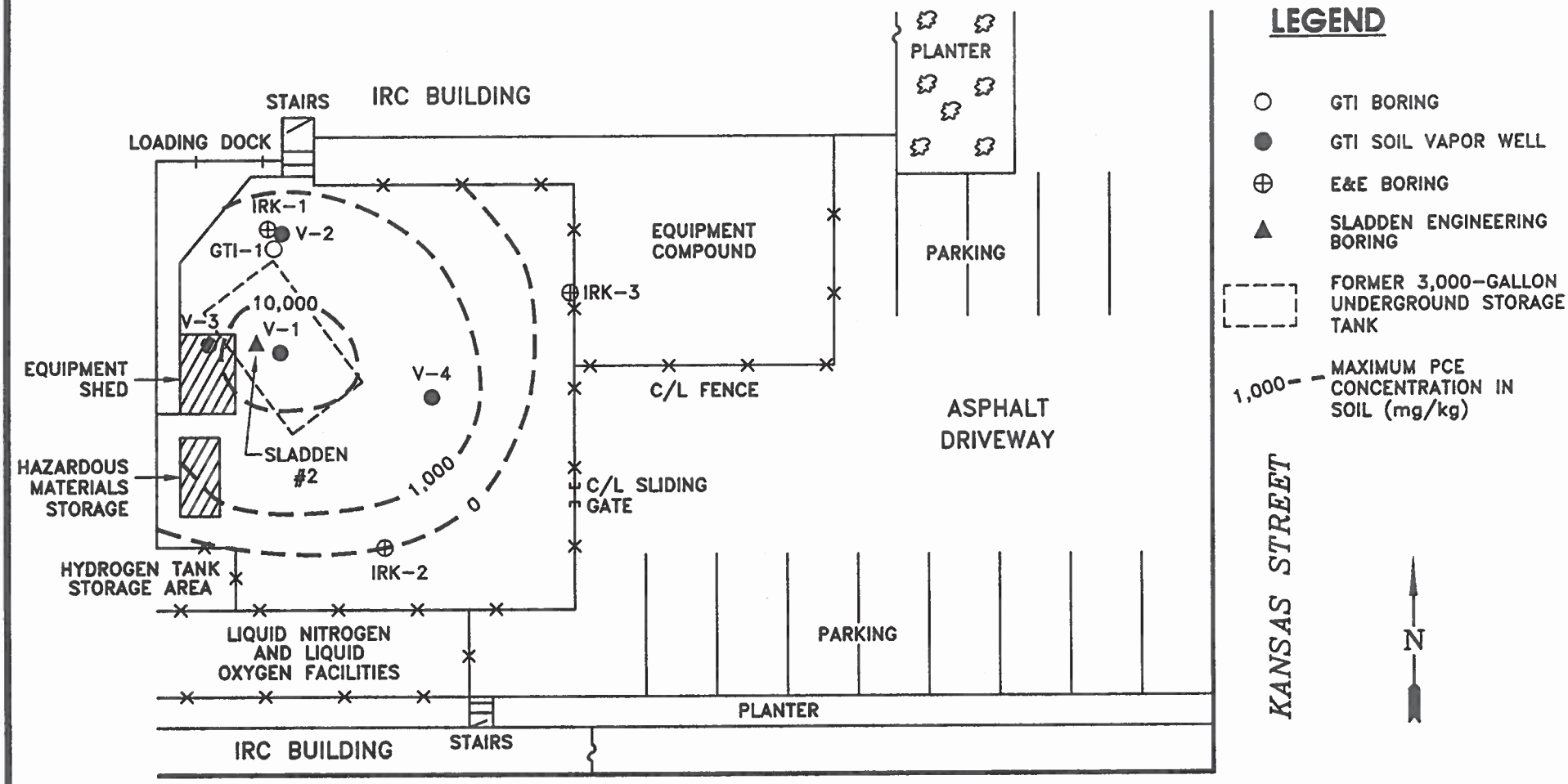
FLUOR DANIEL GTI	0 FEET 20 SCALE NOT A SURVEYED MAP	CLIENT: INTERNATIONAL RECTIFIER CORPORATION	SITE PLAN	
FILE: 1381SM (1:20)	PROJECT NO.: 04250-1381	LOCATION: 233 KANSAS STREET EL SEGUNDO, CA. 90245	PM:	PE/RG: FIGURE: 2
REV.:		DES.: BD / DET.: SP / DATE: 7-5-96		



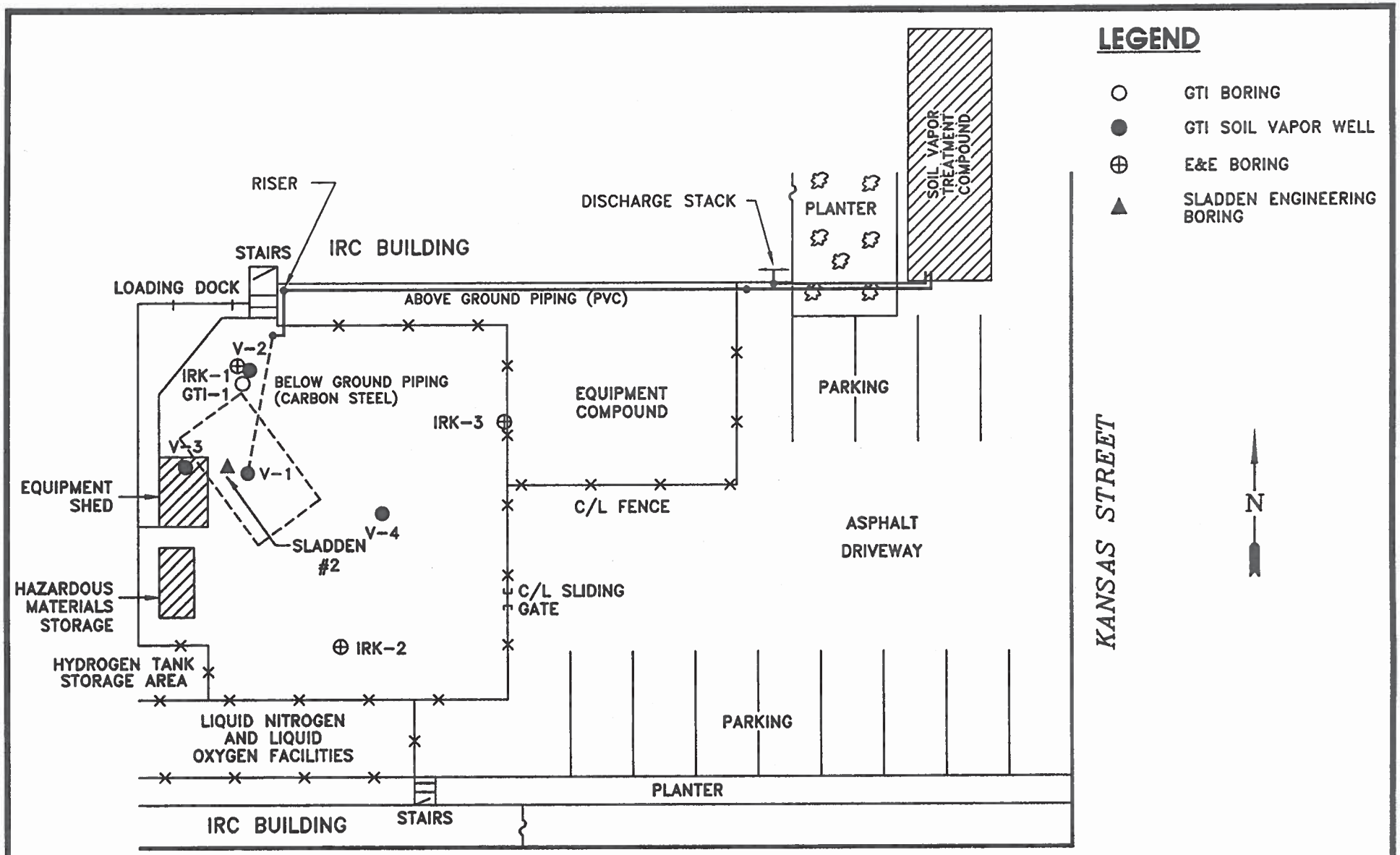
FLUOR DANIEL GTI	0 FEET 20 SCALE NOT A SURVEYED MAP	CLIENT: INTERNATIONAL RECTIFIER CORPORATION	SOIL BORING LOCATION MAP
FILE: 1381-SBL (1:20)	PROJECT NO.: 04250-1381	LOCATION: 233 KANSAS STREET EL SEGUNDO, CA. 90245	PM: / PE/RG: / FIGURE: 3
REV.:		DES.: BD / DET.: SP / DATE: 7-5-96	



FLUOR DANIEL GTI	0 FEET 10 SCALE	CLIENT: INTERNATIONAL RECTIFIER CORPORATION	CROSS-SECTION A--A' SHOWING TETRACHLOROETHYLENE CONCENTRATIONS IN SOIL (mg/kg)
FILE: 1381ASEC (1:10)	PROJECT NO.: 04250-1381	LOCATION: 233 KANSAS STREET EL SEGUNDO, CA. 90245	PM: / PE/RG: / FIGURE: 4
REV.:	DES.: BD / DET.: SP / DATE: 7-8-96		



FLUOR DANIEL GTI	0 FEET 20 SCALE NOT A SURVEYED MAP	CLIENT: INTERNATIONAL RECTIFIER CORPORATION	TETRACHLOROETHYLENE DISTRIBUTION MAP
FILE: 1381-CDM (1:20)	PROJECT NO.: 04250-1381	LOCATION: 233 KANSAS STREET EL SEGUNDO, CA. 90245	PM: / PE/RG: / FIGURE: 5
REV.:	DES.: BD / DET.: SP / DATE: 7-8-96		

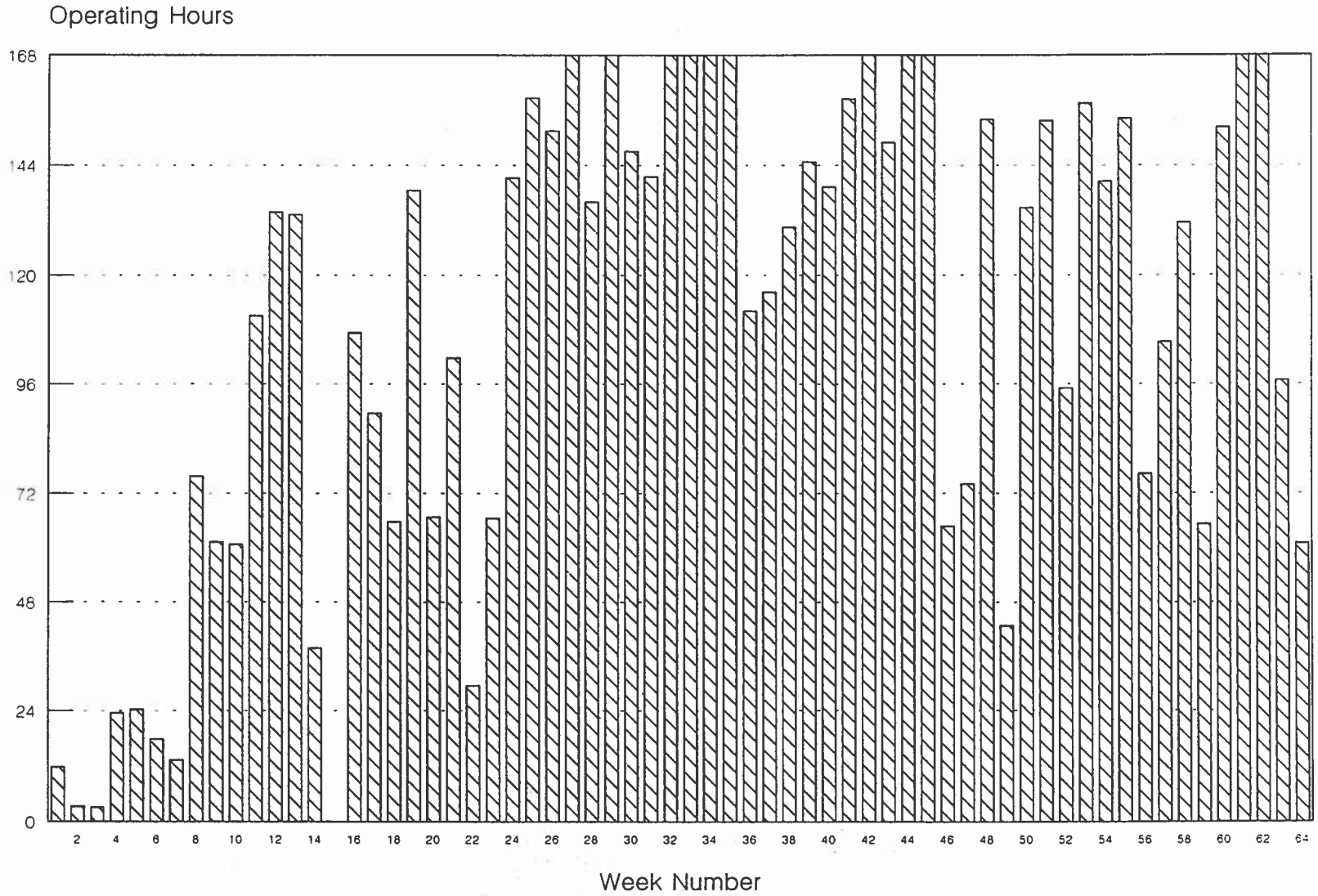


FLUOR DANIEL GTI	0 FEET 20 SCALE NOT A SURVEYED MAP	CLIENT: INTERNATIONAL RECTIFIER CORPORATION	REMEDIATION SYSTEM LOCATION MAP
FILE: 1381RSLM (1:20)	PROJECT NO.: 04250-1381	LOCATION: 233 KANSAS STREET EL SEGUNDO, CA. 90245	PM: / PE/RG: / FIGURE: 6
REV.:	DES.: BD / DET.: SP / DATE: 7-5-96		

FIGURE 7

Hours Operating versus Time

233 Kansas Street, El Segundo, California 90245



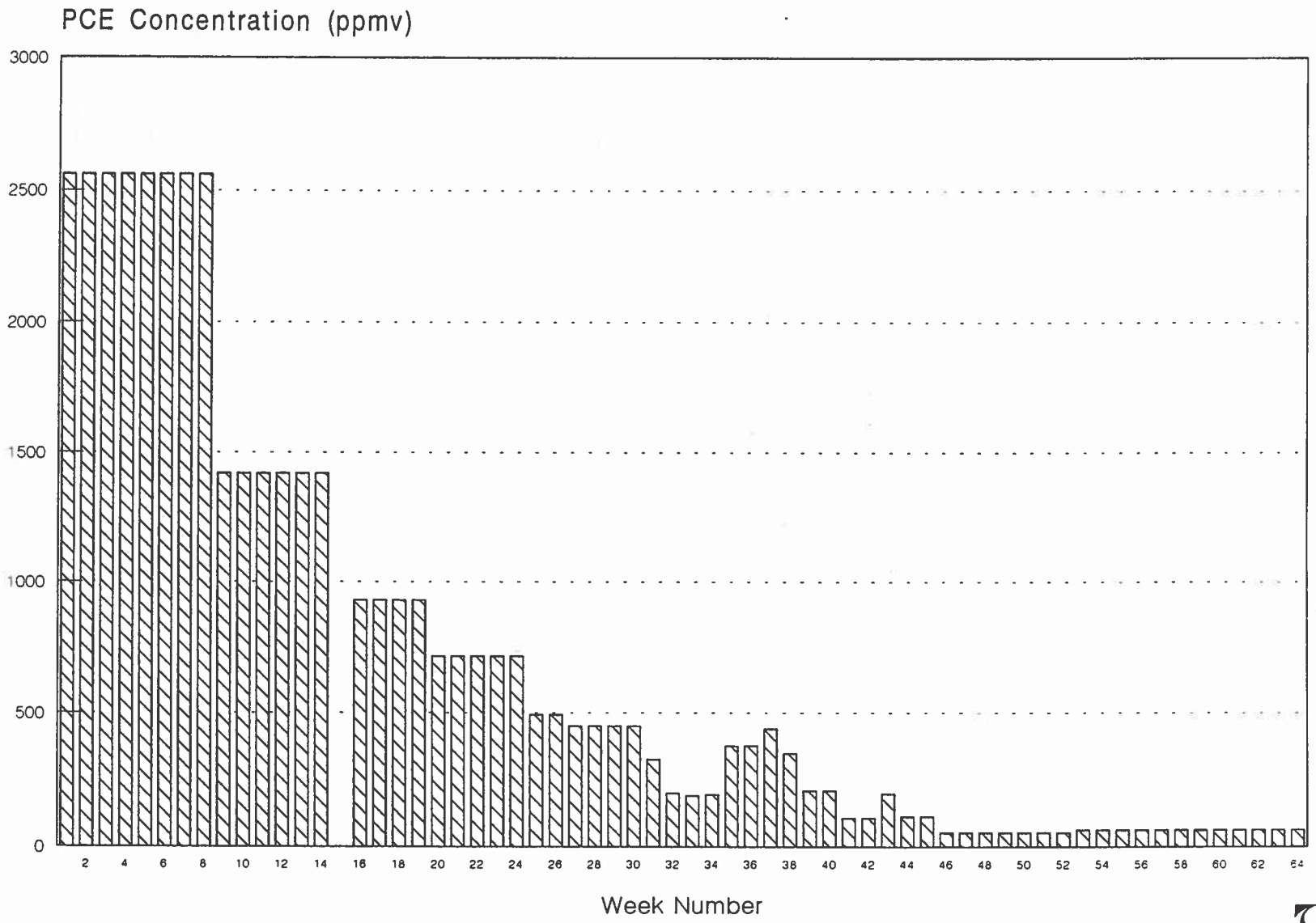
\1381\CONC.CHT

FLUOR DANIEL GTI

FIGURE 8

Soil Vapor Concentration versus Time

233 Kansas Street, El Segundo, California 90245



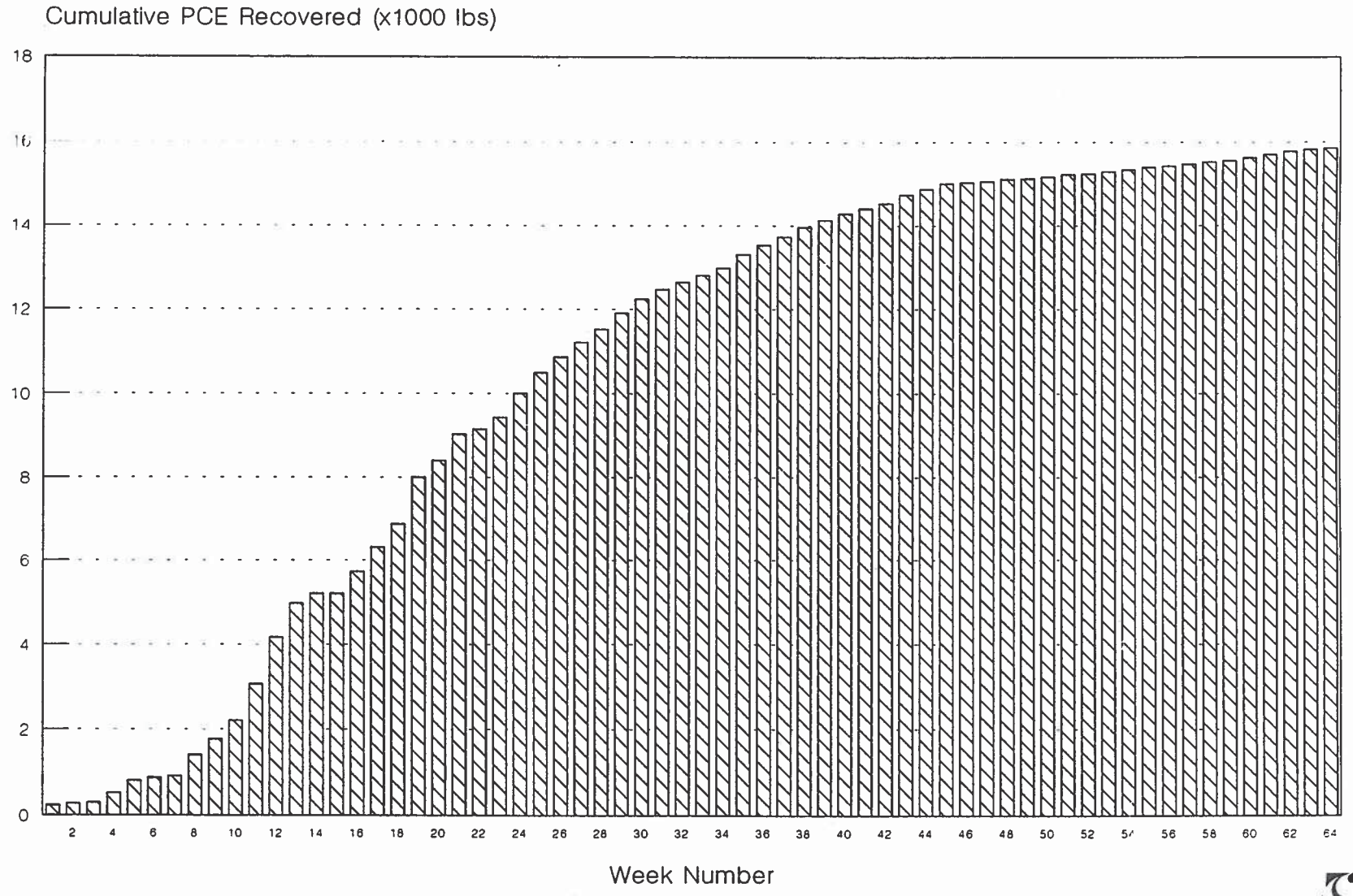
\1381\CONC.CHT

FLUOR DANIEL GTI

FIGURE 9

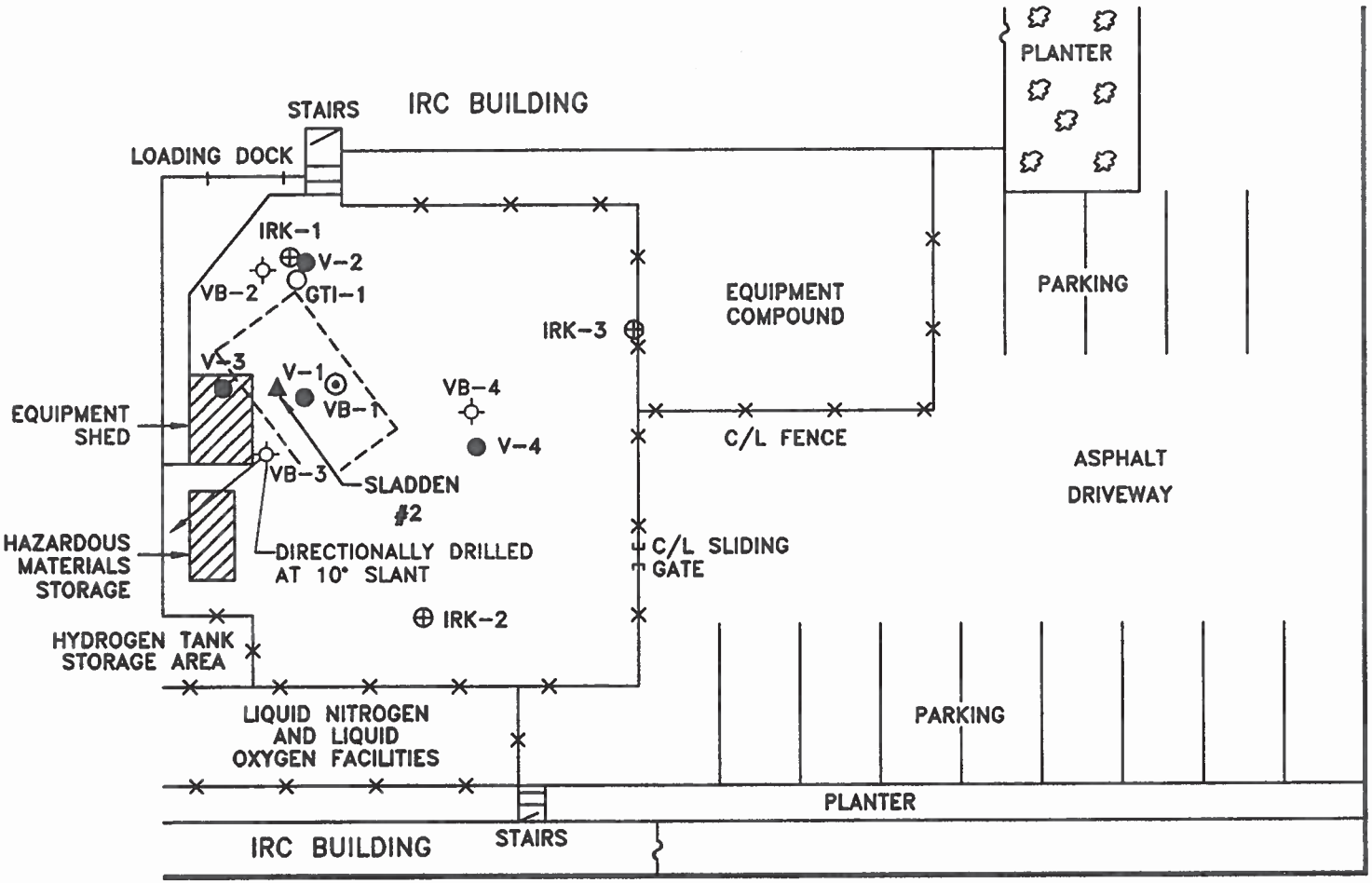
Cumulative Mass Recovered versus Time

233 Kansas Street, El Segundo, California 90245



\1381\CONC.CHT

FLUOR DANIEL GTI



LEGEND

- GTI BORING
- GTI SOIL VAPOR WELL
- E&E BORING
- SLADDEN ENGINEERING BORING
- GTI VERIFICATION BORING
- GTI PROPOSED VERIFICATION BORING

FLUOR DANIEL GTI

0 FEET 20
SCALE
NOT A SURVEYED MAP

CLIENT: INTERNATIONAL RECTIFIER CORPORATION

LOCATION: 233 KANSAS STREET EL SEGUNDO, CA. 90245

VERIFICATION BORING LOCATION MAP

FILE:	PROJECT NO.:	REV.:	DES.:	DET.:	DATE:	PM:	PE/RG:	FIGURE:
1381-PVB	04250-1381		BD	SP	7-8-96			10

WELL/LITHOLOGIC LOG

Well/Boring # V1

Job Name: International Rectifier	Project Number: 214-799-8639
Location: 233 Kansas Street, El Segundo, CA	Total Depth of Hole: 80 Feet
Date Drilled: January 15, 1990	Depth to Water at Time of Drilling: N/A
Surface Elevation: N/A	Screen Size and Type: 3" PVC
Log By: Hillary Hecht	Casing Size and Type: 3" PVC
Drilling Company: Sierra Pacific Exploration	Drill Method: HSA
Driller: Roger Strong	Note:

DEPTH (FEET)	WELL CONST. PIPE	WELL CONST. FILL	PID (PPM)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS	GRAPHIC SYMBOL	DESCRIPTION
0								
5			12	V1-5		5 8 12		Brown fine sand damp, not plastic, loose , uniform grain size.
10			3000	V1-10		2 4 5		Same, except red brown.
15			3000	V1-15		7 11 15		Same, except red brown.
20			5000	V1-20		6 12 15		Red brown fine and medium sand, dry, loose, not plastic.
25								

GROUNDWATER TECHNOLOGY, INC.
20,000 Mariner Avenue, Suite 200 • Torrance, California 90503 • (213) 371-1394

Date: January 15, 1990	Drawn By: GTI

TORRANCE GROUNDWATER TECHNOLOGY, INC.

Project Name: International Rectifier Project Number: 214-799-8639

Appendix : 1 Page 2 of 3 Boring/Well Log Number: V1

DEPTH (FEET)	WELL CONST. PIPE	WELL CONST. FILL	PID (PPM)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS	GRAPHIC SYMBOL	DESCRIPTION
25			3500	V1-25				Red brown fine and medium sand, dry, loose, not plastic.
30			3000	V1-30		4 10 16		Red brown fine and medium sand, dry, loose, not plastic
35			3000	V1-35		12 15 19		Red brown fine and medium sand, dry, loose, not plastic.
40			1000	V1-40		11 32 42		Red brown fine and medium sand, dry, loose, not plastic.
45			No	V1-45		20 36 40		Red brown fine sand, not plastic, loose, uniform grain size.
50			2000	V1-50		10 10 20		Red brown fine sand, not plastic, loose, uniform grain size.
55								

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Date: January 15, 1990 Drawn By: GTI

TORRANCE GROUNDWATER TECHNOLOGY, INC.

Project Name: International Rectifier

Project Number: 214-799-8639

Appendix 1

Page 3 of 3

Boring/Well Number: V1

DEPTH (FEET)	WELL CONST. PIPE	WELL CONST. FILL	PID (PPM)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS	GRAPHIC SYMBOL	DESCRIPTION
55			2000	V1-55		10 22 29		Red brown fine sand, not plastic, loose, uniform grain size.
60			22	V1-60		16 29 42		Red brown fine sand, not plastic, loose, uniform grain size.
65			60	V1-65		22 32 50		Red brown fine sand, not plastic, loose, uniform grain sand.
70				V1-70				Red brown fine sand, not plastic, loose, uniform grain size.
75			60	V1-75		15 40 43		Red brown fine sand, not plastic, loose, uniform grain size.
80			60	V1-80		13 36 38		Red brown fine sand, not plastic, loose, uniform grain size.
85								

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Date: January 15, 1990

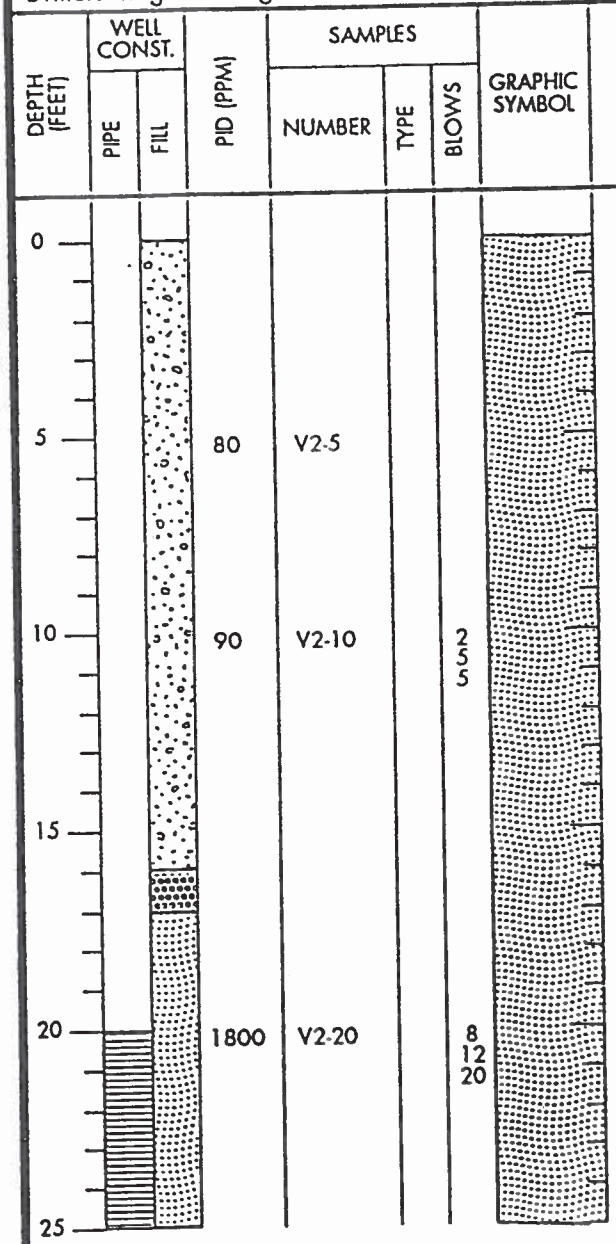
Drawn By: GTI

TORRANCE GROUNDWATER TECHNOLOGY, INC.

WELL/LITHOLOGIC LOG

Well/Boring #V2

Job Name: International Rectifier	Project Number: 214-799-8639
Location: 233 Kansas Street, El Segundo, CA	Total Depth of Hole: 60 feet
Date Drilled: January 16, 17, 1990	Depth to Water at Time of Drilling: N/A
Surface Elevation: N/A	Screen Size and Type: 3" PVC
Log By: Hillary Hecht	Casing Size and Type: 3" PVC
Drilling Company: Sierra Pacific Exploration	Drill Method: HSA
Driller: Roger Strong	Note:



DESCRIPTION

Brown fine sand damp, not plastic, loose, uniform grain size.

Brown fine sand, damp, not plastic, loose, uniform grain size.

Same, red brown

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Date: January 17, 1990	Drawn By: GTI

TORRANCE GROUNDWATER TECHNOLOGY, INC.

Project Name: International Rectifier Project Number: 214-799-8093

Appendix 1 Page 2 of 3 Boring/Well Log Number: V2

DEPTH (FEET)	WELL CONST. PIPE	WELL CONST. FILL	PID (PPM)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS	GRAPHIC SYMBOL	DESCRIPTION
30			300	V2-30		11 22 31		Same, red brown
40			100	V2-40		9 20 32		Same, red brown
50			65	V2-50		12 15 21		Brown fine sand damp,not plastic, loose, uniform grain size.

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Date: January 17,1990 Drawn By: GTI

TORRANCE GROUNDWATER TECHNOLOGY, INC.

Project Name: International Rectifier

Project Number: 214-799-8639-00

Appendix

Page 2

Boring/Well Log Number: V3

DEPTH (FEET)	WELL CONST. PIPE	WELL CONST. FILL	PID (PPM)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS	GRAPHIC SYMBOL	DESCRIPTION
25			1200	V3-25				Same as above, red brown.
30			180	V3-30		11 23 31		Same as above, red brown.
35								
40			2100	V3-40		10 26 36		Same as above, red brown.
45								
50			200	V3-50		13 26 29		Same as above, red brown.
55								

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Date: February 12, 1990

Drawn By: GTI

TORRANCE GROUNDWATER TECHNOLOGY, INC.

Project Name: International Rectifier

Project Number: 214-799-8639-00

Appendix

Page 3

Boring/Well Number: V3

DEPTH (FEET)	WELL CONST. PIPE	WELL CONST. FILL	PID (PPM)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS	GRAPHIC SYMBOL	DESCRIPTION
55			170	V3-55		13 30 44		Red brown fine medium and coorse sand, damp, no plastic.
60			300	V3-60		17 10 38		Red brown fine sand, damp, not plastic, loose, uniform grain size.
65			300	V3-65		44 40 38		Red brown fine sand, damp, not plastic, loose, uniform grain size.
70								
75								
80			ND	V3-80				Same as above, brown.
85								

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20,000 Mariner Avenue, Suite 200 • Torrance, California 90503 • (213) 371-1394

Date: February 12, 1990

Drawn By: GTI

TORRANCE GROUNDWATER TECHNOLOGY, INC.

DRILLING & LITHOLOGIC LOG

Well/Boring #GTI-1

Project: International Rectifier Corporation — Owner: International Rectifier Corporation

Location: 233 Kansas St., El Segundo, CA — Project Number: 021700267

Depth (Feet)	Well Const. Pipe	Well Const. Fill	OVA (PPM)	Samples Number	Samples Condition	Samples Blows	Graphic Log	USCS Symbol	Description
80			0.5	GTI-1-80		27 32 50		SP	Poorly graded SAND: Light brown, 95% fine Sand, 5% Silt; slightly moist, no odor.
85			0.6	GTI-1-85		27 34 39		SP	Poorly graded SAND: Light brown, 95% fine Sand, 5% Silt; slightly moist, no odor.
90			4.6	GTI-1-90		44 50		SP	Poorly graded SAND: Light brown, 95% fine Sand, 5% Silt; slightly moist, no odor.
									Bottom of boring at 90.0 feet. Sampled to 91.5 feet. Backfilled to surface with concrete. All percentages are approximate.
95									
100									
105									
110									

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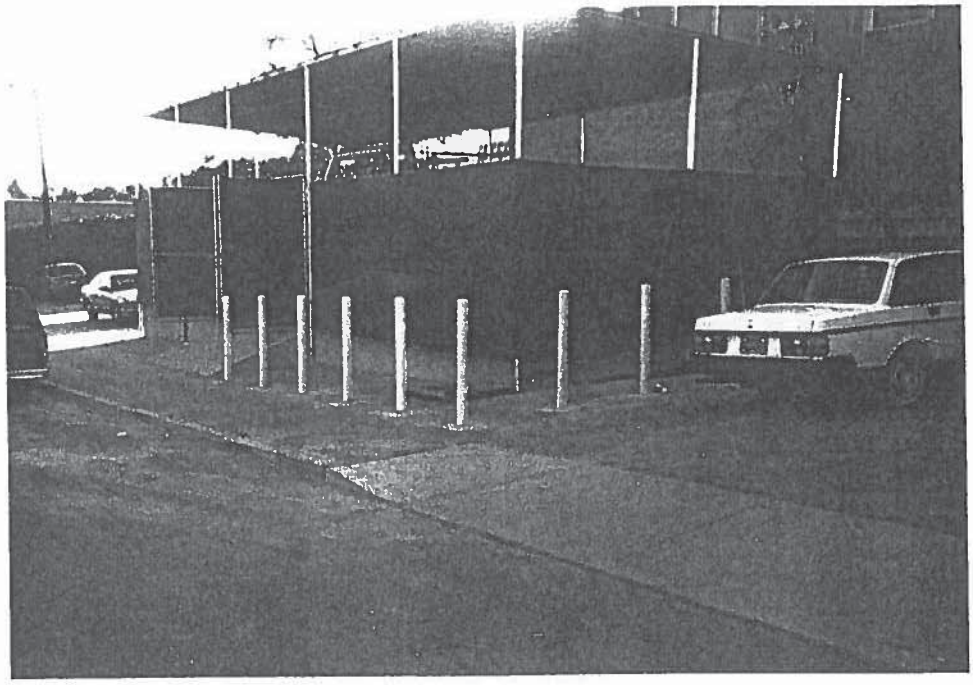
20000/200 Mariner Avenue • Torrance, California 90503 • (310) 371-1394

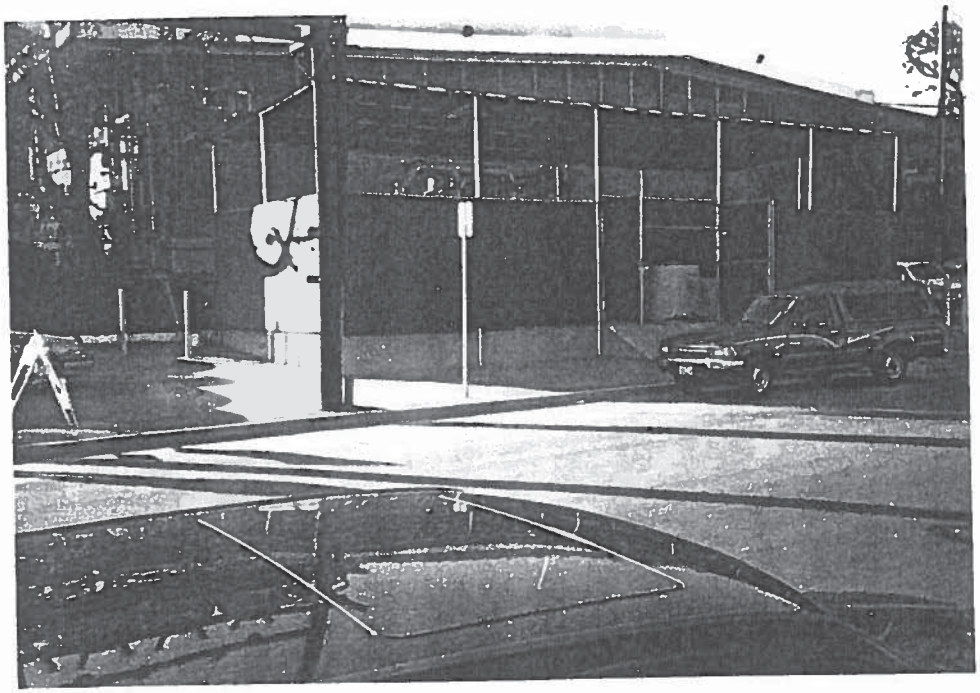
April 16, 1993 | Drawn By: GTI (b) | Page: 4 of 4

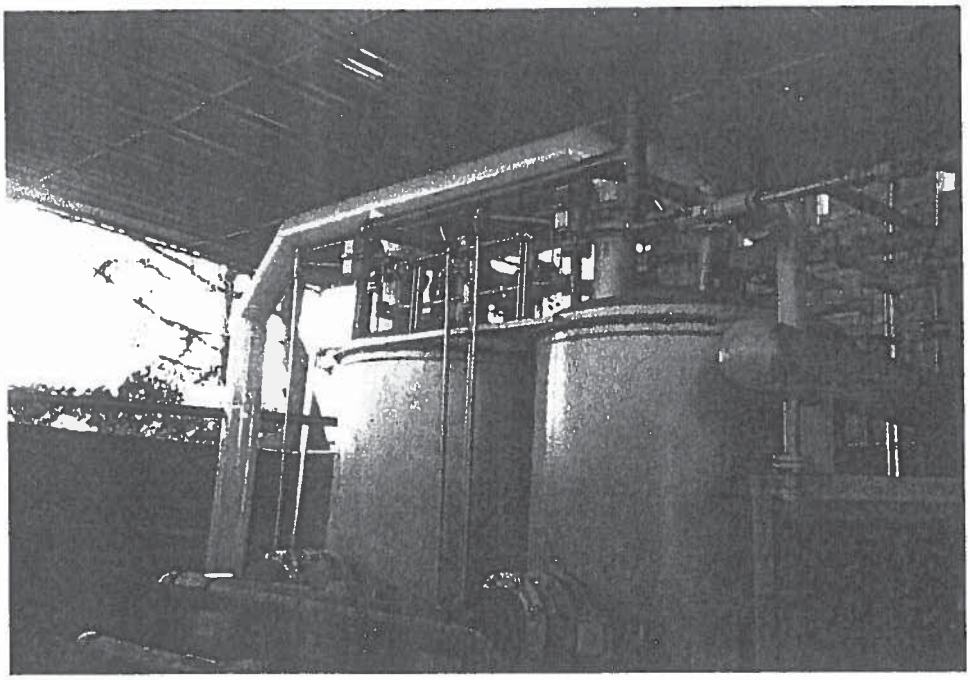
GROUNDWATER TECHNOLOGY, INC.



Above: Remediation compound with roof and vehicle barrier posts (looking southwest)

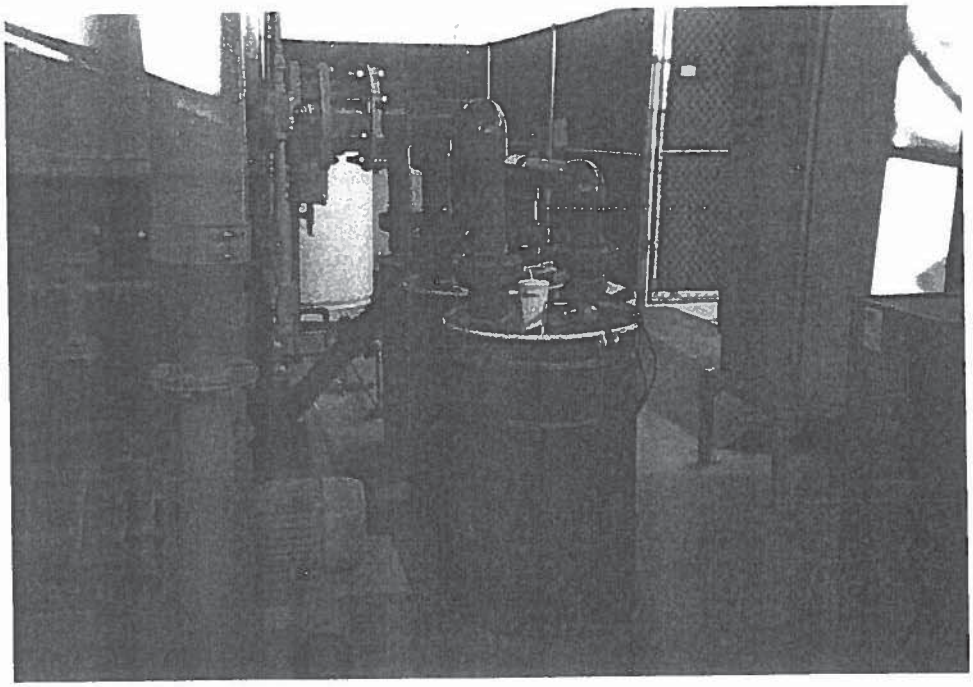
Below: Remediation compound with roof and vehicle barrier posts (looking northwest)

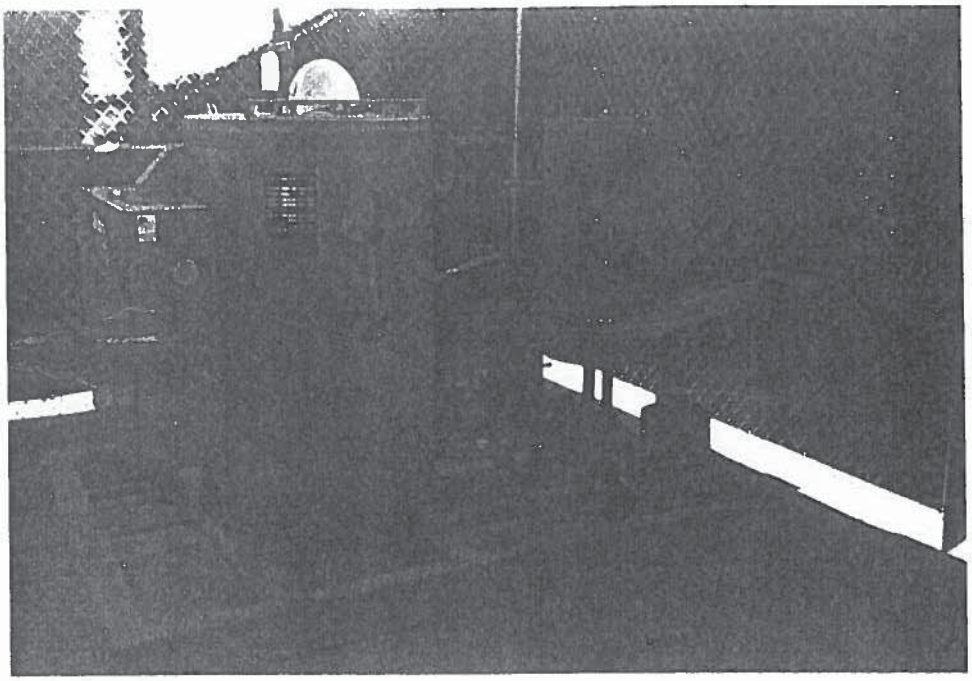




Above: Two regenerable carbon tanks with upper vapor manifold (front view)

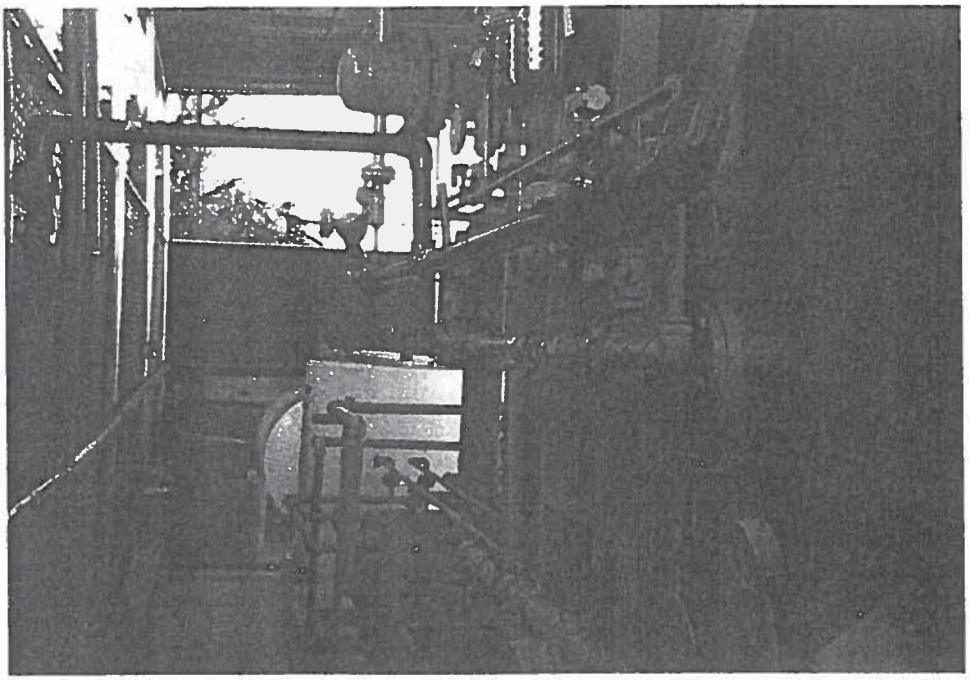
Below: Three disposable polishing carbon drums with lower vapor manifold (side view)

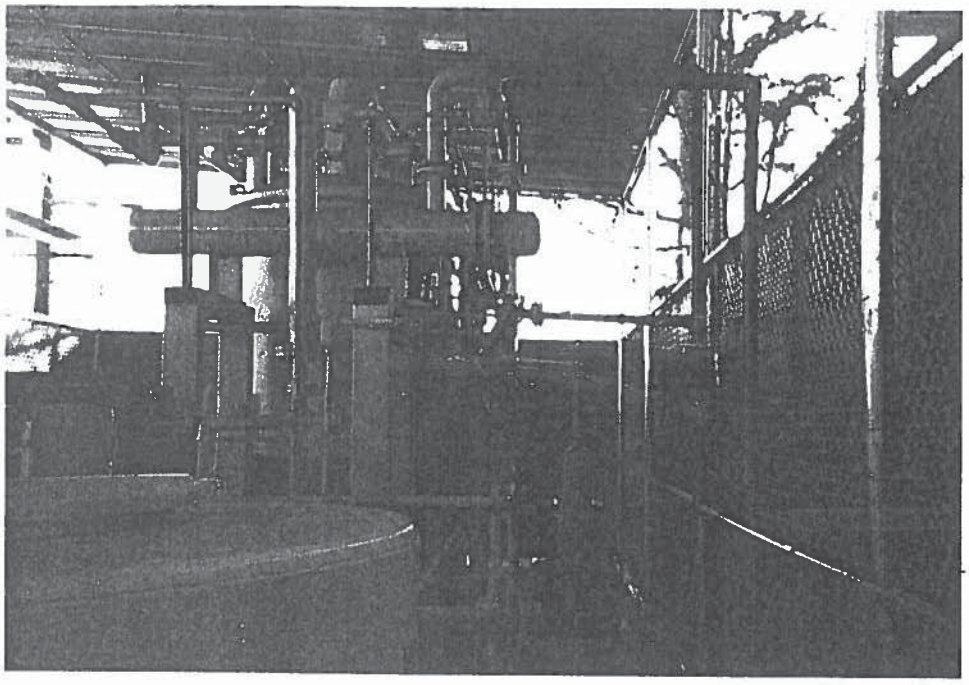




Above: An electric boiler (with feedwater tank) is used to generate steam for desorption

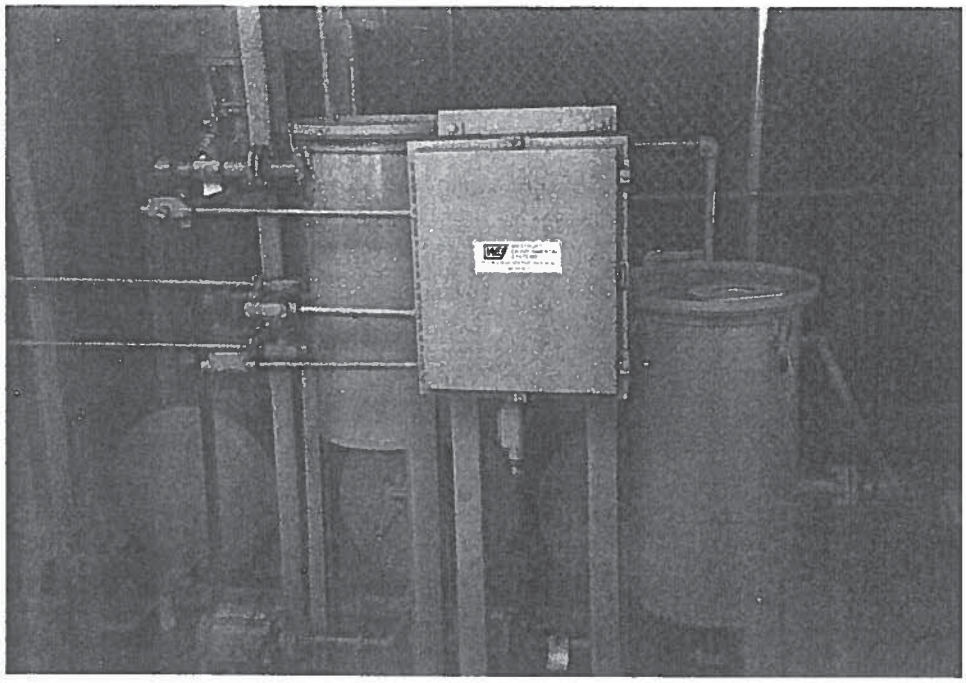
Below: Steam is injected into the bottom of each carbon tank via piping along rear of system

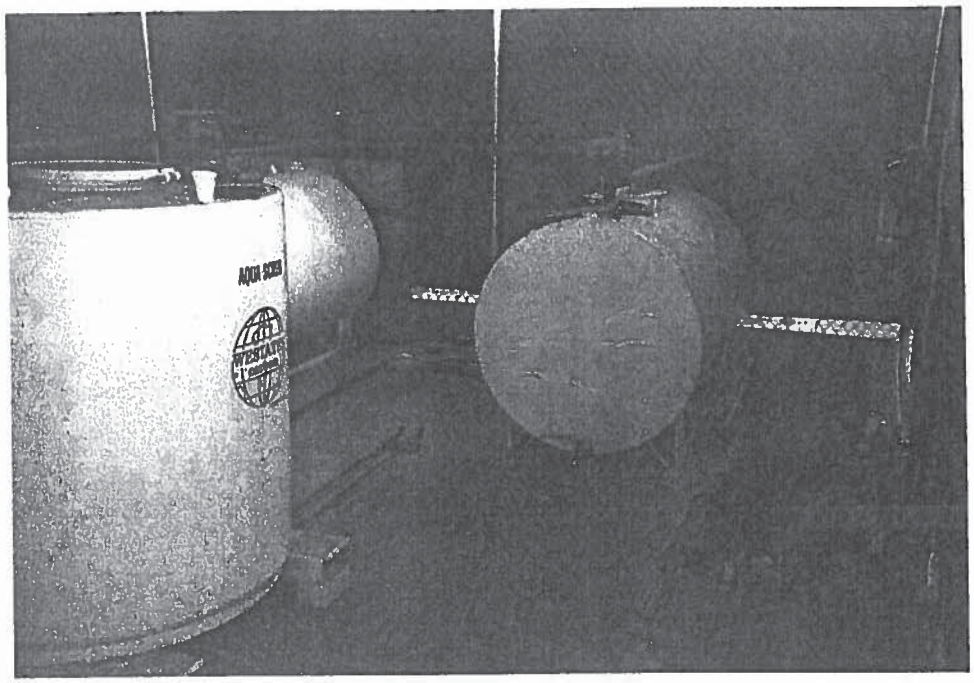




Above: Steam and contaminant stream are condensed using cooling water (horizontal vessel)

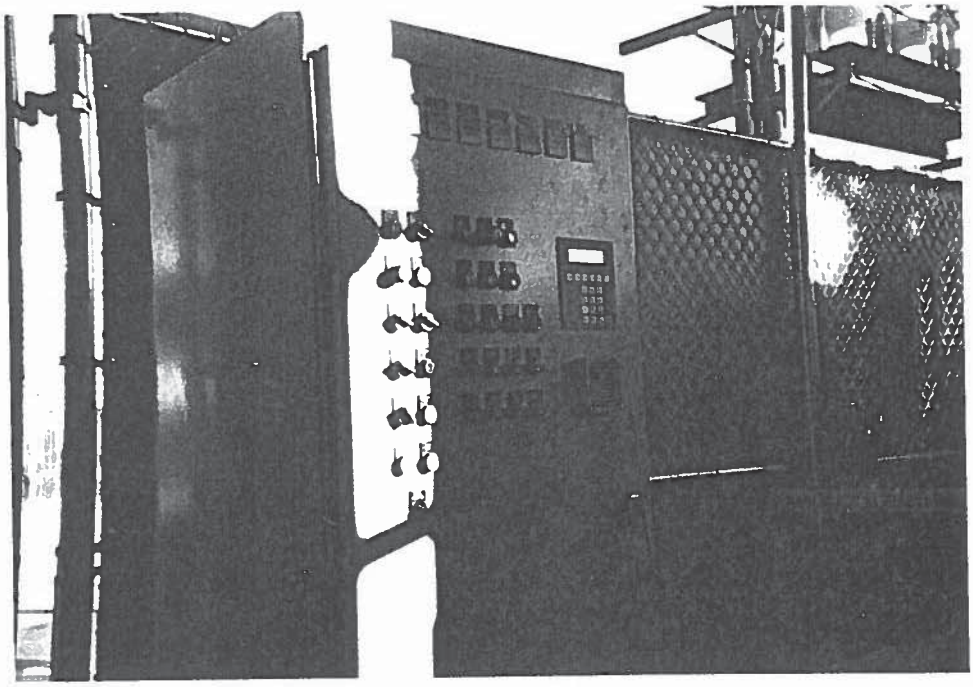
Below: Product and condensate are separated via a three phase decanting system





Above: Separate-phase product is temporarily stored on site in steel tanks

Below: Operation of the regenerable system is controlled from a central panel



COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS
900 SOUTH FREMONT AVENUE
ALHAMBRA, CALIFORNIA 91803-1331
Telephone: (818) 458-5100

THOMAS A. TIDEMANSON, Director

ADDRESS ALL CORRESPONDENCE TO
P.O.BOX 1460
ALHAMBRA, CALIFORNIA 91802-1460

January 24, 1991

IN REPLY PLEASE
REFER TO FILE I-15781

Mr. Gerald Nassif
International Rectifier
233 Kansas Street
El Segundo, CA 90245

Dear Mr. Nassif:

UST LOCAL OVERSIGHT PROGRAM REVIEW SHEET
HAZARDOUS MATERIALS UNDERGROUND STORAGE
REMEDIAL ACTION PLAN
CLOSURE PERMIT NO. 7211B
FACILITY: 233 KANSAS STREET, EL SEGUNDO

This office has reviewed the Remedial Action Plan submitted on December 11, 1990, dated June 21, 1990. The comments in this letter must be addressed and submitted to this office by February 25, 1991.

The Remedial Action Plan has been reviewed and found adequate, except as noted below.

1. The extent of the contamination has not been defined to the north and west of the former tank pit (as mentioned on page 8 of the Remedial Action Plan). Also, the vertical extent of the contamination does not appear to have been completely defined. Assessment and remediation will be required in these areas.

2. The petroleum contamination detected in boring V-1 needs to be addressed.

3. Quarterly Remediation Progress Reports must be submitted.

4. A verification sampling plan should be submitted and approved prior to commencement of verification activities.

5. Respond to the inquiries stated on the enclosed "Hydrogeologic Report Correction/Review Sheet."

You are cautioned that any contaminated soils or hazardous materials generated during the approved operation must be manifested and transported to a hazardous waste disposal facility as required by California Health and Safety Code, Division 20, Chapter 6.5, unless evidence is presented indicating that the material may be disposed of at a less restricted facility. Copies of all completed manifests shall be submitted to this office as part of the final report.

Notify Dave Lobato at (818) 458-4374 a minimum of 72 hours prior to commencing any significant investigation, remediation, or assessment activities on site. The Los Angeles County Department of Public Works may disregard the work performed if the County was not properly notified.

Correspondence should be submitted to the Los Angeles County Department of Public Works, UST Local Oversight Program, Annex Building, P. O. Box 1460, Alhambra, CA 91802-1460.

If you have any questions regarding this matter, please contact Tom Lawrence at (818) 458-3531.

Very truly yours,

T. A. TIDEMANSON
Director of Public Works

By Tom Lawrence
Tom Lawrence
UST Local Oversight Program
Waste Management Division

Reviewed for
Pat Prgano, P. E.
Supervising Civil Engineer II
Waste Management Division

Enc.

cc: California Regional Water Quality Control Board
Mr. Mark Bierei, Groundwater Technology

ts(10)/15781

(ıex Building, P. O. Box 14(
Alhambra, CA 91802-1460
(818) 458-3979
Monday - Thursday
7:00 a.m. to 5:00 p.m.

GEOLOGIC/HYDROGEOLOGIC REPORT CORRECTION/REVIEW SHEET

REVIEW OF UNDERGROUND STORAGE TANK (UST) REPORTS INCLUDE:

_____	Closure Report	_____	Site Remediation Report
_____	Site Assessment Proposal	_____	Post Remediation Monitoring Report
_____	Site Assessment Report	_____	Final Monitoring Report
6/21/90	Site Remediation Proposal	_____	Other

OUR FILE NUMBER I- 15781

By the Consulting Firm GROUNDWATER TECHNOLOGY INC. Their Job Number 217-799-8639-03
Consultants Phone (213) 371-1394 Contact Person MARK A. BIEREI

Site Name INTERNATIONAL RECTIFIER CORP.
Site Address 233 KANSAS ST.
EL SEGUNDO, CALIF. 90245

RP Name INTERNATIONAL RECTIFIER CORP.
RP Address 233 KANSAS ST.
EL SEGUNDO, CA. 90245
ATTN: MR. GERALD NASSIF

ACTION

_____ Geologic/Hydrogeologic Section Approved:
X Geologic/Hydrogeologic Section Approved, Yet Subject to Conditions Below:
_____ Prior to Geologic/Hydrogeologic Approval, Satisfy Conditions Below:

THE REMEDIAL ACTION PLAN IS APPROVED WITH THE STIPULATION THAT THE FOLLOWING ITEMS LISTED BELOW ARE ADDRESSED:

A) IT SHOULD BE NOTED THAT ALL SUBSEQUENT REPORTS AND/OR PROPOSALS REQUIRE WET INK SIGNATURES IN ORDER TO BE CONSIDERED VALID.

B) SUBMIT COPIES OF THE LAB RESULTS FROM PETROLEUM TESTING SERVICE INC. DOCUMENTING THE AIR PERMEABILITY AND SIEVE ANALYSIS FOR SAMPLES COLLECTED FROM BORING V-1.

C) PROVIDE MORE INFORMATION AND ILLUSTRATE THE METHOD USED TO DETERMINE THE PERMEABILITIES AND THE AVERAGE RADIUS OF INFLUENCE DURING THE PILOT TEST.

D) Submit precise calculations regarding volume in pounds per square foot between 5-foot contours indicative of PCE concentrations

_____ Satisfy Conditions on the Attached Supplemental Geologic/Hydrogeologic Report Correction/Review Sheet for UST Reports

Report reviewed by G. K. Johnson Date 12/18/90
Greg K. Johnson

A. G. Keene C.E.G. No. 16 Date 12-19-90

JTH COAST AIR QUALITY MANAGEMENT STRICT
21865 East Copley Drive, Diamond Bar, CA 91765

PERMIT TO CONSTRUCT/OPERATE

Permit No.
D84689
A/N 292576
Page 1

This initial permit must be renewed ANNUALLY unless the equipment is moved, or changes ownership. If the billing for annual renewal fee (Rule 301.f) is not received by the expiration date, contact the District.

Legal Owner or Operator: INTERNATIONAL RECTIFIER CORP
233 KANSAS ST
EL SEGUNDO, CA 90245

ID 016613

Equipment Location: 222-348 KANSAS ST, EL SEGUNDO, CA 90245

Equipment Description:

SOIL-VAPOR-EXTRACTION AND TREATMENT SYSTEM CONSISTING OF:

1. A VAPOR EXTRACTION WELL.
2. MOISTURE SEPARATOR.
3. EXTRACTION BLOWER, 500 CFM.
4. TWO REGENERATIVE CARBON ADSORBERS, WESTPORT ENV. SYS. IN PARALLEL, WITH 1,000 POUNDS TOTAL ACTIVATED CARBON EACH.
5. THREE CARBON ADSORBERS, NORTHWESTERN CARBON, MODEL V-400, IN PARALLEL, WITH 400 POUNDS ACTIVATED CARBON EACH.
6. TWO SOLVENT RECOVERY TANK, 3'-9.5"DIA. X 6'-1"L, 500 GALLONS CAPACITY.

Conditions:

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.
3. THE AMOUNT OF BENZENE IN THE CARBON ADSORBER EXHAUST STREAM SHALL NOT EXCEED 0.0101 POUNDS PER DAY (0.0695 PARTS PER MILLION BY VOLUME(PPMV) AT 500 CFM) AS DETERMINED BY METHOD 410A OF THE CALIFORNIA AIR RESOURCES BOARD.

ORIGINAL

JTH COAST AIR QUALITY MANAGEMENT TRICT
21865 East Copley Drive, Diamond Bar, CA 91765

PERMIT TO CONSTRUCT/OPERATE

CONTINUATION OF PERMIT TO CONSTRUCT/OPERATE

THE AMOUNT OF TRICHLOROETHENE (TCE) IN THE EXHAUST STREAM SHALL NOT EXCEED 0.3320 POUNDS PER DAY (1.357 PPMV) AS DETERMINED BY METHOD 422 OF THE CALIFORNIA AIR RESOURCES BOARD. EXTRACTED VAPOR SHALL BE ANALYZED FOR BENZENE AND TCE VAPOR CONCENTRATION IMMEDIATELY AFTER START-UP OF THE EQUIPMENT. THE RESULTS SHALL BE SUBMITTED TO THE DISTRICT WITHIN 30 DAYS OF THE ANALYSIS.

4. A FLOW INDICATOR SHALL BE INSTALLED AND MAINTAINED AT THE INLET OF THE PRIMARY ADSORPTION UNITS TO MEASURE THE TOTAL FLOW RATE IN CUBIC FEET PER MINUTE (CFM).

5. THE FLOW RATE MEASURED UNDER CONDITION NUMBER 4 SHALL NOT EXCEED 500 CFM.

6. THE EXTRACTION BLOWER SHALL ONLY BE OPERATED WHEN ALL EXTRACTED VAPORS ARE VENTED TO THE ADSORPTION SYSTEM WHICH CONSISTS OF TWO 1,000 POUND ACTIVATED CARBON PRIMARY UNITS AND THREE PARALLEL 400 POUND ACTIVATED CARBON SECONDARY UNITS, AND WHEN THERE IS NO DETECTABLE LEAKS BETWEEN THE OUTLET OF THE BLOWER AND THE OUTLET OF THE SECONDARY CARBON ADSORBERS.

7. VOLATILE ORGANIC COMPOUND (VOC) CONCENTRATIONS SHALL BE MONITORED AT THE OUTLET OF THE SECONDARY ADSORPTION UNIT CONTINUOUSLY BY USING A FLAME IONIZATION DETECTOR OR A DISTRICT APPROVED ORGANIC VAPOR ANALYZER CALIBRATED IN PARTS PER MILLION BY VOLUME (PPMV) OF HEXANE.

8. THE CARBON IN THE SECONDARY ADSORBERS SHALL BE REPLACED WHEN THE VOC CONCENTRATION MEASURED AT THE EXIT OF THE SECONDARY ADSORBERS UNDER CONDITION NO. 7 EXCEEDS 37 PPMV.

9. EQUIPMENT SHUTDOWN INTERLOCKS SHALL BE PROVIDED FOR WHEN THE VOC CONCENTRATION IN THE OUTLET OF THE VAPOR CONTROL SYSTEM EXCEEDS 37 PPMV.

10. THE ACTIVATED CARBON USED IN THE ADSORBERS SHALL HAVE A CARBON TETRACHLORIDE NUMBER (CTC) NOT LESS THAN 60% AS MEASURED BY ASTM METHOD D-3467.

11. RECORDS SHALL BE MAINTAINED TO PROVE COMPLIANCE WITH CONDITIONS 3,5,7,8,9 AND 10. THE RECORDS SHALL BE PREPARED IN A FORMAT APPROVED BY THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT WHICH SHALL BE KEPT FOR AT LEAST TWO YEARS AND MADE AVAILABLE TO DISTRICT PERSONNEL UPON REQUEST.

( )TH COAST AIR QUALITY MANAGEMENT(TRICT
21865 East Copley Drive, Diamond Bar, CA 91765

PERMIT TO CONSTRUCT/OPERATE

Permit No.
D84689
A/N 292576
Page 3

CONTINUATION OF PERMIT TO CONSTRUCT/OPERATE

NOTICE

IN ACCORDANCE WITH RULE 206, THIS PERMIT TO OPERATE OR COPY SHALL BE POSTED ON OR WITHIN 8 METERS OF THE EQUIPMENT.

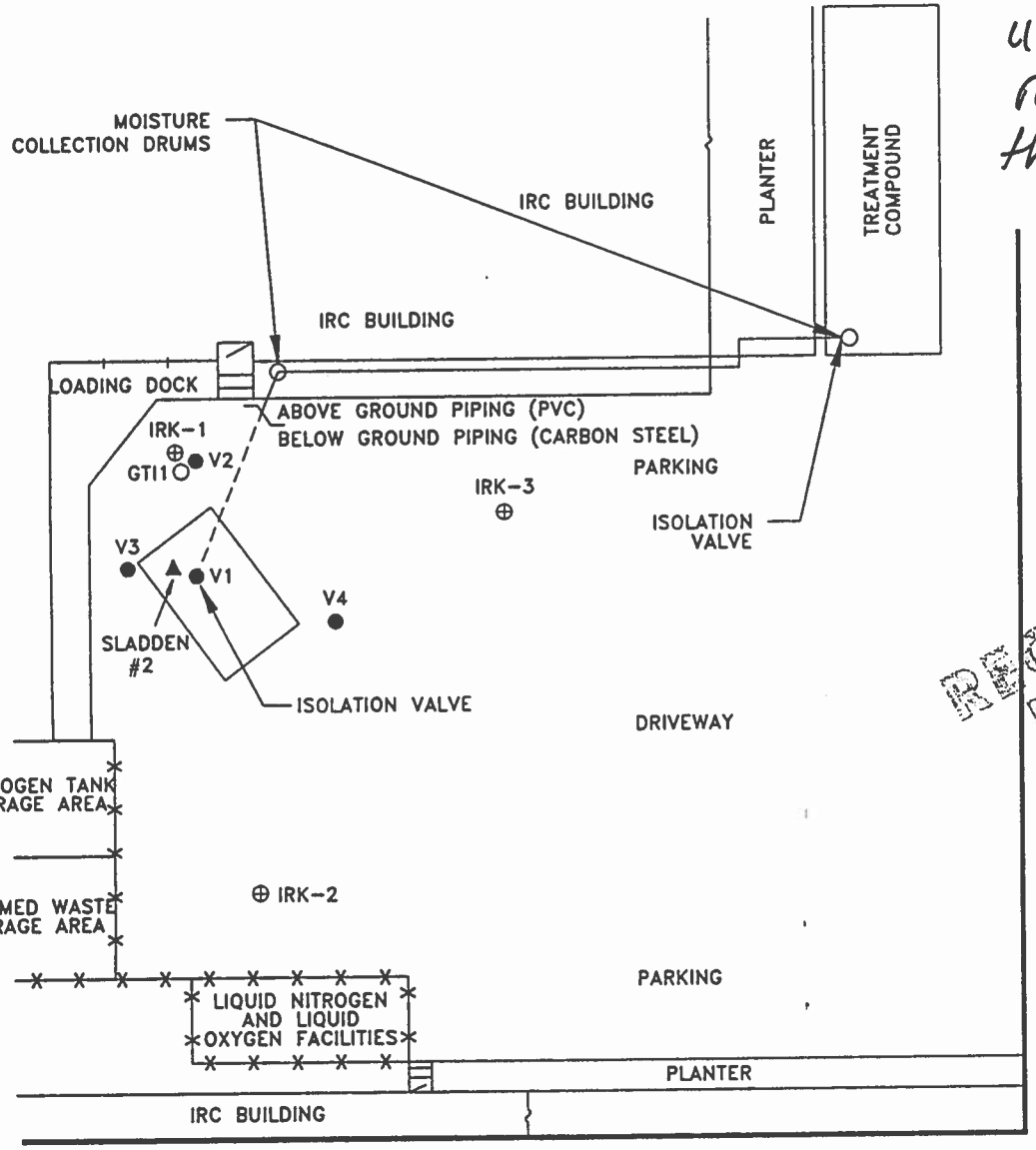
THIS PERMIT DOES NOT AUTHORIZE THE EMISSION OF AIR CONTAMINANTS IN EXCESS OF THOSE ALLOWED BY DIVISION 26 OF THE HEALTH AND SAFETY CODE OF THE STATE OF CALIFORNIA OR THE RULES OF THE AIR QUALITY MANAGEMENT DISTRICT. THIS PERMIT CANNOT BE CONSIDERED AS PERMISSION TO VIOLATE EXISTING LAWS, ORDINANCES, REGULATIONS OR STATUTES OF OTHER GOVERNMENT AGENCIES.

EXECUTIVE OFFICER

Dorris M Bailey

By Dorris M. Bailey/rel
8/15/1994

ORIGINAL



U- Parking Spots will be relocated to 266 California St. through attached off-street Parking Covenant.

N

LEGEND

- GTI BORING
- GTI SOIL VAPOR WELL
- E&E BORING
- SLADDEN ENGINEERING BORING

RECEIVED
AUG 30 1994
BUILDING DEPT.
KANSAS STREET

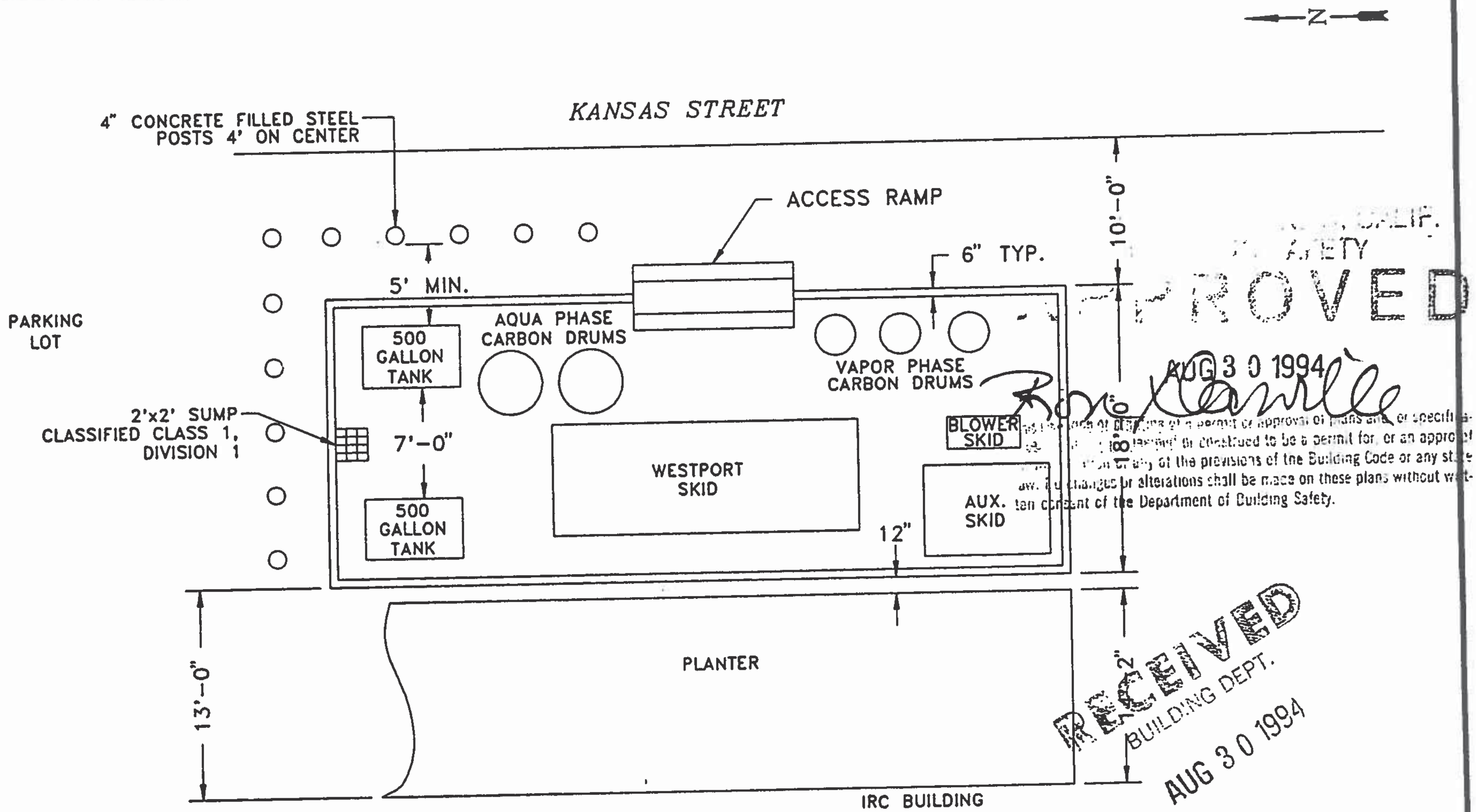
APPROVED
DEPARTMENT OF BUILDING SAFETY
AUG 30 1994

The issuance or granting of a permit or approval of plans and/or specifications shall not be construed or construed to be a permit for, or an approval of any violation of any of the provisions of the Building Code or any state law. No changes or alterations shall be made on these plans without written consent of the Department of Building Safety

NOTES:

1. PLANS SHALL COMPLY WITH THE 1991 U.B.C., U.M.C., U.P.C., AND THE 1990 N.E.C.
2. SEPARATE ELECTRICAL, PLUMBING, AND MECHANICAL PERMITS SHALL BE OBTAINED AS REQUIRED.
3. FERROUS GAS PIPING SHALL BE CORROSION PROTECTED PER U.P.C. 1213(e)(g).

GROUNDWATER TECHNOLOGY	0 FEET 20 SCALE NOT A SURVEYED MAP	CLIENT: INTERNATIONAL RECTIFIER CORPORATION	SITE PLAN
FILE: 1381SMA (1:20)	PROJECT NO.: 043501381	LOCATION: 233 KANSAS STREET EL SEGUNDO, CALIFORNIA 90245	PM: / PE/RG: / FIGURE: 1
REV.: 2	DES.: TH / DET.: SP / DATE: 8/30/94		

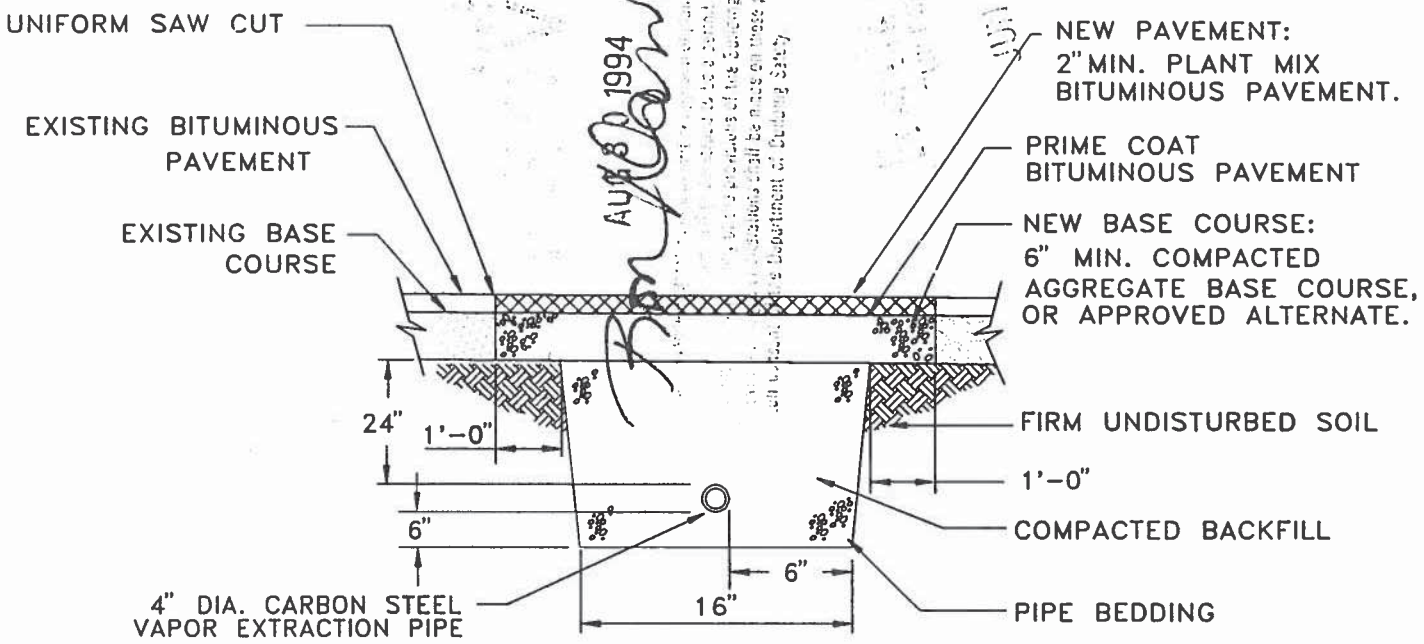


NOTE:

1. THE MINIMUM DISTANCE TO THE PROPERTY LINE IS 10 FEET (PER U.F.C. 82.1045(c). THIS MINIMUM DISTANCE WILL BE ADHERED TO IN ALL DIRECTIONS.
2. THE EQUIPMENT COMPOUND LOCATION WAS PREVIOUSLY USED AS A PARKING LOT. THE PARKING LOT WILL BE RESTORED TO ITS INITIAL STATE UPON COMPLETION OF THE PROJECT IN APPROXIMATELY 9-12 MONTHS.

GROUNDWATER TECHNOLOGY	0 FEET 10 SCALE	CLIENT: INTERNATIONAL RECTIFIER CORPORATION	ELECTRICAL CLASSIFICATION PLAN
FILE: 1381-ELP (1:10)	PROJECT NO.: 042501381	LOCATION: 233 KANSAS STREET EL SEGUNDO, CALIFORNIA	PM: / PE/RG: / FIGURE: 2
REV.:		DES.: TH / DET.: SP / DATE: 9/29/94	

FIGURE 3



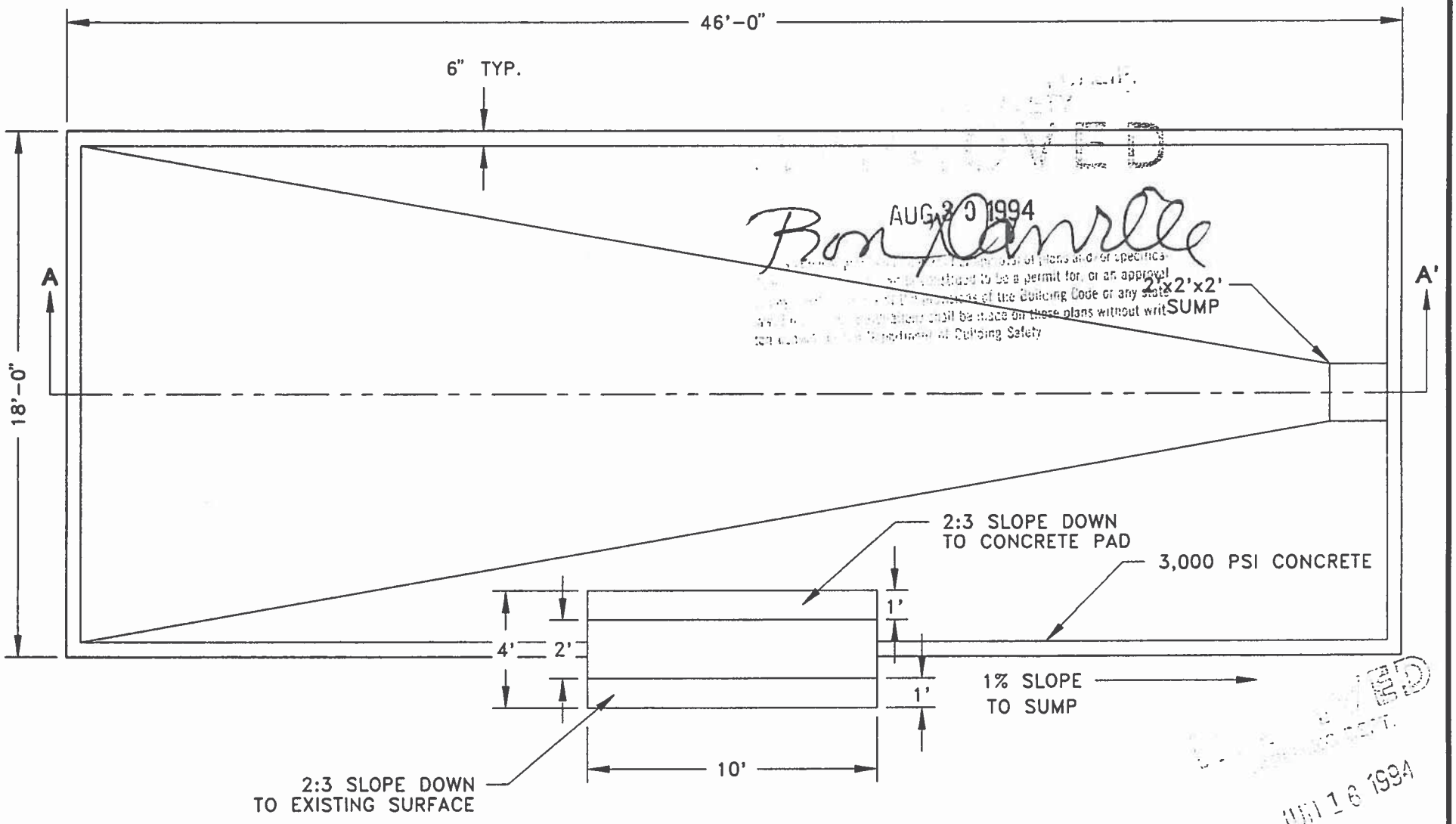
NOTES:

1) NEW PAVEMENT AND AGGREGATE BASE SHALL BE OF THE SAME TYPE AND THICKNESS AS THAT WHICH IS REMOVED, BUT IN NO CASE SHALL BE LESS THAN INDICATED.
2) BITUMINOUS PAVEMENT SHALL BE AMERICAN PUBLIC WORKS ASSOC. APWA 2205 PLANT MIX. WEARING/SURFACE COURSE TYPE 3, BINDER/BASE COURSE TYPE 1.
3) TACK COAT ALL SAW CUT EDGES WITH RC-70, MC-30, OR MC-70 LIQUID ASPHALTS.
4) REMOVE AND DISPOSE OF ALL EXCESS MATERIALS IN CONFORMANCE WITH APPLICABLE REGULATIONS.
5) COMPACT 6" (MIN.) PIPE BEDDING TO 95% STANDARD PROCTOR DENSITY.
6) COMPACT BACKFILL TO 90% STANDARD PROCTOR DENSITY.

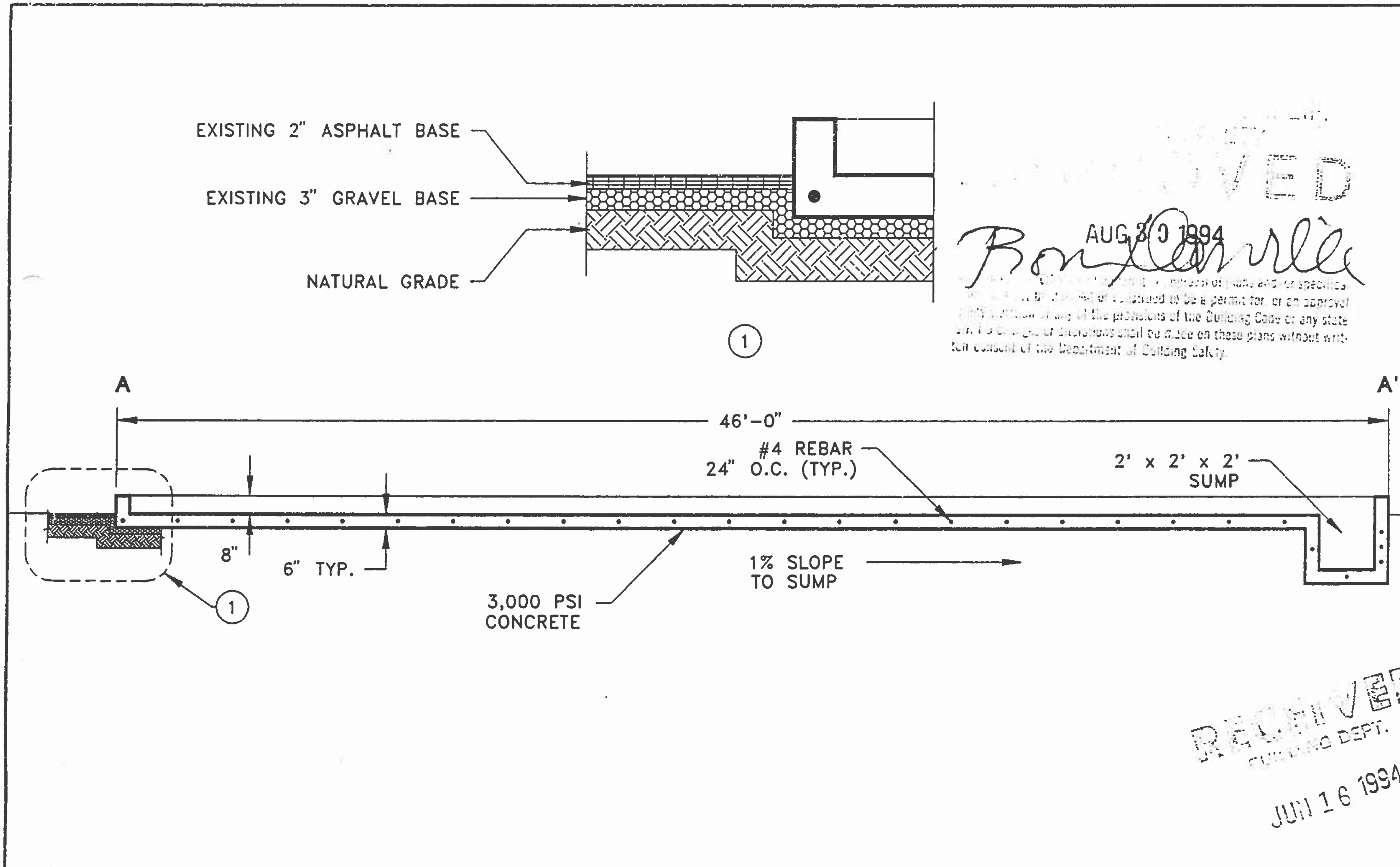
TRENCH CONSTRUCTION DETAIL

5/25/94 FILE NAME: 1381-TCD

GROUNDWATER TECHNOLOGY



GROUNDWATER TECHNOLOGY	0 FEET 5 SCALE	CLIENT: INTERNATIONAL RECTIFIER CORPORATION	EQUIPMENT PAD DETAIL
		LOCATION: 233 KANSAS STREET EL SEGUNDO, CALIFORNIA	
FILE: 1381-SMP (1:5)	PROJECT NO.: 042501381	PM:	PE/RG: FIGURE: 4
REV.:	DES.: TH / DET.: SP / DATE: 6/9/94		



GROUNDWATER TECHNOLOGY

0 FEET 5
SCALE

CLIENT: INTERNATIONAL RECTIFIER CORPORATION

LOCATION: 233 KANSAS STREET EL SEGUNDO, CALIFORNIA

EQUIPMENT PAD SECTION

FILE: 1381-SEC (1:5)

PROJECT NO.: 042501381

REV.:

DES.: TH

DET.: SP

DATE: 6/7/94

PM:

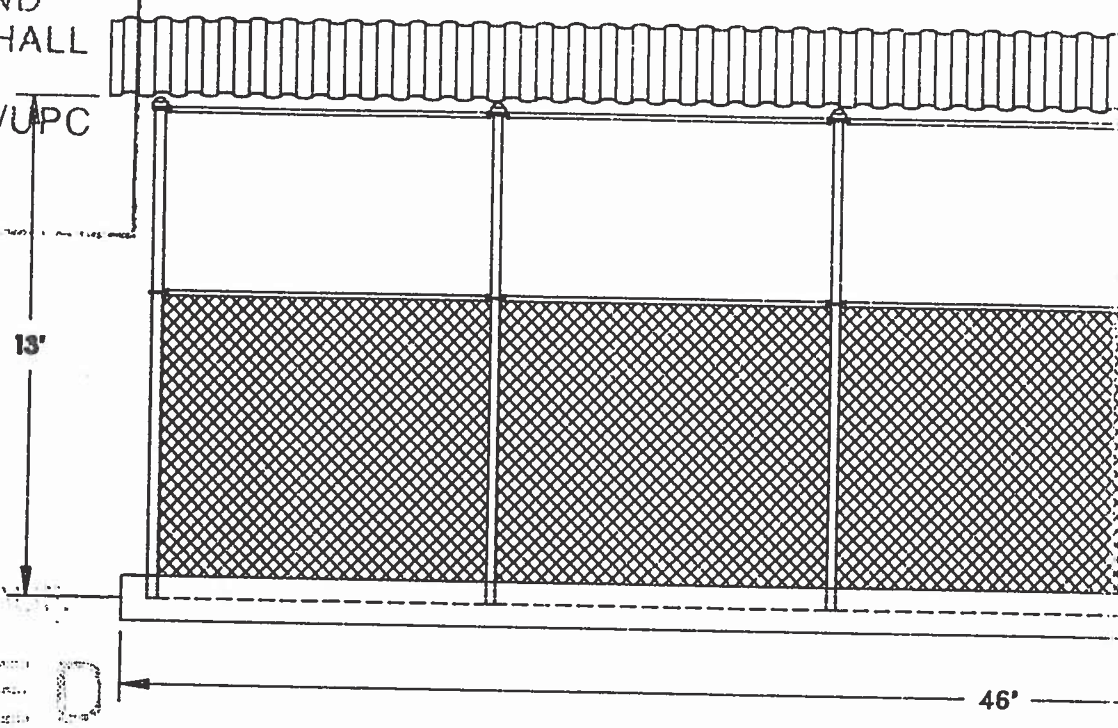
PE/RG:

FIGURE: 5

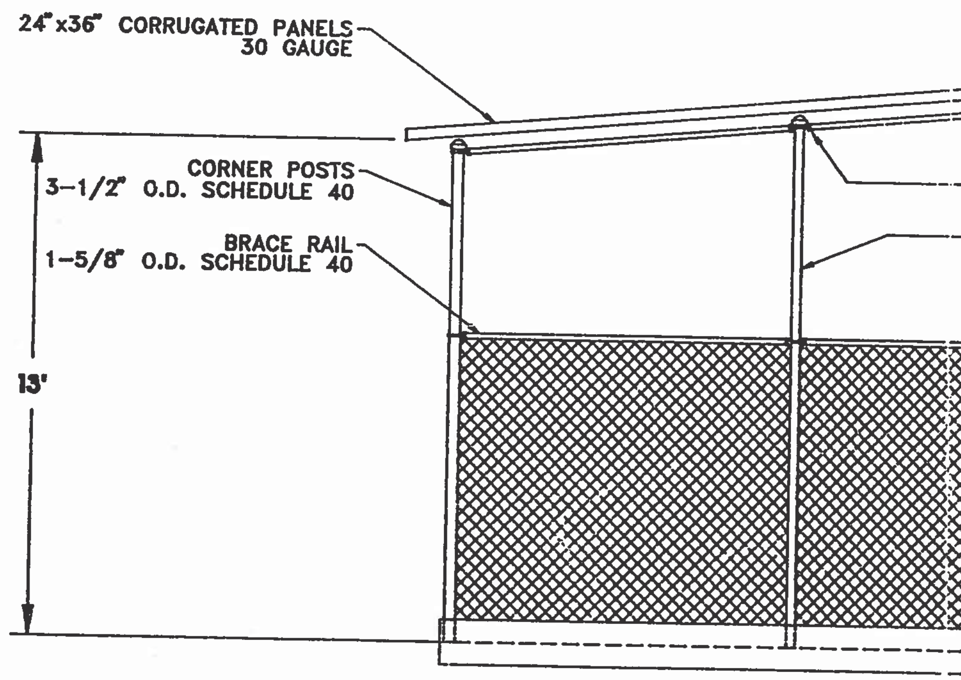
ALL DESIGNS AND INSTALLATIONS SHALL COMPLY WITH 1991 ED. UBC/UMC/UPC & 1990 ED. NEC

APPROVED

AUG 3 0 1994



FRONT VIEW



SIDE VIEW

EL SEGUNDO FIRE DEPARTMENT INSPECTION RECORD
FIRE PREVENTION BUREAU
314 MAIN STREET
EL SEGUNDO, CA 90245

FPF-59
REV 7/92

PHONE# (310) 322-4311
FAX# (310) 414-0929

PC# 519-94

JOB ADDRESS: 233 Kansas St.
PHONE#
OWNER: Int'l. Rectifier
JOB DESCRIPTION: Fencing, foundation for new remediation system

INSPECTION TYPE	DATE	INSPECTED BY
SPRINKLER SYSTEM (NFPA 13/UFC 10)		
___Underground Hydro		
___Underground Flush		
___Overhead Hydro		
___Final		
STANDPIPE SYSTEM (NFPA 14/UFC 10)		
___Wet___Dry___Comb. (FPBR S-4a-b-d)		
___Hydro___Flow		
___Final		
FIRE HYDRANTS (NFPA 24/UFC 10)		
___Underground Hydro		
___Underground Flush		
___Flow		
FIRE ALARM SYSTEM (NFPA 72/UFC 10)		
___Detectors		
___Manual Pull Stations		
___Audibles		
___Supervision		
___Annunciation/Control Panel		
___Final		
TENANT IMPROVEMENTS		
___Corridor		
___Exit Signs		
___Fire Estinguishers		
___Other		
___Final		
FIRE PROTECTION SYSTEMS		
___CO2 System (NFPA 12/FPBR E-2c)		
___Wet Dry Chemical System (NFPA 17/FPBR E-2-a)		
___Halon 1301 System (NFPA 12A)		
___Functional Test (FPBR E-2c)		
___Final		
U/G TANK (NFPA 30/FPBR F-1b)		
___Removal___Install		
___Hydro___Final		
CRYOGENIC TANK (NFPA 30/FPBR f-1b)		
___Hydro		
___Final		
LPG TANK (FPBR C-a)		
___Tank Installation		
___Dispensing Installing		
___Final		
OTHER Ver[illegible] site + [illegible]		
INITIAL INSPECTION OK	12-9-94	[illegible]
FINAL — SIGNS + NFPA DIAMON FOR FINAL		

NOTICE: This card must be posted in conspicuous place on the job.
NOTIFY FIRE DEPARTMENT when job is ready for inspection.
48 HOUR inspection notice is required.
APPROVED PLANS SHALL BE ON JOB SITE

BUILDING PERMIT

City of El Segundo

DEPARTMENT OF BUILDING SAFETY

PLAN CHECK NO. 519-94 | DRAWING NO.

BUILDING ADDRESS 233 KANSAS ST.

TRACT | BLOCK/PAGE | LOT/PARCEL

APPLICANT GROUNDWATER TECHNOLOGY, Inc.
ADDRESS 20,000 / 200 Mariner Ave.
CITY Torrance ZIP 90503 PHONE (310) 371-1394

OWNER
NAME International Rectifier, Corp.
ADDRESS 233 KANSAS ST. PHONE 322-3331
CITY El Segundo, CA STATE/ZIP 90245

ARCHITECT
NAME | LICENSE
ADDRESS | PHONE
CITY | STATE/ZIP

ENGINEER
NAME | LICENSE
ADDRESS | PHONE
CITY | STATE/ZIP

CONTRACTOR
NAME Groundwater Technology
MAILING ADDRESS 20,000/200 Mariner Ave.
CITY Torrance TELEPHONE (310) 371-1394
STATE CA ZIP 90503 CITY LIC. NO. 12686

I hereby affirm that I am licensed under provisions of Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code, and my license is in full force and effect.
License Class A License No. 434343
Date 6/31/94 Signature of Contractor [signature]

CONST.

TYPE OF CONST.	GROUP	FIRE ZONE
USE ZONE	REQ'D YARDS	
NO. STORIES	SIZE OF CONST.	
USE OF BUILDING:		UBC ED 91
SPRINKLERED YES NO		
WET STANDPIPES YES NO		

ZONING

FRONT SET BACK	REAR SET BACK
SIDE SET BACK	HEIGHT OF BLDG.
SPACES REQ'D	BLDG. AREA
SPACES PROVIDED	

DESCRIPTION OR REMARKS: NEW: X ADDITION ALTERATION

Remediation System
Construct Soil Remediation System @ International Rectifier Corp. System Equipment will be removed in approx. 1 year

APPLICANT
I certify that I have read this application and state that the above information is correct. I agree to comply with all city and county ordinances and state laws relating to building construction, and hereby authorize representatives of this city to enter upon the above-mentioned property for inspection purposes.
[signature] 6/16/94
Signature of Applicant or Agent Date

WORKER'S COMPENSATION

WORKERS' COMPENSATION DECLARATION

I hereby affirm that I have a certificate of consent to self-insure, or a certificate of Workers' Compensation Insurance, or a certified copy thereof (Sec. 3800, Lab. C.).
Policy No. WC5650054 Company Nat'l Union
☐ Certified copy is hereby furnished 5-1-95 KB
☒ Certified copy is filed with the City building inspection department.
DATE 8/30/94 APPLICANT [signature]

CERTIFICATE OF EXEMPTION FROM WORKERS' COMPENSATION INSURANCE

This section need not be completed if the permit is for one hundred dollars ($100) or less. I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner as to become subject to the Workers' Compensation Laws of California.

Date _____ Applicant _____

NOTICE TO APPLICANT: If, after making this Certificate of Exemption, you should become subject to the Workers' Compensation provisions of the Labor Code, you must forthwith comply with such provisions or this permit shall be deemed revoked.

OWNER/BUILDER

I hereby affirm that I am exempt from the Contractor's License Law for the following reason (Sec. 7031.5, California Business and Professional Code: Any City which requires a permit to construct, alter, improve, demolish or repair any structure, prior to its issuance, also requires the applicant for such permit to file a signed statement that he is a licensed contractor pursuant to the provisions of the Contractor's License Law (CH. 9 (Commencing with Sec. 7000) of Div. 3 at the B. & P.C.) or that he is exempt therefrom and the basis of the alleged exemption.
Any violation of Sec. 7031.5 by any applicant for a permit subjects the applicant to a civil penalty of not more than five hundred dollars ($500.00.):

☐ I, as sole owner of the property, or my employees with wages as their sole compensation, will do the work and the structure is not intended or offered for sale (Sec. 7044, B. & P.C.: The Contractor's License Law does not apply to an owner of property who builds or improves thereon, and who does such work himself or through his own employees, provided that such improvements are not intended or offered for sale. If, however, the building or improvement is sold within one year of completion, the owner-builder will have the burden of proving that he did not build or improve for the purpose of sale.)

☐ I, as owner of the property, am exclusively contracting with licensed contractors to construct the project (Sec. 7044, B. & PC: The Contractor's License Law does not apply to an owner of property who builds or improves thereon, and who contracts for such projects with a contractor(s) license pursuant to the Contractor's License Law.). I am aware that proof of their Worker's Compensation Insurance should be provided to me.

☐ I am exempt under Sec. _____, B. & P.C. for this reason: _____

Date _____ Owner _____

LENDER

CONSTRUCTION LENDING AGENCY

I hereby affirm that there is a construction lending agency for the performance of the work for which this permit is issued (Sec. 3097, Civ. C.)

Lender's Name None
Lender's Address _____

FOR DEPT. USE ONLY

APPL. REC. BY [signature] DATE 6/16/94

APPROVALS

BLDG. SAFETY	FIRE DEPT
PLANNING	PARKS/REC.
PUBLIC WORKS	

VALUATION OF JOB $ 17,058-

FEES

S.M.I. FEE CAT. #	2	$ 3.58
ENERGY PLAN CHECK		$ 0
PLAN CHECK FEE		$ 388.08
BUILDING PERMIT FEE		$ 252.00
PLAN RETENTION FEE		$ 15.50
TOTAL		$ 659.16

PERMIT ISSUE DATE 8-31-94

READ CONDITIONS BELOW

The work authorized by issuance of this permit is subject to all the rules and regulations set forth in the ordinances and amendments of the City of El Segundo, and the laws of the State of California in regard to such work, and all amendments thereto.

This permit becomes null and void if work is not commenced within one hundred eighty (180) days from date of issuance or if work is suspended at any time during construction for the same period of time, or if any work is done in violation of the City Ordinance or State laws governing same.

VALIDATION

Distribution: WHITE (Dept.) YELLOW (Applicant) dbs-Form B-102/10/92

1991 ED. UBC/UMC/UPC
&
1990 ED. NEC

...NDO, CALIF.
BUILDING SAFETY
APPROVED
OCT 18 1994

...uance or granting of a permit or approval of plans and/or specifica-
...ns shall not be deemed or construed to be a permit for, or an approval
...any violation of any of the provisions of the Building Code or any state
...w. No changes or alterations shall be made on these plans without writ-
...sent of the Department of Building Safety.

RECEIVED
BUILDING DEPT.
OCT 18 1994

PANEL SHALL HAVE INTRRUPTING
AND PANEL SHALL BE BRACED
IL.

IENT COMPOND IS CLASS I, DIVISION 2.

/ICES AT TREATMENT COMPOUND
SHALL BE EXPLOSION PROOF RATED
S LOCATION.

WING THIS AREA SHALL BE SEALED
DARY LINE.
USED AT 18" A.F.F. OR MORE.

CT SHALL BE COPPER, STRANDED,

TERIALS SHALL BE IN ACCORDANCE
D ORDINANCES.

L BE WEATHERPROOF OR SUITABLE
LY PROTECTED.

AND INSTALLED OVERHEAD.

OLOGY INC. DRAWINGS.

AROUND DEVICES AND 18" ABOVE
RD PRODUCING EQUIPMENT.

IOVED.

REGISTERED PROFESSIONAL ENGINEER
JAMES T. BRODIE
No. 5469
ELECTRICAL
STATE OF CALIF.

GROUN...
ELECTRIC...
FILE 1381-ELP (1" =

CPM
CREATIVE POWER MANAGEMENT

JAMES T. BRODIE
ELECTRICAL ENGINEER
5233 Bakman Ave.
N. Hollywood, CA 91601
(818)985-2836

Date 10-14-1...
Scale N.T.S.
Drawn G.B. (RO-E1)
Job
Sheet E-1
Of Sheets

ELECTRICAL PERMIT

City of El Segundo
BUILDING SAFETY DEPARTMENT

19 94 001658

APPLICANT Trent Henderson

ADDRESS 20000/200 Mariner Ave.

Torrance, CA ZIP 90503-1670 PHONE 310/371-1394

NAME International Rectifier Corp.

ADDRESS 233 Kansas St. PHONE 322-3331

CITY El Segundo STATE/ZIP CA 90503

NAME LICENSE

ADDRESS N/A PHONE

CITY STATE/ZIP

NAME James Brady / CPM LICENSE 5469

ADDRESS 5233 Bakman PHONE 818/985-2634

CITY N. Hollywood STATE/ZIP CA 91601

I hereby affirm that I am licensed under provisions of Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code, and my license is in full force and effect.

License Class X (Lic. No./State 434343

Date 11-14-94 Contractor Trent Henderson

I hereby affirm that I am exempt from the Contractor's License Law for the following reason (Sec. 7031.5 California Business and Professional Code: Any City which requires a permit to construct, alter, improve, demolish or repair any structure, prior to its issuance, also requires the applicant for such permit to file a signed statement that he is a licensed contractor pursuant to the provisions of the Contractor's License Law (CH. 9 (Commencing with Sec. 7000) of Div. 3 at the B. & P.C.) or that he is exempt therefrom and the basis of the alleged exemption. Any violation of Sec. 7031.5 by any applicant for a permit subjects the applicant to a civil penalty of not more than five hundred dollars ($500.00).

☐ I, as owner of the property, or my employees with wages as their sole compensation, will do the work and the structure is not intended or offered for sale (Sec. 7044, B. & P.C.: The Contractor's License Law does not apply to an owner of property who builds or improves thereon, and who does such work himself or through his own employees, provided that such improvements are not intended or offered for sale. If, however, the building or improvement is sold within one year of completion, the owner-builder will have the burden of proving that he did not build or improve for the purpose of sale.)

☐ I, as owner of the property, am exclusively contracting with licensed contractors to construct the project (Sec. 7044, B. & P.C.: The Contractor's License Law does not apply to an owner of property who builds or improves thereon, and who contracts for such projects with a contractor(s) license pursuant to the Contractor's License Law.) I am aware that proof of their Worker's Compensation Insurance should be provided to me.

☐ I am exempt under Sec. _____, B & P.C., for this reason: _____

Date _____ Owner _____

WORKER'S COMPENSATION DECLARATION

I hereby affirm that I have a certificate of consent to self-insure, or a certificate of Worker's Compensation Insurance, or a certified copy thereof (Sec. 3800, Lab. C.).

Policy No. WC5050054 Company Pac Union Fire 5-1-95

☐ Certified copy is hereby furnished.

☒ Certified copy is filed with the city building inspection department or county department.

Date 11-14-94 Applicant Trent Henderson

CERTIFICATE OF EXEMPTION FROM WORKERS' COMPENSATION INSURANCE

This section need not be completed if the permit is for one hundred ($100) or less.

I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the Workers' Compensation Laws of California.

Date _____ Applicant _____

NOTICE TO APPLICANT: If, after making this Certificate of Exemption, you should become subject to the Workers' Compensation provisions of the Labor Code, you must forthwith comply with such provisions or this permit shall be deemed revoked.

CONSTRUCTION LENDING AGENCY

I hereby affirm that there is a construction lending agency for the performance of the work for which this permit is issued (Sec. 3097, Civ. C)

Lender's Name none

Lender's Address _____

I certify that I have read this application and state that the above information is correct. I agree to comply with all city and county ordinances and state laws relating to building construction, and hereby authorize representatives of this city to enter upon the above mentioned property for inspection purposes.

Trent Henderson 11/14/94

Signature of Applicant or Agent Date

Form E-103 1/8 Distribution: GREEN (Dept.) YELLOW (Applicant) BLUE (Dept.) GREEN (Dept)

Building Address 233 Kansas St. Building No.

Tract Block / Page Lot / Parcel

Contractor's Name Groundwater Technology, Inc.

Mailing Address 20,000/200 Mariner Avenue

City Torrance Telephone No. (310) 371-1394

State Lic. No. 434343 City Lic. No. 12686

P.C. No. E60-94 No. of Plans 2 Resid _____

N.E.C. '90 Date 10/18/94 Comm. _____ Indus. X

SERVICE	NUMBER	EACH	FEES
Service Size 201-400 AMPS	1		20.00
Service over 600 volts		60.00	
Additional Meters		5.00	
Panel Board	2	10.00	20.00
SWITCHBOARDS (other than service sections)			
First Section		35.00	
Additional Sections		30.00	
Over 600 Volt Sections		60.00	
Additional Sections		55.00	
OUTLETS			
Switch, Light, Receptacle		.50	
Light Fixtures		.50	
Appliance (Domestic)		4.00	
Appliance (Commercial)	1	8.00	8.00

POWER EQUIPMENT HP OR KVA

UP TO 5HP	7	6.50	45.50	50.1 — 10HP	33.00	
5.1 to 20HP	2	10.00	20.00	Over 100HP	50.00	
20.1 to 50HP		15.00				

Temporary Power Pole	20.00	
Permanent Power Pole	20.00	
Fire Warning, Communications, Emergency, Control Systems, Smoke Detectors & Signal System		
QUANTITY		
Control Equipment for above systems		
QUANTITY		
Investigation Fee	100.00	

PERMIT FEE 44.50 + 64.00 (Sub Total)

REMARKS Ref # 519-94 Plan Check Fee 28.93 + 44.85 = 73.78

Plan Ret. Fee 2.50

Issuance Fee $15.00

Issue Date 11-14-94 TOTAL FEE 204.78

READ CONDITIONS BELOW

The work authorized by issuance of this permit is subject to all the rules and regulations set forth in the ordinances and amendments of the City of El Segundo, and the laws of the State of California in regard to such work, and all amendments thereto.

This permit becomes null and void if work is not commenced within one hundred eighty (180) days from date of issuance, or if work is suspended at any time during construction for the same period of time, or if any work is done in violation of the City Ordinance or State laws governing same.

VALIDATION

City of El Segundo

350 Main Street
El Segundo, CA 90245
Cash Receipt
(310) 322-4670

CITY OF EL SEGUNDO 10/7543
MON, NOV 14, 1994, 10:43 AM Rec 01
Validation Receipt

CHARGES-

013406	233 KANSAS STREET	$ 15.00
013406	ELECTRICAL PERMITS	$ 44.50
013406	ELECTRICAL PERMITS	$ 67.00
013808	PLAN CHECK FEES	$ 29.75
013809	PLAN RETENTION FEE	$ 2.38

Sub-total $*******159.63

PAYMENT-

Check# 2155 $ 159.63

Change $*********0.00

INSPECTION RECORD
DEPT. OF BUILDING SAFETY
CITY OF EL SEGUNDO

350 Main Street
7:30am-5:30pm, M-F 322-4670

Bldg Inspector: Pat Miner - LOREN Telephone Extension: X413 X 810

24-Hour Inspection Request Telephone 310-322-7069

POST THIS CARD IN A SAFE & CONSPICUOUS PLACE

Job Address 233 Kenwood
Permit No. 519-94 Date Issued
Owner Int'l. Rectifier
Contractor Groundwater
Description of Work Fence, Remed.

Inspector Must Sign All Spaces Pertaining To This Job
REQUEST ALL INSPECTIONS 24 HOURS IN ADVANCE

INSPECTIONS	DATE	APPROVED BY
Temporary Power Pole		
Building Location		
Foundation		
Reinforcing Steel	9-12-94	
UFER Ground		
OK to Pour Footings*		
*Do Not Pour Concrete Until the Above is Signed.		
Electrical Underground/Floor		
Plumbing Underground/Floor		
Floor Joists & Sills		
OK to Sheath Floor/Pour Slab*		
*Do Not Sheath Floor/Pour Slab Until the Above is Signed.		
Floor Nailing		
Roof Tear Off		
Roof Sheathing/Nailing*		

Appendix A-1

Appendix A-1

350 Main Street EXT. 294 - STEVE STEIN
322-4670 POLICY #9144149311133

CITY OF EL SEGUNDO, CALIFORNIA

Permit to do

WORK IN PUBLIC STREET CK. 1126-94

EXP. 11-5-94

Date 9-14, 19 94

Location of Work 233 KANSAS
No. Street

☐ Owner INT'L RECTIFIER

Address 233 KANSAS

City E.S., CA 90245 Tel. No. 322-3331

☒ Contractor GROUNDWATER TECHNOLOGY, INC. ~~SOUTH COASTERS CRANE~~

DEPOSIT RETURN TO: DAVID J. LUBBEN

Address 1049 W. 13TH ST. #4

City SAN PEDRO CA. 90732 Tel. No. 213) 371-1394 X252 ~~310) 615-7364~~

El Segundo Business License No. 12686

State Contractor's License No. 434343 A

Curb — Remove _____ Ln. ft.; Construct _____ Ln. ft.

Sidewalk — Remove _____ (Width X Length) = _____ Sq. ft.; Construct _____ (Width X Length) = _____ Sq. ft.

Driveway appr. — Remove _____ (Width X Length) = _____ Sq. ft.; Construct _____ (Width X Length) = _____ Sq. ft.

Pavement — Remove _____ (Width X Length) = _____ Sq. ft.; Construct _____ (Width X Length) = _____ Sq. ft.

☐ Curb Crossing — At one location — 15 Ln. Ft.

☐ Material Storage — ½ of Traveled Right of Way
Barricades and Lights to be Provided by Applicant

☐ Set Poles _____ ☐ Remove Poles _____

☐ Install Pipe/Conduit _____

☒ Other Work — Describe: ENCROACHMENT OF PUBLIC RIGHT OF WAY FOR CRANE OPERATION BETWEEN 7AM TO 11 AM ON 9-15-94

* COMPLY WATCH MANUAL

SPECIAL NOTICE.

☐ Do Not Pour Concrete Until Forms have been approved.

☐ Do Not Place Backfill except in the presence of an authorized Inspector. Backfill must be select material.

☐ Grade must be inspected before pavement is placed.

☐ Curb and Sidewalk must be protected by planking.

☐ No trees to be planted in public right of way.

☒ No trees to be removed except by Parks Dept.

Permittee MUST give at least 24 hours notice for any inspection under this permit.
Work will not be approved until proper clean-up of debris is accomplished.

The deposit made herein is collected by the City of El Segundo at the time of issuance of permit in order to insure the workmanlike completion of the work authorized under the permit. The deposit will be refunded in full at such time as the work authorized by the permit is completed to the satisfaction of the Street Superintendent. In the event such work be not completed to his satisfaction, the Street Superintendent will notify the permittee in writing of this fact and state what must be done to make the work acceptable. The work must be completed within the period of time specified by the Street Superintendent in such written notice and in the event such work is not completed satisfactorily within such time limit, the Street Department will correct the deficiency and charge the cost thereof against the deposit. If any balance remains after the Street Department has corrected the work, such balance will be refunded to the permittee. In the event that the cost of correcting the work is greater than the deposit, the permittee will be billed by the Department for the difference between the cost incurred and the deposit on hand. Failure to pay such bill will result in rendering the permittee ineligible for any other Street Department permit until such bill is paid.

I hereby acknowledge that I have read this application and state that the above is correct and agree to comply with all City ordinances and State Laws regulating this work.

I certify that I possess the above valid City of El Segundo Business License, or I am the legal owner of the property described above.

Signature of Permittee David Lubben

This permit shall be void unless the work herein contemplated shall have been completed within six months of date issued.

Do Not Write Below This Line

Permit Fee $ 140.00 Franchise ☐

Deposit: Cash $ 200.00 Bond No. _____

Inspection Fee DEP. $ 100.00

Total $ ~~240.00~~

Deposit Refunded $ _____ Date _____

Bond exonerated Date _____

By _____

Valid when receipted

Permittee shall guarantee construction performed under this permit against defects in materials & workmanship for period of one year from date of acceptance by City of El Segundo.

ALL WORK DONE IN PUBLIC RIGHT OF WAY TO BE BARRICADED AND LIGHTED BY CONTRACTOR

Approved: ED SHRODER
Street Superintendent

By David Lubben 9-14, 19 94

Inspection Record

Remarks: _____

Accepted _____, 19 ____

Inspector

IMPORTANT NOTICE
Section 4216/4217 of the Government Code requires a Dig Alert Identification Number be issued before a Permit to Excavate will be valid. For your Dig Alert I.D. Number Call Underground Service Alert TOLL FREE 1-800-422-4133 Two working days before you dig

Quanterra
Environmental Services

Quanterra Incorporated
18501 East Gale Avenue #130
City of Industry, California 91748

818 965-1006 Telephone
818 965-1003 Fax

December 28, 1994

GROUNDWATER TECHNOLOGY, INC.
20000 Mariner Ave., Ste. 200
Torrance, CA 90503
ATTN: MR. BRIAN DEAN

ANALYSIS NO.: 109272-0001-SA
ANALYSES: Volatile Organics by GCMS - Modified EPA TO14
DATE SAMPLED: 12/21/94
DATE SAMPLE REC'D: 12/22/94

PROJECT: IRC EL SEGUNDO

Enclosed with this letter is the report on the chemical and physical analyses for the sample from ANALYSIS NO.: 109272-0001-SA as shown above.

The sample was received by Quanterra Environmental Services, City of Industry, intact and with the chain-of-custody record attached.

Please note that ND means not detected at the reporting limits expressed.

APPROVED

1/5/95
DATE

Quanterra
Environmental Services

SAMPLE DESCRIPTION INFORMATION
for
Groundwater Technology, Inc.

Lab ID	Client ID	Matrix	Sampled Date	Sampled Time	Received Date
109272-0001-SA	INF-1	AIR	21 DEC 94	15:20	22 DEC 94

Quanterra Environmental Services

Volatile Organics by GCMS - EPA TO14

Client Name: Groundwater Technology, Inc.
Client ID: INF-1
Lab ID: 109272-0001-SA
Matrix: AIR
Authorized: 22 DEC 94

Sampled: 21 DEC 94
Prepared: NA

Received: 22 DEC 94
Analyzed: 23 DEC 94

Parameter	Result	Units	Reporting Limit
Dichlorodifluoromethane	ND	ppb (v/v)	100000
Chloromethane	ND	ppb (v/v)	200000
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	ppb (v/v)	100000
Vinyl chloride	ND	ppb (v/v)	100000
Bromomethane	ND	ppb (v/v)	100000
Chloroethane	ND	ppb (v/v)	200000
Trichlorofluoromethane	ND	ppb (v/v)	100000
1,1-Dichloroethene	ND	ppb (v/v)	100000
Carbon disulfide	ND	ppb (v/v)	500000
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	ppb (v/v)	100000
Acetone	ND	ppb (v/v)	500000
Methylene chloride	ND	ppb (v/v)	100000
trans-1,2-Dichloroethene	ND	ppb (v/v)	100000
1,1-Dichloroethane	ND	ppb (v/v)	100000
Vinyl acetate	ND	ppb (v/v)	500000
cis-1,2-Dichloroethene	ND	ppb (v/v)	100000
2-Butanone	ND	ppb (v/v)	500000
Chloroform	ND	ppb (v/v)	100000
1,1,1-Trichloroethane	ND	ppb (v/v)	100000
Carbon tetrachloride	ND	ppb (v/v)	100000
Benzene	ND	ppb (v/v)	100000
1,2-Dichloroethane	ND	ppb (v/v)	100000
Trichloroethene	ND	ppb (v/v)	100000
1,2-Dichloropropane	ND	ppb (v/v)	100000
Bromodichloromethane	ND	ppb (v/v)	100000
cis-1,3-Dichloropropene	ND	ppb (v/v)	100000
4-Methyl-2-pentanone	ND	ppb (v/v)	200000
Toluene	ND	ppb (v/v)	100000
trans-1,3-Dichloropropene	ND	ppb (v/v)	100000
1,1,2-Trichloroethane	ND	ppb (v/v)	100000
Tetrachloroethene	7900000	ppb (v/v)	100000
2-Hexanone	ND	ppb (v/v)	200000
Dibromochloromethane	ND	ppb (v/v)	100000
1,2-Dibromoethane (EDB)	ND	ppb (v/v)	100000
Chlorobenzene	ND	ppb (v/v)	100000
Ethylbenzene	400000	ppb (v/v)	100000
Xylenes (total)	1300000	ppb (v/v)	100000
Styrene	ND	ppb (v/v)	100000
Bromoform	ND	ppb (v/v)	100000

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Dave Olson

Approved By: Val Mallari

Quanterra Environmental Services

Volatile Organics by GCMS - EPA TO14 (CONT.)

Client Name: Groundwater Technology, Inc.
Client ID: INF-1
Lab ID: 109272-0001-SA
Matrix: AIR
Authorized: 22 DEC 94

Sampled: 21 DEC 94
Prepared: NA

Received: 22 DEC 94
Analyzed: 23 DEC 94

Parameter	Result	Units	Reporting Limit
1,1,2,2-Tetrachloroethane	ND	ppb (v/v)	100000
4-Ethyl toluene	ND	ppb (v/v)	100000
1,3,5-Trimethylbenzene	ND	ppb (v/v)	100000
1,2,4-Trimethylbenzene	ND	ppb (v/v)	100000
1,3-Dichlorobenzene	ND	ppb (v/v)	100000
1,4-Dichlorobenzene	ND	ppb (v/v)	100000
1,2-Dichlorobenzene	ND	ppb (v/v)	100000
1,2,4-Trichlorobenzene	ND	ppb (v/v)	200000
Hexachlorobutadiene	ND	ppb (v/v)	200000

ND = Not detected
NA = Not applicable

Reported By: Dave Olson

Approved By: Val Mallari

Quanterra
Environmental Services

QC LOT ASSIGNMENT REPORT - MS QC
Air Toxics

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK/LCS)	MS QC Run Number (SA,MS,SD,DU)
109272-0001-SA	AIR	TO-14	23 DEC 94-B1	23 DEC 94-B1	

Quanterra
Environmental Services

DUPLICATE CONTROL SAMPLE REPORT
Air Toxics
Project: 109272

Category: TO-14 Method TO-14 - Volatile Organics
Matrix: AIR
QC Lot: 23 DEC 94-B1
Concentration Units: ppb (v/v)

Date Analyzed: 23 DEC 94

Analyte	Concentration Spiked	Measured DCS1	Measured DCS2	AVG	Accuracy Average(%) DCS	Accuracy Limits	Precision (RPD) DCS	Precision Limit
Methylene chloride	48.4	51.0	50.7	50.8	105	86-116	0.59	10
1,1-Dichloroethene	48.4	51.2	49.9	50.6	104	90-115	2.6	10
Trichloroethene	36.7	37.8	37.8	37.8	103	85-114	0.0	10
Toluene	48.4	53.7	53.9	53.8	111	92-114	0.37	10
1,1,2,2-Tetrachloroethane	55.5	60.2	55.7	58.0	104	76-124	7.8	10

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quanterra
Environmental Services

METHOD BLANK REPORT
Air Toxics
Project: 109272

Test: TO-14-MOD-G
Matrix: AIR
QC Run: 23 DEC 94-B1

Volatile Organics by GCMS - Modified EPA TO-14

Date Analyzed: 23 DEC 94

Analyte	Result	Units	Reporting Limit
Dichlorodifluoromethane	ND	ppb (v/v)	2.0
Chloromethane	ND	ppb (v/v)	4.0
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	ppb (v/v)	2.0
Vinyl chloride	ND	ppb (v/v)	2.0
Bromomethane	ND	ppb (v/v)	2.0
Chloroethane	ND	ppb (v/v)	4.0
Trichlorofluoromethane	ND	ppb (v/v)	2.0
1,1-Dichloroethene	ND	ppb (v/v)	2.0
Carbon disulfide	ND	ppb (v/v)	10
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	ppb (v/v)	2.0
Acetone	ND	ppb (v/v)	10
Methylene chloride	ND	ppb (v/v)	2.0
trans-1,2-Dichloroethene	ND	ppb (v/v)	2.0
1,1-Dichloroethane	ND	ppb (v/v)	2.0
Vinyl acetate	ND	ppb (v/v)	10
cis-1,2-Dichloroethene	ND	ppb (v/v)	2.0
2-Butanone	ND	ppb (v/v)	10
Chloroform	ND	ppb (v/v)	2.0
1,1,1-Trichloroethane	ND	ppb (v/v)	2.0
Carbon tetrachloride	ND	ppb (v/v)	2.0
Benzene	ND	ppb (v/v)	2.0
1,2-Dichloroethane	ND	ppb (v/v)	2.0
Trichloroethene	ND	ppb (v/v)	2.0
1,2-Dichloropropane	ND	ppb (v/v)	2.0
Bromodichloromethane	ND	ppb (v/v)	2.0
cis-1,3-Dichloropropene	ND	ppb (v/v)	2.0
4-Methyl-2-pentanone	ND	ppb (v/v)	4.0
Toluene	ND	ppb (v/v)	2.0
trans-1,3-Dichloropropene	ND	ppb (v/v)	2.0
1,1,2-Trichloroethane	ND	ppb (v/v)	2.0
Tetrachloroethene	ND	ppb (v/v)	2.0
2-Hexanone	ND	ppb (v/v)	4.0
Dibromochloromethane	ND	ppb (v/v)	2.0
1,2-Dibromoethane (EDB)	ND	ppb (v/v)	2.0
Chlorobenzene	ND	ppb (v/v)	2.0
Ethylbenzene	ND	ppb (v/v)	2.0
Xylenes (total)	ND	ppb (v/v)	2.0
Styrene	ND	ppb (v/v)	2.0
Bromoform	ND	ppb (v/v)	2.0
1,1,2,2-Tetrachloroethane	ND	ppb (v/v)	2.0
4-Ethyl toluene	ND	ppb (v/v)	2.0
1,3,5-Trimethylbenzene	ND	ppb (v/v)	2.0
1,2,4-Trimethylbenzene	ND	ppb (v/v)	2.0
1,3-Dichlorobenzene	ND	ppb (v/v)	2.0
1,4-Dichlorobenzene	ND	ppb (v/v)	2.0

ND = Not Detected

Quanterra
Environmental Services

METHOD BLANK REPORT
Air Toxics
Project: 109272

(cont.)

Test: TO-14-MOD-G
Matrix: AIR
QC Run: 23 DEC 94-B1

Volatile Organics by GCMS - Modified EPA TO-14

Date Analyzed: 23 DEC 94

Analyte	Result	Units	Reporting Limit
1,2-Dichlorobenzene	ND	ppb (v/v)	2.0
1,2,4-Trichlorobenzene	ND	ppb (v/v)	4.0
Hexachlorobutadiene	ND	ppb (v/v)	4.0

ND = Not Detected

GOLDEN STATE GAS
LABORATORIES, INC.

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

6925 CANOGA AVENUE ▪ CANOGA PARK, CA 91303
818 587-5550 ▪ FAX #818 587-5555

109272

DATE _____ PAGE ____ OF ____

COMPANY/ADDRESS Groundwater Technology
20000 Mariner Ave. Ste 200
Torrance CA PHONE (310) 371-1394
PROJECT NAME/LOCATON IRC El Segundo
PROJECT MNGR. Brian Dean
SAMPLERS SIGNATURE Brian Dean

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	NUMBER OF CONTAINERS	TPH.Gas/BTEX 8015/8020/602	TPH/8015 Modified Diesel ☐ FC ☐ Gasoline ☐	BTEX 602/8020	Total Petroleum Hydrocarbons EPA 418.1	Halogenated Volatiles 601/8010	Volatile Organics GC/MS 624/8240/8260	Base/Nue/Acid Organic GC/ms 625/8270	CAM Metals 6010/7000	VOLATILES (GC-MS) 1014							REMARKS
INF-1	12/21	3:20		AIR	2									✓							

RELINQUISHED BY:
Signature Brian Dean
Firm GTI
Date/Time 12/22/94 8:30

RECEIVED BY:
Signature John K Nutter
Firm QuanTerra
Date/Time 12-22-94 08:30

TURNAROUND REQUIREMENTS:
___ 24 hr ___ 48 hr ___ 5 day
✓ Standard
___ Other (Specify)
___ Provide Verbal Preliminary Results
Requested Report Date _____

REPORT REQUIREMENTS:
✓ I. Routine Report
___ II. Report (includes DUP,MS, MSD, as required, may be charged as samples)
___ III. Data Validation Report (includes All Raw Data)
___ RWQCB

INVOICE INFORMATION:
P.O. # _____
Bill to: _____

SAMPLE RECEIPT:
Shipping VIA: _____
Shipping #: _____
Condition: _____
Accepted for Analysis by: _____

RELINQUISHED BY:
Signature John K Nutter
Firm QuanTerra
Date/Time 12-22-94 10:00

RECEIVED BY:
Signature Jeff Ahl
Firm Quanterra
Date/Time 12/22/94 10:00

RELINQUISHED BY:
Signature _____
Firm _____
Date/Time _____

RECEIVED BY:
Signature _____
Firm _____
Date/Time _____

SPECIAL INSTRUCTIONS/COMMENTS:

Appendix A-1

Quanterra Environmental Services

Quanterra Incorporated
18501 East Gale Avenue #130
City of Industry, California 91748

818 965-1006 Telephone
818 965-1003 Fax

January 3, 1995

GROUNDWATER TECHNOLOGY, INC.
20000 Mariner Avenue, Ste. 200
Torrance, CA 90503
ATTN: Mr. Brian Dean

ANALYSIS NO.: 109271-0001-SA
ANALYSES: Modified CARB 422,
Modified CARB 410A
DATE SAMPLED: 12/21/94
DATE SAMPLE REC'D: 12/22/94

PROJECT: IRC EL SEGUNDO

Enclosed with this letter is the report on the chemical and physical analyses for the sample from ANALYSIS NO.: 109271-0001-SA as shown above.

The sample was received by Quanterra Environmental Services, City of Industry, intact and withh the chain-of-custody record attached.

Please note that ND means not detected at the reporting limits expressed.

The preliminary results were faxed to Mr. Brian Dean on December 29, 1994.

Paul Hey
APPROVED

1-5-95
DATE

Quanterra
Environmental Services

SAMPLE DESCRIPTION INFORMATION
for
Groundwater Technology, Inc.

Lab ID	Client ID	Matrix	Sampled Date	Sampled Time	Received Date
109271-0001-SA	EFF-1	AIR	21 DEC 94	13:50	22 DEC 94

Quanterra Environmental Services

Volatile Organics by GCMS - Modified CARB 422

Client Name: Groundwater Technology, Inc.
Client ID: EFF-1
Lab ID: 109271-0001-SA
Matrix: AIR
Authorized: 22 DEC 94

Sampled: 21 DEC 94
Prepared: NA

Received: 22 DEC 94
Analyzed: 23 DEC 94

Parameter	Result	Units	Reporting Limit	
Trichloroethene	ND	ppb (v/v)	4.4	1

Note 1 : All reporting limits elevated due to high levels of moisture and/or carbon dioxide.

ND = Not detected
NA = Not applicable

Reported By: Dave Olson

Approved By: Val Mallari

Quanterra Environmental Services

Volatile Organics by GCMS - Modified CARB 410A

Client Name: Groundwater Technology, Inc.
Client ID: EFF-1
Lab ID: 109271-0001-SA
Matrix: AIR
Authorized: 22 DEC 94

Sampled: 21 DEC 94
Prepared: NA

Received: 22 DEC 94
Analyzed: 23 DEC 94

Parameter	Result	Units	Reporting Limit
Benzene	ND	ppb (v/v)	4.4

ND = Not detected
NA = Not applicable

Reported By: Dave Olson

Approved By: Val Mallari

Quanterra Environmental Services

Volatile Organics by GCMS - EPA TO14

Client Name: Groundwater Technology, Inc.
Client ID: EFF-1
Lab ID: 109271-0001-SA
Matrix: AIR
Authorized: 22 DEC 94

Sampled: 21 DEC 94
Prepared: NA

Received: 22 DEC 94
Analyzed: 23 DEC 94

Parameter	Result	Units	Reporting Limit	
Dichlorodifluoromethane	ND	ppb (v/v)	4.4	1
Chloromethane	ND	ppb (v/v)	8.9	
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	ppb (v/v)	4.4	
Vinyl chloride	ND	ppb (v/v)	4.4	
Bromomethane	ND	ppb (v/v)	4.4	
Chloroethane	ND	ppb (v/v)	8.9	
Trichlorofluoromethane	ND	ppb (v/v)	4.4	
1,1-Dichloroethene	ND	ppb (v/v)	4.4	
Carbon disulfide	ND	ppb (v/v)	22	
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	ppb (v/v)	4.4	
Acetone	ND	ppb (v/v)	22	
Methylene chloride	ND	ppb (v/v)	4.4	
trans-1,2-Dichloroethene	ND	ppb (v/v)	4.4	
1,1-Dichloroethane	ND	ppb (v/v)	4.4	
Vinyl acetate	ND	ppb (v/v)	22	
cis-1,2-Dichloroethene	ND	ppb (v/v)	4.4	
2-Butanone	ND	ppb (v/v)	22	
Chloroform	ND	ppb (v/v)	4.4	
1,1,1-Trichloroethane	ND	ppb (v/v)	4.4	
Carbon tetrachloride	ND	ppb (v/v)	4.4	
Benzene	ND	ppb (v/v)	4.4	
1,2-Dichloroethane	ND	ppb (v/v)	4.4	
Trichloroethene	ND	ppb (v/v)	4.4	
1,2-Dichloropropane	ND	ppb (v/v)	4.4	
Bromodichloromethane	ND	ppb (v/v)	4.4	
cis-1,3-Dichloropropene	ND	ppb (v/v)	4.4	
4-Methyl-2-pentanone	ND	ppb (v/v)	8.9	
Toluene	ND	ppb (v/v)	4.4	
trans-1,3-Dichloropropene	ND	ppb (v/v)	4.4	
1,1,2-Trichloroethane	ND	ppb (v/v)	4.4	
Tetrachloroethene	ND	ppb (v/v)	4.4	
2-Hexanone	ND	ppb (v/v)	8.9	
Dibromochloromethane	ND	ppb (v/v)	4.4	
1,2-Dibromoethane (EDB)	ND	ppb (v/v)	4.4	
Chlorobenzene	ND	ppb (v/v)	4.4	
Ethylbenzene	ND	ppb (v/v)	4.4	
Xylenes (total)	ND	ppb (v/v)	4.4	
Styrene	ND	ppb (v/v)	4.4	
Bromoform	ND	ppb (v/v)	4.4	

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Dave Olson

Approved By: Val Mallari

Quanterra Environmental Services

Volatile Organics by GCMS - EPA TO14 (CONT.)

Client Name: Groundwater Technology, Inc.
Client ID: EFF-1
Lab ID: 109271-0001-SA
Matrix: AIR
Authorized: 22 DEC 94

Sampled: 21 DEC 94
Prepared: NA

Received: 22 DEC 94
Analyzed: 23 DEC 94

Parameter	Result	Units	Reporting Limit
1,1,2,2-Tetrachloroethane	ND	ppb (v/v)	4.4
4-Ethyl toluene	ND	ppb (v/v)	4.4
1,3,5-Trimethylbenzene	ND	ppb (v/v)	4.4
1,2,4-Trimethylbenzene	ND	ppb (v/v)	4.4
1,3-Dichlorobenzene	ND	ppb (v/v)	4.4
1,4-Dichlorobenzene	ND	ppb (v/v)	4.4
1,2-Dichlorobenzene	ND	ppb (v/v)	4.4
1,2,4-Trichlorobenzene	ND	ppb (v/v)	8.9
Hexachlorobutadiene	ND	ppb (v/v)	8.9

Note 1 : All reporting limits elevated due to high levels of moisture and/or carbon dioxide.

ND = Not detected
NA = Not applicable

Reported By: Dave Olson

Approved By: Val Mallari

Quanterra
Environmental
Services

QC LOT ASSIGNMENT REPORT - MS QC
Air Toxics

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK/LCS)	MS QC Run Number (SA,MS,SD,DU)
109271-0001-SA	AIR	TO-14	23 DEC 94-B1	23 DEC 94-B1	

Quanterra
Environmental Services

DUPLICATE CONTROL SAMPLE REPORT
Air Toxics
Project: 109271

Category: TO-14 Method TO-14 - Volatile Organics
Matrix: AIR
QC Lot: 23 DEC 94-B1
Concentration Units: ppb (v/v)

Date Analyzed: 23 DEC 94

Analyte	Concentration Spiked	Measured DCS1	Measured DCS2	AVG	Accuracy Average(%) DCS	Accuracy Limits	Precision (RPD) DCS	Precision Limit
Methylene chloride	48.4	48.4	47.7	48.0	99	86-116	1.5	10
1,1-Dichloroethene	48.4	50.1	49.6	49.8	103	90-115	1.0	10
Trichloroethene	36.7	36.2	36.8	36.5	99	85-114	1.6	10
Toluene	48.4	50.1	50.6	50.4	104	92-114	0.99	10
1,1,2,2-Tetrachloroethane	55.5	53.8	54.3	54.0	97	76-124	0.93	10

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quanterra
Environmental Services

METHOD BLANK REPORT
Air Toxics
Project: 109271

Test: TO-14-MOD-G — Volatile Organics by GCMS - Modified EPA TO-14
Matrix: AIR
QC Run: 23 DEC 94-B1

Date Analyzed: 23 DEC 94

Analyte	Result	Units	Reporting Limit
Dichlorodifluoromethane	ND	ppb (v/v)	2.0
Chloromethane	ND	ppb (v/v)	4.0
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	ppb (v/v)	2.0
Vinyl chloride	ND	ppb (v/v)	2.0
Bromomethane	ND	ppb (v/v)	2.0
Chloroethane	ND	ppb (v/v)	4.0
Trichlorofluoromethane	ND	ppb (v/v)	2.0
1,1-Dichloroethene	ND	ppb (v/v)	2.0
Carbon disulfide	ND	ppb (v/v)	10
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	ppb (v/v)	2.0
Acetone	ND	ppb (v/v)	10
Methylene chloride	ND	ppb (v/v)	2.0
trans-1,2-Dichloroethene	ND	ppb (v/v)	2.0
1,1-Dichloroethane	ND	ppb (v/v)	2.0
Vinyl acetate	ND	ppb (v/v)	10
cis-1,2-Dichloroethene	ND	ppb (v/v)	2.0
2-Butanone	ND	ppb (v/v)	10
Chloroform	ND	ppb (v/v)	2.0
1,1,1-Trichloroethane	ND	ppb (v/v)	2.0
Carbon tetrachloride	ND	ppb (v/v)	2.0
Benzene	ND	ppb (v/v)	2.0
1,2-Dichloroethane	ND	ppb (v/v)	2.0
Trichloroethene	ND	ppb (v/v)	2.0
1,2-Dichloropropane	ND	ppb (v/v)	2.0
Bromodichloromethane	ND	ppb (v/v)	2.0
cis-1,3-Dichloropropene	ND	ppb (v/v)	2.0
4-Methyl-2-pentanone	ND	ppb (v/v)	4.0
Toluene	ND	ppb (v/v)	2.0
trans-1,3-Dichloropropene	ND	ppb (v/v)	2.0
1,1,2-Trichloroethane	ND	ppb (v/v)	2.0
Tetrachloroethene	ND	ppb (v/v)	2.0
2-Hexanone	ND	ppb (v/v)	4.0
Dibromochloromethane	ND	ppb (v/v)	2.0
1,2-Dibromoethane (EDB)	ND	ppb (v/v)	2.0
Chlorobenzene	ND	ppb (v/v)	2.0
Ethylbenzene	ND	ppb (v/v)	2.0
Xylenes (total)	ND	ppb (v/v)	2.0
Styrene	ND	ppb (v/v)	2.0
Bromoform	ND	ppb (v/v)	2.0
1,1,2,2-Tetrachloroethane	ND	ppb (v/v)	2.0
4-Ethyl toluene	ND	ppb (v/v)	2.0
1,3,5-Trimethylbenzene	ND	ppb (v/v)	2.0
1,2,4-Trimethylbenzene	ND	ppb (v/v)	2.0
1,3-Dichlorobenzene	ND	ppb (v/v)	2.0
1,4-Dichlorobenzene	ND	ppb (v/v)	2.0

ND = Not Detected

Quanterra
Environmental Services

METHOD BLANK REPORT
Air Toxics
Project: 109271

(cont.)

Test: TO-14-MOD-G
Matrix: AIR
QC Run: 23 DEC 94-B1

Volatile Organics by GCMS - Modified EPA TO-14

Date Analyzed: 23 DEC 94

Analyte	Result	Units	Reporting Limit
1,2-Dichlorobenzene	ND	ppb (v/v)	2.0
1,2,4-Trichlorobenzene	ND	ppb (v/v)	4.0
Hexachlorobutadiene	ND	ppb (v/v)	4.0

ND = Not Detected

GOLDEN STATE/CAS
LABORATORIES, INC.

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

6925 CANOGA AVENUE ▪ CANOGA PARK, CA 91303
818 587-5550 ▪ FAX #818 587-5555

109271

DATE _____ PAGE ____ OF ____

COMPANY/ADDRESS GROUNDWATER TECHNOLOGY
20000 MARINER AVE. STE 200
TORRANCE CA PHONE (310) 371-1394
PROJECT NAME/LOCATON IRC EL SEGUNDO

PROJECT MNGR. BRIAN DEAN
SAMPLERS SIGNATURE Brian Dean

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	NUMBER OF CONTAINERS	TPH Gas/BTEX 8015/8020/602	TPH/8015 Modified Diesel □ FC □ Gasoline □	BTEX 602/8020	Total Petroleum Hydrocarbons EPA 418.1	Halogenated Volatiles 601/8010	Volatile Organics GC/MS 624/8240/8260	Base/Neu/Acid Organic GC/ms 625/8270	CAM Metals 6010/7000	CARB 410A (DRY)	CARB 422 (TCLP)					REMARKS
EFF-1	12/21	1:50		FLR	2									✓	✓					

RELINQUISHED BY:
Signature
GTI
Firm
12/22/94 8:30
Date/Time

RECEIVED BY:
Signature
Quanterra
Firm
12-22-94 08:30
Date/Time

TURNAROUND REQUIREMENTS:
___ 24 hr ___ 48 hr ___ 5 day
✓ Standard
___ Other (Specify)
___ Provide Verbal Preliminary Results
Requested Report Date _____

REPORT REQUIREMENTS:
___ I. Routine Report
✓ II. Report (includes DUP, MS, MSD, as required, may be charged as samples) ADD'L
___ III. Data Validation Report (includes All Raw Data)
___ RWQCB

INVOICE INFORMATION:
P.O. #_____
Bill to:_____

SAMPLE RECEIPT:
Shipping VIA:_____
Shipping #:_____
Condition:_____
Accepted for Analysis by:_____

RELINQUISHED BY:
Signature
Quanterra
Firm
12-22-94 10:00
Date/Time

RECEIVED BY:
Signature
Quanterra
Firm
12/22/94 10:00
Date/Time

RELINQUISHED BY:
Signature
Firm
Date/Time

RECEIVED BY:
Signature
Firm
Date/Time

SPECIAL INSTRUCTIONS/COMMENTS:

Quanterra Environmental Services

Quanterra Incorporated
18501 East Gale Avenue #130
City of Industry, California 91748

818 965-1006 Telephone
818 965-1003 Fax

January 3, 1996

GROUNDWATER TECHNOLOGY, INC.
20000 Mariner Ave., Ste. 200
Torrance, CA 90503
ATTN: Mr. Brian Dean

ANALYSIS NO.: 116510-0001-SA
ANALYSES: Volatile Organics by GCMS - Modified EPA TO14
DATE SAMPLED: 12/20/95
DATE SAMPLE REC'D: 12/20/95

PROJECT: IRC EL SEGUNDO

Enclosed with this letter is the report on the chemical and physical analyses for the sample from ANALYSIS NO.: 116510-0001-SA as shown above.

The sample was received by Quanterra Environmental Services, City of Industry, intact and with the chain-of-custody record attached.

Please note that ND means not detected at the reporting limits expressed.

EPA Method TO-14 describes the use of SUMMA canisters for sampling and analysis. Use of Tedlar sample bags constitutes a modification to the method and is noted in the analysis description above.

Val Mallari
Laboratory Manager

1/3/96
Date
Approved

Quanterra
Environmental
Services

SAMPLE DESCRIPTION INFORMATION
for
Groundwater Technology, Inc.

Lab ID	Client ID	Matrix	Sampled Date	Sampled Time	Received Date
116510-0001-SA	INF-2	AIR	20 DEC 95	11:45	20 DEC 95

Chain of Custody Record

Quanterra Environmental Services

QUA-4124-1

Client	Project Manager	Date	Chain Of Custody Number
GROUNDWATER TECHNOLOGY	BRIAN DEAN	12-20-95	47615

Address	Telephone Number (Area Code)/Fax Number	Lab Number	Page
20000 MARINER AVE. SUITE 200	310 371-1394 / 310 371-4782	116510 116508	1 of 1

City	State	Zip Code	Site Contact	Lab Contact
TORRANCE	CA	90503	-	

Project Name	Carrier/Waybill Number
IRC EL SEGUNDO	

Contract/Purchase Order/Quote No.: N0559

Analysis (Attach list if more space is needed): VOLATILE ORGANICS TO-14 — 12/21/95

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Aqueous	Sed.	Soil	AIR	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/ NaOH	TO-14
INF-2	12-20-95	11:45				✓	✓						✓

Special Instructions/ Conditions of Receipt

Possible Hazard Identification: ☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☑ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 3 months)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☑ Other STANDARD

QC Requirements (Specify):

	Relinquished By	Date	Time	Received By	Date	Time
1.	Brian Dean	12-20-95	14:07	Robert A. Fuller	12/20/95	14:07
2.	Robert A. Fuller	12/20/95	15:10	Jon E. Reil	12/20/95	15:10
3.						

Comments: FAX PRELIMINARY RESULTS ASAP.

DISTRIBUTION: WHITE - Stays with the Sample; CANARY - Returned to Client with Report; PINK - Field Copy

Appendix A-1

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring VB-1

Project IRC EL SEGUNDO Owner INTERNATIONAL RECTIFIER CORP.
Location LOADING DOCK Proj. No. 042501381
Surface Elev. NA ft. Total Hole Depth 80 ft. Diameter 8 in.
Top of Casing NA ft. Water Level Initial NA ft. Static -- ft.
Screen: Dia NA in. Length NA ft. Type/Size NA in.
Casing: Dia NA in. Length NA ft. Type NA
Fill Material Bentonite Rig/Core CME 75 2" dia. split spoon sampler
Drill Co. A&R DRILLING Method Hollow Stem Auger
Driller Mark Smith Log By Grant Williams Date 2/27/96 Permit # NA
Checked By Ken Ragland License No. RG No. 5388

See Site Map For Boring Location

COMMENTS:

Depth (ft.)	PID (ppm)	Sample ID	Blow Count / % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0					Asp	4" Asphalt Drilled.
2						
4						
6	4	VB-1 -5	8 10 11			Poorly Graded SAND: Light brown, 95% fine sand, 5% Silt, moderately dense to dense with depth, moist, no odor.
8						
10	0	VB-1 -10	9 11 15			Same as above, no odor.
12					Sp	
14						
16	0	VB-1 -15	17 22 25			Same as above, no odor.
18						
20	0	VB-1 -20	12 20 33			Same as above, moderate odor (like burned lubricating oil).
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring **VB-1**

Project *IRC EL SEGUNDO* Owner *INTERNATIONAL RECTIFIER CORP.*
Location *LOADING DOCK* Proj. No. *04250138I*

Depth (ft.)	PID (ppm)	Sample ID	Blow Count / % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
24						
26	0	VB-1 -25	13 20 25			Same as above, moderate odor.
28						
30	0	VB-1 -30	14 28 33			Same as above, moderate odor.
32						
34						
36	0	VB-1 -35	16 29 40			Same as above, slight odor.
38						
40	0	VB-1 -40	20 40 50 for 5"		Sp	Same as above, slight odor.
42						
44						
46	0	VB-1 -45	26 70 for 5"			Same as above, no odor.
48						
50	0	VB-1 -50	33 36 45			Same as above, no odor.
52						
54						
56	0	VB-1 -55	19 36 39			Same as above, no odor.

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring **VB-1**

Project *IRC EL SEGUNDO* Owner *INTERNATIONAL RECTIFIER CORP.*

Location *LOADING DOCK* Proj. No. *042501381*

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
56						
58						
60	0	VB-1 -60	36 50 for 5"			Same as above, no odor.
62						
64						
66	0	VB-1 -65	26 49 50 for 4"			Same as above, no odor.
68					Sp	
70	0	VB-1 -70	36 50 for 4"			Same as above, no odor.
72						
74						
76	0	VB-1 -75	40 50 for 3"			Same as above, no odor.
78						
80	0	VB-1 -80	36 50 for 5"			Same as above, no odor.
82						Drilled to 80 feet. Sampled to 81.5 feet. No groundwater encountered. Boring backfilled with bentonite/cement grout and topped with readymix concrete. Soil cuttings placed in labeled 55-gallon drums, sealed and left temporarily on premises pending disposal. All percentages are approximate.
84						
86						
88						

NATIONAL ENVIRONMENTAL TESTING, INC.

Burbank Division
700 South Flower Street
Burbank, CA 91502
Tel: (213) 849-6591
Fax: (818) 567-6477

DOHS Certificate Number: 1192
LACSD Lab I.D. Number: 10158

03/05/1996

Brian Dean
Groundwater Technology
20000/200 Mariner Drive
Torrance, CA 90503

Client Ref: IRC/El Segundo 04250881-78
Date Received: 02/28/1996

Sample analysis for the project referred to above has been completed and results are located on attached pages.

Should you have questions regarding procedures or results, please feel welcome to contact our Client Services Representatives or the Laboratory Director.

Rick Schrynemeeckers
Division Manager

KB:rm
Attachments:
Analytical Reports
Chain of Custody Document

Client Net Acct No: 13931
NET Job No: 96.00352

Client Name: Groundwater Technology
Client Ref.: IRC/El Segundo 04250881-78
Date Taken: 02/27/1996
NET Job No.: 96.00352
Date Reported: 03/05/1996
Sample ID : VB-1-10
Lab No. : 90965
Sample Matrix: SOIL

ANALYTES/METHOD	METHOD	RESULTS/FLAGS	UNITS	R.L
METHOD 8240(GCMS,Solid)				
Date Analyzed		03-01-96		
Dilution Factor	8240	1		
Acetone	8240	ND	ug/Kg	50
Benzene	8240	ND	ug/Kg	5
Bromodichloromethane	8240	ND	ug/Kg	5
Bromoform	8240	ND	ug/Kg	5
Bromomethane	8240	ND	ug/Kg	5
2-Butanone	8240	ND	ug/Kg	50
Carbon disulfide	8240	ND	ug/Kg	5
Carbon tetrachloride	8240	ND	ug/Kg	5
Chlorobenzene	8240	ND	ug/Kg	5
Chloroethane	8240	ND	ug/Kg	5
2-Chloroethyl vinyl ether	8240	ND	ug/Kg	10
Chloroform	8240	ND	ug/Kg	5
Chloromethane	8240	ND	ug/Kg	5
Dibromochloromethane	8240	ND	ug/Kg	5
1,2-Dichlorobenzene	8240	ND	ug/Kg	5
1,3-Dichlorobenzene	8240	ND	ug/Kg	5
1,4-Dichlorobenzene	8240	ND	ug/Kg	5
1,1-Dichloroethane	8240	ND	ug/Kg	5
1,2-Dichloroethane	8240	ND	ug/Kg	5
1,1-Dichloroethene	8240	ND	ug/Kg	5
cis-1,2-Dichloroethene	8240	ND	ug/Kg	5
trans-1,2-Dichloroethene	8240	ND	ug/Kg	5
1,2-Dichloropropane	8240	ND	ug/Kg	5
cis-1,3-Dichloropropene	8240	ND	ug/Kg	5
trans-1,3-Dichloropropene	8240	ND	ug/Kg	5
Ethyl benzene	8240	ND	ug/Kg	5
2-Hexanone	8240	ND	ug/Kg	50
Methylene chloride	8240	11	ug/Kg	10
4-Methyl-2-pentanone	8240	ND	ug/Kg	50
Methyl-tert-butyl-ether	8240	ND	ug/Kg	10
Styrene	8240	ND	ug/Kg	5
1,1,2,2-Tetrachloroethane	8240	ND	ug/Kg	5
Tetrachloroethene	8240	20	ug/Kg	5
Toluene	8240	ND	ug/Kg	5
1,1,1-Trichloroethane	8240	ND	ug/Kg	5
1,1,2-Trichloroethane	8240	ND	ug/Kg	5
Trichloroethene	8240	ND	ug/Kg	5
Trichlorofluoromethane	8240	ND	ug/Kg	5
Vinyl acetate	8240	ND	ug/Kg	10
Vinyl chloride	8240	ND	ug/Kg	5
Xylenes (total)	8240	ND	ug/Kg	5
SURROGATE RESULTS		--		
Toluene-d8	8240	97	% Rec.	
Bromofluorobenzene	8240	87	% Rec.	
1,2-Dichloroethane-d4	8240	75	% Rec.	

ND: Not Detected at the Reporting Limit (RL).

Client Name: Groundwater Technology
Client Ref.: IRC/El Segundo 04250881-78
Date Taken: 02/27/1996
NET Job No.: 96.00352
Date Reported: 03/05/1996
Sample ID : VB-1-15
Lab No. : 90966
Sample Matrix: SOIL

ANALYTES/METHOD	METHOD	RESULTS/FLAGS	UNITS	R.L
METHOD 8240(GCMS,Solid)				
Date Analyzed		03-01-96		
Dilution Factor	8240	1		
Acetone	8240	ND	ug/Kg	50
Benzene	8240	ND	ug/Kg	5
Bromodichloromethane	8240	ND	ug/Kg	5
Bromoform	8240	ND	ug/Kg	5
Bromomethane	8240	ND	ug/Kg	5
2-Butanone	8240	ND	ug/Kg	50
Carbon disulfide	8240	ND	ug/Kg	5
Carbon tetrachloride	8240	ND	ug/Kg	5
Chlorobenzene	8240	ND	ug/Kg	5
Chloroethane	8240	ND	ug/Kg	5
2-Chloroethyl vinyl ether	8240	ND	ug/Kg	10
Chloroform	8240	ND	ug/Kg	5
Chloromethane	8240	ND	ug/Kg	5
Dibromochloromethane	8240	ND	ug/Kg	5
1,2-Dichlorobenzene	8240	ND	ug/Kg	5
1,3-Dichlorobenzene	8240	ND	ug/Kg	5
1,4-Dichlorobenzene	8240	ND	ug/Kg	5
1,1-Dichloroethane	8240	ND	ug/Kg	5
1,2-Dichloroethane	8240	ND	ug/Kg	5
1,1-Dichloroethene	8240	ND	ug/Kg	5
cis-1,2-Dichloroethene	8240	ND	ug/Kg	5
trans-1,2-Dichloroethene	8240	ND	ug/Kg	5
1,2-Dichloropropane	8240	ND	ug/Kg	5
cis-1,3-Dichloropropene	8240	ND	ug/Kg	5
trans-1,3-Dichloropropene	8240	ND	ug/Kg	5
Ethyl benzene	8240	ND	ug/Kg	5
2-Hexanone	8240	ND	ug/Kg	50
Methylene chloride	8240	ND	ug/Kg	10
4-Methyl-2-pentanone	8240	ND	ug/Kg	50
Methyl-tert-butyl-ether	8240	ND	ug/Kg	10
Styrene	8240	ND	ug/Kg	5
1,1,2,2-Tetrachloroethane	8240	ND	ug/Kg	5
Tetrachloroethene	8240	18	ug/Kg	5
Toluene	8240	ND	ug/Kg	5
1,1,1-Trichloroethane	8240	ND	ug/Kg	5
1,1,2-Trichloroethane	8240	ND	ug/Kg	5
Trichloroethene	8240	ND	ug/Kg	5
Trichlorofluoromethane	8240	ND	ug/Kg	5
Vinyl acetate	8240	ND	ug/Kg	10
Vinyl chloride	8240	ND	ug/Kg	5
Xylenes (total)	8240	15	ug/Kg	5
SURROGATE RESULTS		--		
Toluene-d8	8240	98	% Rec.	
Bromofluorobenzene	8240	89	% Rec.	
1,2-Dichloroethane-d4	8240	86	% Rec.	

ND: Not Detected at the Reporting Limit (RL).

Client Name: Groundwater Technology
Client Ref.: IRC/El Segundo 04250881-78
Date Taken: 02/27/1996
NET Job No.: 96.00352
Date Reported: 03/05/1996
Sample ID : VB-1-20
Lab No. : 90967
Sample Matrix: SOIL

ANALYTES/METHOD	METHOD	RESULTS/FLAGS	UNITS	R.L
METHOD 8240(GCMS,Solid)				
Date Analyzed		03-01-96		
Dilution Factor	8240	1		
Acetone	8240	ND	ug/Kg	50
Benzene	8240	ND	ug/Kg	5
Bromodichloromethane	8240	ND	ug/Kg	5
Bromoform	8240	ND	ug/Kg	5
Bromomethane	8240	ND	ug/Kg	5
2-Butanone	8240	ND	ug/Kg	50
Carbon disulfide	8240	ND	ug/Kg	5
Carbon tetrachloride	8240	ND	ug/Kg	5
Chlorobenzene	8240	ND	ug/Kg	5
Chloroethane	8240	ND	ug/Kg	5
2-Chloroethyl vinyl ether	8240	ND	ug/Kg	10
Chloroform	8240	ND	ug/Kg	5
Chloromethane	8240	ND	ug/Kg	5
Dibromochloromethane	8240	ND	ug/Kg	5
1,2-Dichlorobenzene	8240	ND	ug/Kg	5
1,3-Dichlorobenzene	8240	ND	ug/Kg	5
1,4-Dichlorobenzene	8240	ND	ug/Kg	5
1,1-Dichloroethane	8240	ND	ug/Kg	5
1,2-Dichloroethane	8240	ND	ug/Kg	5
1,1-Dichloroethene	8240	ND	ug/Kg	5
cis-1,2-Dichloroethene	8240	ND	ug/Kg	5
trans-1,2-Dichloroethene	8240	ND	ug/Kg	5
1,2-Dichloropropane	8240	ND	ug/Kg	5
cis-1,3-Dichloropropene	8240	ND	ug/Kg	5
trans-1,3-Dichloropropene	8240	ND	ug/Kg	5
Ethyl benzene	8240	ND	ug/Kg	5
2-Hexanone	8240	ND	ug/Kg	50
Methylene chloride	8240	10	ug/Kg	10
4-Methyl-2-pentanone	8240	ND	ug/Kg	50
Methyl-tert-butyl-ether	8240	ND	ug/Kg	10
Styrene	8240	ND	ug/Kg	5
1,1,2,2-Tetrachloroethane	8240	ND	ug/Kg	5
Tetrachloroethene	8240	ND	ug/Kg	5
Toluene	8240	ND	ug/Kg	5
1,1,1-Trichloroethane	8240	ND	ug/Kg	5
1,1,2-Trichloroethane	8240	ND	ug/Kg	5
Trichloroethene	8240	ND	ug/Kg	5
Trichlorofluoromethane	8240	ND	ug/Kg	5
Vinyl acetate	8240	ND	ug/Kg	10
Vinyl chloride	8240	ND	ug/Kg	5
Xylenes (total)	8240	ND	ug/Kg	5
SURROGATE RESULTS		--		
Toluene-d8	8240	96	% Rec.	
Bromofluorobenzene	8240	89	% Rec.	
1,2-Dichloroethane-d4	8240	79	% Rec.	

ND: Not Detected at the Reporting Limit (RL).

Client Name: Groundwater Technology
Client Ref.: IRC/El Segundo 04250881-78
Date Taken: 02/27/1996
NET Job No.: 96.00352
Date Reported: 03/05/1996
Sample ID : VB-1-25
Lab No. : 90968
Sample Matrix: SOIL

ANALYTES/METHOD	METHOD	RESULTS/FLAGS		UNITS	R.L
METHOD 8240(GCMS,Solid)					
Date Analyzed		03-04-96			
Dilution Factor	8240	1			
Acetone	8240	ND		ug/Kg	50
Benzene	8240	ND		ug/Kg	5
Bromodichloromethane	8240	ND		ug/Kg	5
Bromoform	8240	ND		ug/Kg	5
Bromomethane	8240	ND		ug/Kg	5
2-Butanone	8240	ND		ug/Kg	50
Carbon disulfide	8240	ND		ug/Kg	5
Carbon tetrachloride	8240	ND		ug/Kg	5
Chlorobenzene	8240	ND		ug/Kg	5
Chloroethane	8240	ND		ug/Kg	5
2-Chloroethyl vinyl ether	8240	ND		ug/Kg	10
Chloroform	8240	ND		ug/Kg	5
Chloromethane	8240	ND		ug/Kg	5
Dibromochloromethane	8240	ND		ug/Kg	5
1,2-Dichlorobenzene	8240	ND		ug/Kg	5
1,3-Dichlorobenzene	8240	ND		ug/Kg	5
1,4-Dichlorobenzene	8240	ND		ug/Kg	5
1,1-Dichloroethane	8240	ND		ug/Kg	5
1,2-Dichloroethane	8240	ND		ug/Kg	5
1,1-Dichloroethene	8240	ND		ug/Kg	5
cis-1,2-Dichloroethene	8240	ND		ug/Kg	5
trans-1,2-Dichloroethene	8240	ND		ug/Kg	5
1,2-Dichloropropane	8240	ND		ug/Kg	5
cis-1,3-Dichloropropene	8240	ND		ug/Kg	5
trans-1,3-Dichloropropene	8240	ND		ug/Kg	5
Ethyl benzene	8240	ND		ug/Kg	5
2-Hexanone	8240	ND		ug/Kg	50
Methylene chloride	8240	ND		ug/Kg	10
4-Methyl-2-pentanone	8240	ND		ug/Kg	50
Methyl-tert-butyl-ether	8240	ND		ug/Kg	10
Styrene	8240	ND		ug/Kg	5
1,1,2,2-Tetrachloroethane	8240	ND		ug/Kg	5
Tetrachloroethene	8240	ND		ug/Kg	5
Toluene	8240	ND		ug/Kg	5
1,1,1-Trichloroethane	8240	ND		ug/Kg	5
1,1,2-Trichloroethane	8240	ND		ug/Kg	5
Trichloroethene	8240	ND		ug/Kg	5
Trichlorofluoromethane	8240	ND		ug/Kg	5
Vinyl acetate	8240	ND		ug/Kg	10
Vinyl chloride	8240	ND		ug/Kg	5
Xylenes (total)	8240	ND		ug/Kg	5
SURROGATE RESULTS		--			
Toluene-d8	8240	84		% Rec.	
Bromofluorobenzene	8240	60	a	% Rec.	
1,2-Dichloroethane-d4	8240	49	a	% Rec.	

ND: Not Detected at the Reporting Limit (RL).

a: Low surrogate recovery due to sample matrix interference

Client Name: Groundwater Technology
Client Ref.: IRC/El Segundo 04250881-78
Date Taken: 02/27/1996
NET Job No.: 96.00352
Date Reported: 03/05/1996
Sample ID : VB-1-30
Lab No. : 90969
Sample Matrix: SOIL

ANALYTES/METHOD	METHOD	RESULTS/FLAGS		UNITS	R.L
METHOD 8240(GCMS,Solid)					
Date Analyzed		03-04-96			
Dilution Factor	8240	5	f		
Acetone	8240	ND		ug/Kg	250
Benzene	8240	ND		ug/Kg	25
Bromodichloromethane	8240	ND		ug/Kg	25
Bromoform	8240	ND		ug/Kg	25
Bromomethane	8240	ND		ug/Kg	25
2-Butanone	8240	ND		ug/Kg	250
Carbon disulfide	8240	ND		ug/Kg	25
Carbon tetrachloride	8240	ND		ug/Kg	25
Chlorobenzene	8240	ND		ug/Kg	25
Chloroethane	8240	ND		ug/Kg	25
2-Chloroethyl vinyl ether	8240	ND		ug/Kg	50
Chloroform	8240	ND		ug/Kg	25
Chloromethane	8240	ND		ug/Kg	25
Dibromochloromethane	8240	ND		ug/Kg	25
1,2-Dichlorobenzene	8240	ND		ug/Kg	25
1,3-Dichlorobenzene	8240	ND		ug/Kg	25
1,4-Dichlorobenzene	8240	ND		ug/Kg	25
1,1-Dichloroethane	8240	ND		ug/Kg	25
1,2-Dichloroethane	8240	ND		ug/Kg	25
1,1-Dichloroethene	8240	ND		ug/Kg	25
cis-1,2-Dichloroethene	8240	ND		ug/Kg	25
trans-1,2-Dichloroethene	8240	ND		ug/Kg	25
1,2-Dichloropropane	8240	ND		ug/Kg	25
cis-1,3-Dichloropropene	8240	ND		ug/Kg	25
trans-1,3-Dichloropropene	8240	ND		ug/Kg	25
Ethyl benzene	8240	ND		ug/Kg	25
2-Hexanone	8240	ND		ug/Kg	250
Methylene chloride	8240	50		ug/Kg	50
4-Methyl-2-pentanone	8240	ND		ug/Kg	250
Methyl-tert-butyl-ether	8240	ND		ug/Kg	50
Styrene	8240	ND		ug/Kg	25
1,1,2,2-Tetrachloroethane	8240	ND		ug/Kg	25
Tetrachloroethene	8240	ND		ug/Kg	25
Toluene	8240	ND		ug/Kg	25
1,1,1-Trichloroethane	8240	ND		ug/Kg	25
1,1,2-Trichloroethane	8240	ND		ug/Kg	25
Trichloroethene	8240	ND		ug/Kg	25
Trichlorofluoromethane	8240	ND		ug/Kg	25
Vinyl acetate	8240	ND		ug/Kg	50
Vinyl chloride	8240	ND		ug/Kg	25
Xylenes (total)	8240	ND		ug/Kg	25
SURROGATE RESULTS		--			
Toluene-d8	8240	86		% Rec.	
Bromofluorobenzene	8240	59	a	% Rec.	
1,2-Dichloroethane-d4	8240	41	a	% Rec.	

ND: Not Detected at the Reporting Limit (RL).

a: Low surrogate recovery due to sample matrix interference
f: Raised reporting limit due to sample matrix.

Client Name: Groundwater Technology
Client Ref.: IRC/El Segundo 04250881-78
Date Taken: 02/27/1996
NET Job No.: 96.00352
Date Reported: 03/05/1996
Sample ID : VB-1-40
Lab No. : 90970
Sample Matrix: SOIL

ANALYTES/METHOD	METHOD	RESULTS/FLAGS	UNITS	R.L
METHOD 8240(GCMS,Solid)				
Date Analyzed		03-01-96		
Dilution Factor	8240	1		
Acetone	8240	ND	ug/Kg	50
Benzene	8240	ND	ug/Kg	5
Bromodichloromethane	8240	ND	ug/Kg	5
Bromoform	8240	ND	ug/Kg	5
Bromomethane	8240	ND	ug/Kg	5
2-Butanone	8240	ND	ug/Kg	5
Carbon disulfide	8240	ND	ug/Kg	50
Carbon tetrachloride	8240	ND	ug/Kg	5
Chlorobenzene	8240	ND	ug/Kg	5
Chloroethane	8240	ND	ug/Kg	5
2-Chloroethyl vinyl ether	8240	ND	ug/Kg	5
Chloroform	8240	ND	ug/Kg	10
Chloromethane	8240	ND	ug/Kg	5
Dibromochloromethane	8240	ND	ug/Kg	5
1,2-Dichlorobenzene	8240	ND	ug/Kg	5
1,3-Dichlorobenzene	8240	ND	ug/Kg	5
1,4-Dichlorobenzene	8240	ND	ug/Kg	5
1,1-Dichloroethane	8240	ND	ug/Kg	5
1,2-Dichloroethane	8240	ND	ug/Kg	5
1,1-Dichloroethene	8240	ND	ug/Kg	5
cis-1,2-Dichloroethene	8240	ND	ug/Kg	5
trans-1,2-Dichloroethene	8240	ND	ug/Kg	5
1,2-Dichloropropane	8240	ND	ug/Kg	5
cis-1,3-Dichloropropene	8240	ND	ug/Kg	5
trans-1,3-Dichloropropene	8240	ND	ug/Kg	5
Ethyl benzene	8240	ND	ug/Kg	5
2-Hexanone	8240	ND	ug/Kg	50
Methylene chloride	8240	10	ug/Kg	10
4-Methyl-2-pentanone	8240	ND	ug/Kg	50
Methyl-tert-butyl-ether	8240	ND	ug/Kg	10
Styrene	8240	ND	ug/Kg	5
1,1,2,2-Tetrachloroethane	8240	ND	ug/Kg	5
Tetrachloroethene	8240	ND	ug/Kg	5
Toluene	8240	ND	ug/Kg	5
1,1,1-Trichloroethane	8240	ND	ug/Kg	5
1,1,2-Trichloroethane	8240	ND	ug/Kg	5
Trichloroethene	8240	ND	ug/Kg	5
Trichlorofluoromethane	8240	ND	ug/Kg	5
Vinyl acetate	8240	ND	ug/Kg	10
Vinyl chloride	8240	ND	ug/Kg	5
Xylenes (total)	8240	ND	ug/Kg	5
SURROGATE RESULTS		--		
Toluene-d8	8240	98	% Rec.	
Bromofluorobenzene	8240	90	% Rec.	
1,2-Dichloroethane-d4	8240	79	% Rec.	

ND: Not Detected at the Reporting Limit (RL).

Client Name: Groundwater Technology
Client Ref.: IRC/El Segundo 04250881-78
Date Taken: 02/27/1996
NET Job No.: 96.00352
Date Reported: 03/05/1996
Sample ID : VB-1-50
Lab No. : 90971
Sample Matrix: SOIL

ANALYTES/METHOD	METHOD	RESULTS/FLAGS		UNITS	R.L
METHOD 8240(GCMS,Solid)					
Date Analyzed		03-04-96			
Dilution Factor	8240	1			
Acetone	8240	ND		ug/Kg	50
Benzene	8240	ND		ug/Kg	5
Bromodichloromethane	8240	ND		ug/Kg	5
Bromoform	8240	ND		ug/Kg	5
Bromomethane	8240	ND		ug/Kg	5
2-Butanone	8240	ND		ug/Kg	50
Carbon disulfide	8240	ND		ug/Kg	5
Carbon tetrachloride	8240	ND		ug/Kg	5
Chlorobenzene	8240	ND		ug/Kg	5
Chloroethane	8240	ND		ug/Kg	5
2-Chloroethyl vinyl ether	8240	ND		ug/Kg	10
Chloroform	8240	ND		ug/Kg	5
Chloromethane	8240	ND		ug/Kg	5
Dibromochloromethane	8240	ND		ug/Kg	5
1,2-Dichlorobenzene	8240	ND		ug/Kg	5
1,3-Dichlorobenzene	8240	ND		ug/Kg	5
1,4-Dichlorobenzene	8240	ND		ug/Kg	5
1,1-Dichloroethane	8240	ND		ug/Kg	5
1,2-Dichloroethane	8240	ND		ug/Kg	5
1,1-Dichloroethene	8240	ND		ug/Kg	5
cis-1,2-Dichloroethene	8240	ND		ug/Kg	5
trans-1,2-Dichloroethene	8240	ND		ug/Kg	5
1,2-Dichloropropane	8240	ND		ug/Kg	5
cis-1,3-Dichloropropene	8240	ND		ug/Kg	5
trans-1,3-Dichloropropene	8240	ND		ug/Kg	5
Ethyl benzene	8240	ND		ug/Kg	5
2-Hexanone	8240	ND		ug/Kg	50
Methylene chloride	8240	ND		ug/Kg	10
4-Methyl-2-pentanone	8240	ND		ug/Kg	50
Methyl-tert-butyl-ether	8240	ND		ug/Kg	10
Styrene	8240	ND		ug/Kg	5
1,1,2,2-Tetrachloroethane	8240	ND		ug/Kg	5
Tetrachloroethene	8240	ND		ug/Kg	5
Toluene	8240	ND		ug/Kg	5
1,1,1-Trichloroethane	8240	ND		ug/Kg	5
1,1,2-Trichloroethane	8240	ND		ug/Kg	5
Trichloroethene	8240	ND		ug/Kg	5
Trichlorofluoromethane	8240	ND		ug/Kg	5
Vinyl acetate	8240	ND		ug/Kg	10
Vinyl chloride	8240	ND		ug/Kg	5
Xylenes (total)	8240	ND		ug/Kg	5
SURROGATE RESULTS		--			
Toluene-d8	8240	87		% Rec.	
Bromofluorobenzene	8240	66	a	% Rec.	
1,2-Dichloroethane-d4	8240	45	a	% Rec.	

ND: Not Detected at the Reporting Limit (RL).

a: Low surrogate recovery due to sample matrix interference

Client Name: Groundwater Technology
Client Ref.: IRC/El Segundo 04250881-78
Date Taken: 02/27/1996
NET Job No.: 96.00352
Date Reported: 03/05/1996
Sample ID : VB-1-60
Lab No. : 90972
Sample Matrix: SOIL

ANALYTES/METHOD	METHOD	RESULTS/FLAGS		UNITS	R.L
METHOD 8240(GCMS,Solid)					
Date Analyzed		03-04-96			
Dilution Factor	8240	1			
Acetone	8240	ND		ug/Kg	50
Benzene	8240	ND		ug/Kg	5
Bromodichloromethane	8240	ND		ug/Kg	5
Bromoform	8240	ND		ug/Kg	5
Bromomethane	8240	ND		ug/Kg	5
2-Butanone	8240	ND		ug/Kg	5
Carbon disulfide	8240	ND		ug/Kg	50
Carbon tetrachloride	8240	ND		ug/Kg	5
Chlorobenzene	8240	ND		ug/Kg	5
Chloroethane	8240	ND		ug/Kg	5
2-Chloroethyl vinyl ether	8240	ND		ug/Kg	5
Chloroform	8240	ND		ug/Kg	10
Chloromethane	8240	ND		ug/Kg	5
Dibromochloromethane	8240	ND		ug/Kg	5
1,2-Dichlorobenzene	8240	ND		ug/Kg	5
1,3-Dichlorobenzene	8240	ND		ug/Kg	5
1,4-Dichlorobenzene	8240	ND		ug/Kg	5
1,1-Dichloroethane	8240	ND		ug/Kg	5
1,2-Dichloroethane	8240	ND		ug/Kg	5
1,1-Dichloroethene	8240	ND		ug/Kg	5
cis-1,2-Dichloroethene	8240	ND		ug/Kg	5
trans-1,2-Dichloroethene	8240	ND		ug/Kg	5
1,2-Dichloropropane	8240	ND		ug/Kg	5
cis-1,3-Dichloropropene	8240	ND		ug/Kg	5
trans-1,3-Dichloropropene	8240	ND		ug/Kg	5
Ethyl benzene	8240	ND		ug/Kg	5
2-Hexanone	8240	ND		ug/Kg	50
Methylene chloride	8240	ND		ug/Kg	10
4-Methyl-2-pentanone	8240	ND		ug/Kg	50
Methyl-tert-butyl-ether	8240	ND		ug/Kg	10
Styrene	8240	ND		ug/Kg	5
1,1,2,2-Tetrachloroethane	8240	ND		ug/Kg	5
Tetrachloroethene	8240	ND		ug/Kg	5
Toluene	8240	ND		ug/Kg	5
1,1,1-Trichloroethane	8240	ND		ug/Kg	5
1,1,2-Trichloroethane	8240	ND		ug/Kg	5
Trichloroethene	8240	ND		ug/Kg	5
Trichlorofluoromethane	8240	ND		ug/Kg	5
Vinyl acetate	8240	ND		ug/Kg	10
Vinyl chloride	8240	ND		ug/Kg	5
Xylenes (total)	8240	ND		ug/Kg	5
SURROGATE RESULTS		--			
Toluene-d8	8240	89		% Rec.	
Bromofluorobenzene	8240	68	a	% Rec.	
1,2-Dichloroethane-d4	8240	44	a	% Rec.	

ND: Not Detected at the Reporting Limit (RL).

a: Low surrogate recovery due to sample matrix interference

Client Name: Groundwater Technology
Client Ref.: IRC/El Segundo 04250881-78
Date Taken: 02/27/1996
NET Job No.: 96.00352
Date Reported: 03/05/1996
Sample ID : VB-1-70
Lab No. : 90973
Sample Matrix: SOIL

ANALYTES/METHOD	METHOD	RESULTS/FLAGS	UNITS	R.L
METHOD 8240(GCMS,Solid)				
Date Analyzed		03-01-96		
Dilution Factor	8240	1		
Acetone	8240	ND	ug/Kg	50
Benzene	8240	ND	ug/Kg	5
Bromodichloromethane	8240	ND	ug/Kg	5
Bromoform	8240	ND	ug/Kg	5
Bromomethane	8240	ND	ug/Kg	5
2-Butanone	8240	ND	ug/Kg	50
Carbon disulfide	8240	ND	ug/Kg	5
Carbon tetrachloride	8240	ND	ug/Kg	5
Chlorobenzene	8240	ND	ug/Kg	5
Chloroethane	8240	ND	ug/Kg	5
2-Chloroethyl vinyl ether	8240	ND	ug/Kg	10
Chloroform	8240	ND	ug/Kg	5
Chloromethane	8240	ND	ug/Kg	5
Dibromochloromethane	8240	ND	ug/Kg	5
1,2-Dichlorobenzene	8240	ND	ug/Kg	5
1,3-Dichlorobenzene	8240	ND	ug/Kg	5
1,4-Dichlorobenzene	8240	ND	ug/Kg	5
1,1-Dichloroethane	8240	ND	ug/Kg	5
1,2-Dichloroethane	8240	ND	ug/Kg	5
1,1-Dichloroethene	8240	ND	ug/Kg	5
cis-1,2-Dichloroethene	8240	ND	ug/Kg	5
trans-1,2-Dichloroethene	8240	ND	ug/Kg	5
1,2-Dichloropropane	8240	ND	ug/Kg	5
cis-1,3-Dichloropropene	8240	ND	ug/Kg	5
trans-1,3-Dichloropropene	8240	ND	ug/Kg	5
Ethyl benzene	8240	ND	ug/Kg	5
2-Hexanone	8240	ND	ug/Kg	50
Methylene chloride	8240	ND	ug/Kg	10
4-Methyl-2-pentanone	8240	ND	ug/Kg	50
Methyl-tert-butyl-ether	8240	ND	ug/Kg	10
Styrene	8240	ND	ug/Kg	5
1,1,2,2-Tetrachloroethane	8240	ND	ug/Kg	5
Tetrachloroethene	8240	15	ug/Kg	5
Toluene	8240	ND	ug/Kg	5
1,1,1-Trichloroethane	8240	ND	ug/Kg	5
1,1,2-Trichloroethane	8240	ND	ug/Kg	5
Trichloroethene	8240	ND	ug/Kg	5
Trichlorofluoromethane	8240	ND	ug/Kg	5
Vinyl acetate	8240	ND	ug/Kg	10
Vinyl chloride	8240	ND	ug/Kg	5
Xylenes (total)	8240	ND	ug/Kg	5
SURROGATE RESULTS		--		
Toluene-d8	8240	95	% Rec.	
Bromofluorobenzene	8240	90	% Rec.	
1,2-Dichloroethane-d4	8240	79	% Rec.	

ND: Not Detected at the Reporting Limit (RL).

Client Name: Groundwater Technology
Client Ref.: IRC/El Segundo 04250881-78
Date Taken: 02/27/1996
NET Job No.: 96.00352
Date Reported: 03/05/1996
Sample ID : VB-1-75
Lab No. : 90974
Sample Matrix: SOIL

ANALYTES/METHOD	METHOD	RESULTS/FLAGS	UNITS	R.L
METHOD 8240(GCMS,Solid)				
Date Analyzed		03-01-96		
Dilution Factor	8240	1		
Acetone	8240	ND	ug/Kg	50
Benzene	8240	ND	ug/Kg	5
Bromodichloromethane	8240	ND	ug/Kg	5
Bromoform	8240	ND	ug/Kg	5
Bromomethane	8240	ND	ug/Kg	5
2-Butanone	8240	ND	ug/Kg	50
Carbon disulfide	8240	ND	ug/Kg	5
Carbon tetrachloride	8240	ND	ug/Kg	5
Chlorobenzene	8240	ND	ug/Kg	5
Chloroethane	8240	ND	ug/Kg	5
2-Chloroethyl vinyl ether	8240	ND	ug/Kg	10
Chloroform	8240	ND	ug/Kg	5
Chloromethane	8240	ND	ug/Kg	5
Dibromochloromethane	8240	ND	ug/Kg	5
1,2-Dichlorobenzene	8240	ND	ug/Kg	5
1,3-Dichlorobenzene	8240	ND	ug/Kg	5
1,4-Dichlorobenzene	8240	ND	ug/Kg	5
1,1-Dichloroethane	8240	ND	ug/Kg	5
1,2-Dichloroethane	8240	ND	ug/Kg	5
1,1-Dichloroethene	8240	ND	ug/Kg	5
cis-1,2-Dichloroethene	8240	ND	ug/Kg	5
trans-1,2-Dichloroethene	8240	ND	ug/Kg	5
1,2-Dichloropropane	8240	ND	ug/Kg	5
cis-1,3-Dichloropropene	8240	ND	ug/Kg	5
trans-1,3-Dichloropropene	8240	ND	ug/Kg	5
Ethyl benzene	8240	ND	ug/Kg	5
2-Hexanone	8240	ND	ug/Kg	50
Methylene chloride	8240	10	ug/Kg	10
4-Methyl-2-pentanone	8240	ND	ug/Kg	50
Methyl-tert-butyl-ether	8240	ND	ug/Kg	10
Styrene	8240	ND	ug/Kg	5
1,1,2,2-Tetrachloroethane	8240	ND	ug/Kg	5
Tetrachloroethene	8240	9	ug/Kg	5
Toluene	8240	ND	ug/Kg	5
1,1,1-Trichloroethane	8240	ND	ug/Kg	5
1,1,2-Trichloroethane	8240	ND	ug/Kg	5
Trichloroethene	8240	ND	ug/Kg	5
Trichlorofluoromethane	8240	ND	ug/Kg	5
Vinyl acetate	8240	ND	ug/Kg	10
Vinyl chloride	8240	ND	ug/Kg	5
Xylenes (total)	8240	ND	ug/Kg	5
SURROGATE RESULTS		--		
Toluene-d8	8240	97	% Rec.	
Bromofluorobenzene	8240	87	% Rec.	
1,2-Dichloroethane-d4	8240	79	% Rec.	

ND: Not Detected at the Reporting Limit (RL).

Client Name: Groundwater Technology
Client Ref.: IRC/El Segundo 04250881-78
Date Taken: 02/27/1996
NET Job No.: 96.00352
Date Reported: 03/05/1996
Sample ID : VB-1-80
Lab No. : 90975
Sample Matrix: SOIL

ANALYTES/METHOD	METHOD	RESULTS/FLAGS	UNITS	R.L
METHOD 8240(GCMS,Solid)				
Date Analyzed		03-01-96		
Dilution Factor	8240	1		
Acetone	8240	ND	ug/Kg	50
Benzene	8240	ND	ug/Kg	5
Bromodichloromethane	8240	ND	ug/Kg	5
Bromoform	8240	ND	ug/Kg	5
Bromomethane	8240	ND	ug/Kg	5
2-Butanone	8240	ND	ug/Kg	50
Carbon disulfide	8240	ND	ug/Kg	5
Carbon tetrachloride	8240	ND	ug/Kg	5
Chlorobenzene	8240	ND	ug/Kg	5
Chloroethane	8240	ND	ug/Kg	5
2-Chloroethyl vinyl ether	8240	ND	ug/Kg	10
Chloroform	8240	ND	ug/Kg	5
Chloromethane	8240	ND	ug/Kg	5
Dibromochloromethane	8240	ND	ug/Kg	5
1,2-Dichlorobenzene	8240	ND	ug/Kg	5
1,3-Dichlorobenzene	8240	ND	ug/Kg	5
1,4-Dichlorobenzene	8240	ND	ug/Kg	5
1,1-Dichloroethane	8240	ND	ug/Kg	5
1,2-Dichloroethane	8240	ND	ug/Kg	5
1,1-Dichloroethene	8240	ND	ug/Kg	5
cis-1,2-Dichloroethene	8240	ND	ug/Kg	5
trans-1,2-Dichloroethene	8240	ND	ug/Kg	5
1,2-Dichloropropane	8240	ND	ug/Kg	5
cis-1,3-Dichloropropene	8240	ND	ug/Kg	5
trans-1,3-Dichloropropene	8240	ND	ug/Kg	5
Ethyl benzene	8240	ND	ug/Kg	5
2-Hexanone	8240	ND	ug/Kg	50
Methylene chloride	8240	10	ug/Kg	10
4-Methyl-2-pentanone	8240	ND	ug/Kg	50
Methyl-tert-butyl-ether	8240	ND	ug/Kg	10
Styrene	8240	ND	ug/Kg	5
1,1,2,2-Tetrachloroethane	8240	ND	ug/Kg	5
Tetrachloroethene	8240	5	ug/Kg	5
Toluene	8240	ND	ug/Kg	5
1,1,1-Trichloroethane	8240	ND	ug/Kg	5
1,1,2-Trichloroethane	8240	ND	ug/Kg	5
Trichloroethene	8240	ND	ug/Kg	5
Trichlorofluoromethane	8240	ND	ug/Kg	5
Vinyl acetate	8240	ND	ug/Kg	10
Vinyl chloride	8240	ND	ug/Kg	5
Xylenes (total)	8240	ND	ug/Kg	5
SURROGATE RESULTS		--		
Toluene-d8	8240	95	% Rec.	
Bromofluorobenzene	8240	80	% Rec.	
1,2-Dichloroethane-d4	8240	74	% Rec.	

ND: Not Detected at the Reporting Limit (RL).

NATIONAL ENVIRONMENTAL TESTING, INC.

CHAIN OF CUSTODY RECORD

C96.00352

COMPANY Groundwater Technology
ADDRESS 20000 Mariner Ave. Suite 200, Torrance
PHONE 310 371-1394 FAX 310 371-4782
PROJECT NAME/LOCATION IRC / El Segundo
PROJECT NUMBER 04250138I-78
PROJECT MANAGER Brian Dean

REPORT TO: B. Dean
INVOICE TO: B. Dean
P.O. NO. 4500483766
NET QUOTE NO.

SAMPLED BY
Grant Williams (PRINT NAME) Grant W Williams (SIGNATURE)
(PRINT NAME) (SIGNATURE)

ANALYSES

To assist us in selecting the proper method
Is this work being conducted for regulatory compliance monitoring? Yes ___ No ✓
Is this work being conducted for regulatory enforcement action? Yes ___ No ✓
Which regulations apply RCRA ___ NPDES Wastewater ___ UST ___ Drinking Water ___ Other ___ None ✓

DATE	TIME	SAMPLE ID/DESCRIPTION	MATRIX	GRAB	COMP	# and Type of Containers: HCl	NaOH	HNO_3	H_2SO_4	OTHER - 1L	EPA 8240 (VOL.)	HOLD	COMMENTS
2/27	17:42	VB-1-5	S	✓						1		✓	HOLD SAMPLES AT LEAST
2/27	17:51	VB-1-10	S	✓						1	✓		ONE WEEK AFTER ANALYSIS
2/27	17:54	VB-1-15	S	✓						1	✓		B.D.
2/27	18:01	VB-1-20	S	✓						1	✓		
2/27	18:06	VB-1-25	S	✓						1	✓		
2/27	18:15	VB-1-30	S	✓						1	✓		
2/27	18:20	VB-1-35	S	✓						1		✓	
2/27	18:27	VB-1-40	S	✓						1	✓		
2/27	18:40	VB-1-45	S	✓						1		✓	
2/27	18:48	VB-1-50	S	✓						1	✓		
2/27	18:55	VB-1-55	S	✓						1		✓	
2/27	19:05	VB-1-60	S	✓						1	✓		
2/27	19:12	VB-1-65	S	✓						1		✓	
2/27	19:22	VB-1-70	S	✓						1	✓		
2/27	19:13	VB-1-75	S	✓						1	✓		
2/27	19:37	VB-1-80	S	✓						1	✓		

CONDITION OF SAMPLE: BOTTLES INTACT? YES / NO
FIELD FILTERED? YES / NO
COC SEALS PRESENT AND INTACT? YES / NO
VOLATILES FREE OF HEADSPACE? YES / NO
TEMPERATURE UPON RECEIPT: 5.3°C
Bottles supplied by NET? YES / NO

SAMPLE REMAINDER DISPOSAL: RETURN SAMPLE REMAINDER TO CLIENT VIA ___
I REQUEST NET TO DISPOSE OF ALL SAMPLE REMAINDERS Brian Dean DATE 2-26-96

RELINQUISHED BY	DATE	TIME	RECEIVED BY:	RELINQUISHED BY:	DATE	TIME	RECEIVED FOR NET BY
Grant Williams	2/27/96	10:15 pm			2/28/96	14:20	

METHOD OF SHIPMENT

REMARKS:

PT 1 - ORIGINAL - WHITE PT 2 - NET PROJECT MANAGER - YELLOW PT 3 - CUSTOMER COPY - PINK

Appendix A-1

Cal/EPA

Los Angeles Regional Water Quality Control Board

101 Centre Plaza Drive
Monterey Park, CA
91754-2156
(213) 266-7500
FAX (213) 266-7600

Pete Wilson
Governor

February 27, 1997

Mr.Gregory Takagi
International Rectifier Corporation
233 Kansas Street
El Segundo, CA 90245

ADDITIONAL SOIL VERIFICATION DATA FOR FACILITY LOCATED AT 233 KANSAS STREET, EL SEGUNDO (FILE NO. 96-114)

Reference is made to your February 13, 1997, soil verification report for the above referenced site. The report concludes that the vapor extraction system (VES) at the aforementioned site has reached an asymptotic rate of recovery and the VES system should be decommissioned.

The VES system has been in operation since 1994. Our review reveals that approximately 15,853 pounds of volatile organic compounds were recovered. The former underground storage tank has been removed and the site is paved with asphalt to minimize infiltration of rainwater. The residual PCE concentration (0.057 mg/kg) in the soil at 65 feet is slightly above this Board's cleanup guideline (0.032 mg/kg). The groundwater has not been impacted.

Based on the above information and the past work completed, we have determined that no further action is necessary regarding the soil issues at the subject site.

If you have any questions regarding this matter, please contact Manjulika Chakrabarti at (213) 266-7610.

J.E. Ross, Unit Chief
Site Cleanup Unit

cc: Brian Dean - Flour Daniel GTI

RECEIVED
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By

Post-it® Fax Note 7671	Date 3/6/97	# of pages ▶ 1
To Deidre Samuels	From Greg Takagi	
Co./Dept.	Co.	
Phone # 8616	Phone # 8702	
Fax # 8439	Fax # 8707	

GROUNDWATER TECHNOLOGY ®

Groundwater Technology, Inc.
20000/200 Mariner Avenue, Torrance, CA 90503-1670 USA
Tel: (310) 371-1394 Fax: (310) 371-4782

ENVIRONMENTAL ASSESSMENT REPORT
WASTE DRAIN LINE
INTERNATIONAL RECTIFIER CORPORATION
233 KANSAS STREET
EL SEGUNDO, CALIFORNIA 90245

AUGUST 23, 1995

Prepared for:
Mr. Robert Feist
International Rectifier Corporation
233 Kansas Street
El Segundo, California 90245

Groundwater Technology, Inc.
Submitted by:

Brian D. Dean
Project Manager
National Industry Division

Groundwater Technology, Inc.
Approved by:

Kenneth E. Ragland
Registered Geologist
National Industry

REGISTERED GEOLOGIST
KENNETH E. RAGLAND
No. 5988
STATE OF CALIFORNIA

1381/ACIDSPIL.RPT

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2. Site Plan
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Appendices

A. Laboratory Reports & Chains-of-Custody

INTRODUCTION

Groundwater Technology, Inc was contracted by International Rectifier Corporation to assess the environmental impact to soils from a leak in their manufacturing process. On May 9, 1995, International Rectifier discovered a crack in their waste drain line at 233 Kansas Street, El Segundo, California (Figure 1). The line was 3-inches in diameter and composed of polyvinylchloride pipe. The leak occurred at the point shown in Figure 2 (Site Plan). At this point, the line is below grade, sloping south at an angle of approximately 1.4 degrees, and is underlain by soil. The line carried a dilute solution of distilled water, sulfuric acid, hydrofluoric acid, hydrochloric acid, hydrogen peroxide, and ammonium fluoride. It was not possible to estimate the quantity of waste leaked from the pipe, but is presumed to have leaked slowly over time since the fluids in the line are not pressured and flow under gravity. Operations utilizing this line were immediately suspended, and the leak reported to the Department of Toxic Substances Control (and other regulatory agencies) in a letter dated May 11. The cracked pipe was replaced on May 12, and the manufacturing process was resumed. The following sections of this report describe Groundwater Technology's efforts to assess the environmental conditions at the affected area.

notified on 5/15/95
sulfuric acid
hydrofluoric
hydrochloric
hydrogen peroxide
ammonium fluoride

SAMPLE COLLECTION

Groundwater Technology inspected the affected area on two separate occasions, May 15 and 23. The waste drain line was contained in a dirt lined pipe trench with dimensions of 14.25 inches wide by 11.5 inches deep. Below the location of the formerly cracked pipe was a solution cavity, presumably formed by dissolution of the soil due to the acidic nature of the waste. The cavity opening was elliptical in shape and narrow with dimensions of 11.5 inches (long axis) by 8 inches (short axis). The cavity extended to a depth of 8.5 feet below surface. At this depth, the cavity was wider with a relatively circular shape of approximately 3.5 feet in diameter. A cross-sectional map of the cavity and pipe trench is provided as Figure 3.

The area of the leak was heavily congested. Directly east of the pipe trench was a row of fixed laboratory equipment. Directly west of the pipe trench were two free standing pieces of laboratory equipment. Directly above the trench were additional rigid piping systems. This configuration severely limited soil sampling opportunities. In addition, no dust could be generated during sampling as this would adversely affect the performance of the surrounding laboratory equipment.

On June 19, Groundwater Technology collected soil samples from the cavity floor and sidewalls. Samples were collected using a 6-inch long by 2-inch diameter sampling tip, steel rod extensions, and mechanical slide hammer. The sampling tip was driven into the cavity floor and sidewalls at four separate locations as shown in Figure 3. The soil was found to be very dense, highly cemented, and resistant to sampling. Recovered soil was placed in glass jars, sealed, and labeled pending delivery to a state-certified environmental laboratory. The soil was light tan to white in color and composed of fine-grained sand with little or no silt and clay. Groundwater Technology attempted to measure corrosivity of the soil in the field using a handheld instrument, but readings proved to be consistently erroneous. A hand auger was used to drill approximately 6 inches below the cavity floor to the point of auger refusal. Two additional samples were collected from this hole using the mechanical slide hammer, rod extensions, sampling tip, a glass jar, and a stainless steel ring insert. The tip was decontaminated prior to sampling using a dilute solution of water and trisodium phosphate followed by successive rinses in deionized water. Some of the recovered soil was placed in a glass jar, sealed, and labeled as sample FX-1. The remaining soil was collected *in-situ* using the stainless steel ring insert. The sample ring was capped at both ends, sealed,

labeled as sample FX-2, and placed on ice pending delivery to a state-certified environmental laboratory. On June 20, all six samples were delivered to National Environmental Testing, Inc. (NET) laboratory in Burbank, California, for analysis.

On July 26, Groundwater Technology collected additional samples from below the cavity floor. The purpose of this additional sampling was to determine, if possible, the extent of soil impacted by the waste liquid. Alternate sampling equipment was used in an effort to penetrate the cemented soils to a greater depth. The steel rod extensions were replaced with both 1-inch and 3/4-inch diameter black iron pipe for strength. The 2-inch diameter sampling tip was replaced with three black iron tips of 1 and 3/4-inch diameters for increased penetration. Two of the tips were chamferred while a serrated edge was cut into the third tip. The mechanical slide hammer was replaced with a heavier fence post hammer. A custom manufactured adapter was used to connect the black iron pipe to a rotary-hammer drill. Using these tools, Groundwater Technology succeeded in collecting six soil samples to a maximum depth of 13.25 feet below surface at the same location as FX-1 and FX-2. There was little variation of the soil with depth. The soil type did not change, but the soil color became increasingly tan with depth. The soil continued to be cemented and dense throughout the sampling as evidenced by the damage to the sampling equipment. The three sampling tips were severely damaged in achieving this depth and unable to further penetrate the soil. The rotary-hammer drill failed to generate sufficient torque to drill into the soil. Two sections of black iron pipe were bent beyond use during the sampling. The six soil samples were placed in glass jars, sealed, labeled, and delivered to NET on July 27 for laboratory testing.

LABORATORY ANALYSIS

The first six samples were analyzed from June 22 through June 30. Five of the samples were analyzed for corrosivity by Environmental Protection Agency (EPA) Method 9045. Results ranged from 2.4 to 2.6 pH units and are presented in Table 1. Sample FX-2 was analyzed for volatiles, semivolatiles, and metals by EPA Methods 8240, 8270, and 6010/7470, respectively. No volatiles or semivolatiles were detected in the sample. Four of the 17 target metals were detected, but at concentrations well below limits used to identify hazardous wastes under California Code of Regulations (CCR), Title 22, Section 66261.24. Metals results are presented in Table 2.

The last six samples were analyzed on August 2 for corrosivity by EPA Method 9045. Results ranged from 2.8 to 4.3 pH units and are presented in Table 1. Copies of laboratory reports and chains-of-custody are provided in Appendix A.

Soil corrosivity is plotted against depth in Figures 4 and 5 for linear and semilogarithmic relationships, respectively. The equation of the line best fitting this data for each of these cases was determined in Tables 3 and 4. Variances for the two cases are almost identical but is slightly smaller in the semilogarithmic case. Using the equations of these two lines, a corrosivity of 7.0 pH units is predicted at depths between 17.5 and 20.4 feet below surface.

WASTE EVALUATION

Groundwater Technology evaluated properties of the waste stream for consideration in determining the environmental impact at this location. Details of this evaluation are presented in Table 5 and summarized as follows:

- International Rectifier reported that the drain line carried waste consisting of six different compounds including distilled water, sulfuric acid, hydrofluoric acid, hydrochloric acid, hydrogen peroxide, and ammonium fluoride.

- International Rectifier reported that 99.582 percent of the waste stream (by weight) was composed of distilled water. Only 0.386 percent of the waste stream was composed of acid.

- Both sulfuric and hydrochloric acids are listed as corrosive wastes, Resource Conservation and Recovery Act (RCRA) waste code D002. A corrosive waste is defined under CCR, Title 22, Section 66261.22 as hazardous if it exhibits a pH less than or equal to 2.0. Since all soil samples demonstrated a corrosivity greater than 2.0 pH units, the soil is nonhazardous for corrosivity.

- Hydrofluoric acid is listed as a corrosive and toxic waste, RCRA waste code U134 (CCR, Title 22, Section 66261.33). As noted above, the soil is nonhazardous for corrosivity. The toxic characteristic of this waste is due to the presence of the fluoride anion.

- Ammonium fluoride and hydrogen peroxide are not listed RCRA wastes but are listed as hazardous materials under CCR, Title 22, Section 66261, Appendix 10.

- Boiling points for the wastes vary from -121 to 554 degrees Fahrenheit. In their dilute form, the boiling points of hydrofluoric and hydrochloric acid are significantly higher.

- Vapor pressures for the wastes vary from <0.001 to >3,000 millimeters of mercury (at 68 degrees Fahrenheit). In their dilute form, the vapor pressures of hydrofluoric and

hydrochloric acid are significantly lower. No acid odors were detected above the cavity, and air from the laboratory environment is continuously evacuated and treated on site via an acid gas scrubbing system.

- None of the wastes are ignitable as defined by CCR, Title 22, Section 66261.21.

- All of the wastes are soluble in water. However, depth to groundwater at this site is greater than 80 feet below surface as evidenced by a nearby vadose well (75 feet away). Since the spill is contained within a building, the contaminants are immune to the leaching effects of rainwater.

- None of the wastes are hazardously reactive as defined by CCR, Title 22, Section 66261.23.

CONCLUSION

Based on the information presented in this report, Groundwater Technology has formulated the following conclusions:

- International Rectifier has spilled an unknown volume of a dilute waste solution containing three listed RCRA wastes: sulfuric acid (D002), hydrofluoric acid (U134), and hydrochloric acid (D002).

- The spill has impacted subsurface soils and created a cavity with dimensions of approximately 8.5 feet deep and 3.5 feet wide (at the largest point). Soils from below the cavity floor exhibited corrosivities of between 2.6 and 4.3 pH units depending on depth. Assuming either a linear or semilogarithmic relationship between corrosivity and depth, a corrosivity of 7.0 pH units is predicted between 17.5 and 20.4 feet below surface.

- Impacted soil has been cemented in varying degrees as a result of its exposure to the corrosive waste solution.

- Soils from the cavity floor and sidewalls exhibited corrosivities of between 2.4 and 2.6 pH units. With corrosivities greater than 2.0 pH units, this soil is nonhazardous for corrosivity as defined by CCR, Title 22, Section 66261.22.

- No detectable concentrations of volatile or semivolatile organics (EPA Methods 8240 and 8270) were found in a soil sample from the cavity floor.

- No concentrations of metals were found in excess of limits used to identify hazardous wastes under CCR, Title 22, Section 66261.24.

- The spill is located in an area with access restricted to International Rectifier personnel and authorized visitors.

- There is no risk to human health from inhalation of acid vapors. Air from the laboratory

environment of the spill area is continuously evacuated and treated on site. The vapor pressure of the dilute acidic solution is much lower than the vapor pressures of the pure acid constituents.

- There is no risk to human health from dermal contact or ingestion of the soil as the impacted area is below ground and inaccessible under normal laboratory conditions.

- There is no risk of downward contaminant leaching by rainwater since the entire spill area is contained within a building. Depth to groundwater is documented at greater than 80 feet below surface for this area.

- Excavation of the impacted soils is not feasible due to space constraints and the overwhelming impact the resulting dust would have on International Rectifier's electronics manufacturing process. In-situ remediation of the affected soils is not practical due to the cemented and relatively impermeable nature of the soils.

RECOMMENDATIONS

Groundwater Technology, Inc. has formulated the following recommendations based on the information presented in this report:

1. No further assessment of the cavity is required because:

   (a) sample collection from the cemented soils is extremely difficult,

   (b) the vertical extent of contamination is adequately defined,

   (c) there is no risk to human health from acid vapor inhalation,

   (d) there is no risk to human health from dermal contact with the soil,

   (e) there is no risk to human health from ingestion of the soil, and

   (f) there is no risk to the environment from contaminant leaching via rainwater percolation.

2. The cavity should be filled with concrete to eliminate the risk of collapse. The concrete should be a dense mix using an alkali cement and low water ratio for greatest resistance to the corrosive soils.

3. The unlined pipe trench and single-walled waste handling system should be re-engineered to protect against potential future spills.

TABLES

GROUNDWATER TECHNOLOGY, INC.

TABLE 1

LABORATORY RESULTS - CORROSIVITY
Environmental Assessment - Waste Drain Line
233 Kansas Street, El Segundo, California 90245

Sample Name	Date Sampled	Description	Sample Depth (feet below surface)	EPA Method 9045 Corrosivity (pH units)
WS-1	6/19/95	Wall sample	5.0	2.4
WN-1	6/19/95	Wall sample	5.0	2.6
FS-1	6/19/95	Floor sample	8.5	2.6
FN-1	6/19/95	Floor sample	8.5	2.6
FX-1	6/19/95	Floor sample	9.0	2.6
BOTTOM-10	7/26/95	Floor sample	10.0	2.9
BOTTOM-10.75	7/26/95	Floor sample	10.75	2.8
BOTTOM-11.25	7/26/95	Floor sample	11.25	4.0
BOTTOM-12.75	7/26/95	Floor sample	12.75	4.2
BOTTOM-13	7/26/95	Floor sample	13.0	4.0
BOTTOM-13.25	7/26/95	Floor sample	13.25	4.3

TABLE 2

LABORATORY RESULTS - METALS
Environmental Assessment - Waste Drain Line
233 Kansas Street, El Segundo, California 90245

California Action Metal	EPA Method 6010/7470 Sample FX-2 Concentration (mg/kg)	Title 22 Haz. Waste Limit for Toxicity - TTLC (mg/kg)
Antimony	<1.0	500
Arsenic	<1.0	500
Barium	490.	10,000
Beryllium	<1.0	75
Cadmium	<1.0	100
Chromium	1.1	500
Cobalt	<1.0	8,000
Copper	<1.0	2,500
Lead	4.3	1,000
Mercury	<0.1	20
Molybdenum	<1.0	3,500
Nickel	<1.0	2,000
Selenium	<1.0	100
Silver	<1.0	500
Thallium	<2.0	700
Vanadium	<1.0	2,400
Zinc	25.	5,000

Notes:
mg/kg = milligrams per kilogram

\1381\TABLE2.RPT

GROUNDWATER TECHNOLOGY

CURVE FITTING – LINEAR CASE
Environmental Assessment – Waste Drain Line
233 Kansas Street, El Segundo, CA 90245

TABLE 3

General equation of line: $y = ax + b$

	Count (n)	Depth (x)	pH (y)	(xy)	(x^2)	Calc (x) (Xc)	Variance (x–Xc)^2	Calc (y) (Yc)	Variance (y–Yc)^2
	1	8.50	2.6	22.1	72.3	8.9	0.172	2.4	0.025
	2	9.00	2.6	23.4	81.0	8.9	0.007	2.6	0.001
	3	10.00	2.9	29.0	100.0	9.7	0.093	3.0	0.014
	4	10.75	2.8	30.1	115.6	9.4	1.729	3.3	0.255
	5	11.25	4.0	45.0	126.6	12.6	1.716	3.5	0.253
	6	12.75	4.2	53.6	162.6	13.1	0.109	4.1	0.016
	7	13.00	4.0	52.0	169.0	12.6	0.194	4.2	0.029
	8	13.25	4.3	57.0	175.6	13.3	0.008	4.3	0.001
Total	8	88.50	27.4	312.1	1002.5		4.028		0.594

Calculations using totals:

H = (x^2*n)–(x*x) =	187.8
a = [(xy*n)–(x*y)] / H =	0.384
b = [(x^2*y)–(x*xy)] / H =	–0.823

Variances:

Vx = (x–Xc)^2 / (n–2) =	0.671
Vy = (y–Yc)^2 / (n–2) =	0.099

Equation of line: $y = 0.384x - 0.823$

If y = 7, then x = 20.4 feet

\1381\LINEAR.WK1

GROUNDWATER TECHNOLOGY, INC.

CURVE FITTING – SEMILOG CASE
Environmental Assessment – Waste Drain Line
233 Kansas Street, El Segundo, CA 90245

TABLE 4

General equation of line:	y = be^ax
Linearized equation:	ln(y) = ln(b) + ax

	Count (n)	Depth (x)	pH (y)	ln(y)	[x*ln(y)]	(x^2)	Calc (x) (Xc)	Variance (x–Xc)^2	Calc (y) (Yc)	Variance (y–Yc)^2
	1	8.50	2.6	0.96	8.1	72.3	8.8	0.121	2.5	0.010
	2	9.00	2.6	0.96	8.6	81.0	8.8	0.023	2.6	0.002
	3	10.00	2.9	1.06	10.6	100.0	9.8	0.039	3.0	0.004
	4	10.75	2.8	1.03	11.1	115.6	9.5	1.574	3.2	0.187
	5	11.25	4.0	1.39	15.6	126.6	12.6	1.855	3.4	0.333
	6	12.75	4.2	1.44	18.3	162.6	13.0	0.083	4.1	0.019
	7	13.00	4.0	1.39	18.0	169.0	12.6	0.151	4.2	0.033
	8	13.25	4.3	1.46	19.3	175.6	13.2	0.000	4.3	0.000
Total	8	88.50		9.67	109.7	1002.5		3.846		0.589

Calculations using totals:

H = (x^2*n)–(x*x) =	187.8
a = [(xy*n)–(x*y)] / H =	0.114
b = [(x^2*y)–(x*xy)] / H =	–0.057

Variances:

Vx = (x–Xc)^2 / (n–2) =	0.641
Vy = (y–Yc)^2 / (n–2) =	0.098

Equation of line: **ln(y) = ln(–0.057) + 0.114x**
or, y = 0.944 e^(0.114x)

If y = 7, then x = 17.5 feet

\1381\SEMILOG.WK1

GROUNDWATER TECHNOLOGY, INC.

TABLE 5

WASTE EVALUATION
Environmental Assessment - Waste Drain Line
233 Kansas Street, El Segundo, California 90245

Component	Approximate % by weight	RCRA Waste Code	Listed Hazardous Characteristic	Molecular Weight	Boiling Point (deg F)	Vapor Pressure (mm Hg @ 68 deg F)	Combustible	Water Solubility	Reactive Hazards
Sulfuric Acid	0.330	D002	Corrosivity	98.08	554	<0.001	No	Soluble	Water,[2] Incompatibles
Hydrofluoric Acid	0.053	U134	Corrosivity Toxicity	20.01	67	760	No	Soluble	Silica, Incompatibles
Hydrochloric Acid	0.003	D002	Corrosivity	36.46	-121	>3,000	No	Soluble	Incompatibles
Ammonium Fluoride (solid)	0.016	Not listed	—	37.05	—	—	No	50% by weight	Oxidizers, Incompatibles
Hydrogen Peroxide, 30%	0.016	Not listed	—	34.01	226	2.2	No[1]	Miscible	Incompatibles
Distilled Water	99.582	—	—	—	—	—	—	—	—
Total	100.000								

Notes:

— = Not applicable

[1] Promotes ignition of combustible materials

[2] When water is added to acid (not vice-versa)

\1381\TABLE5.RPT

GROUNDWATER TECHNOLOGY, INC.

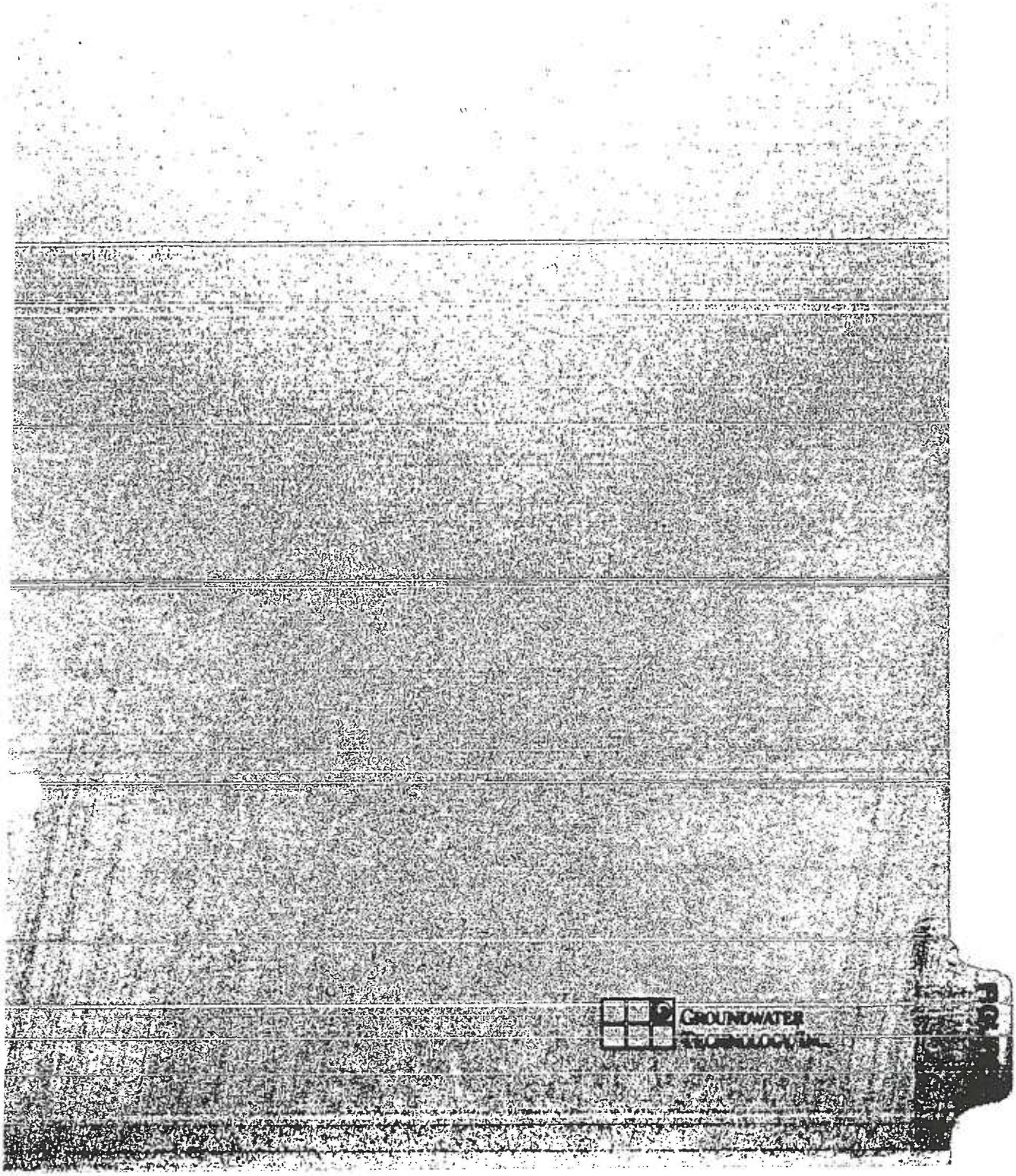
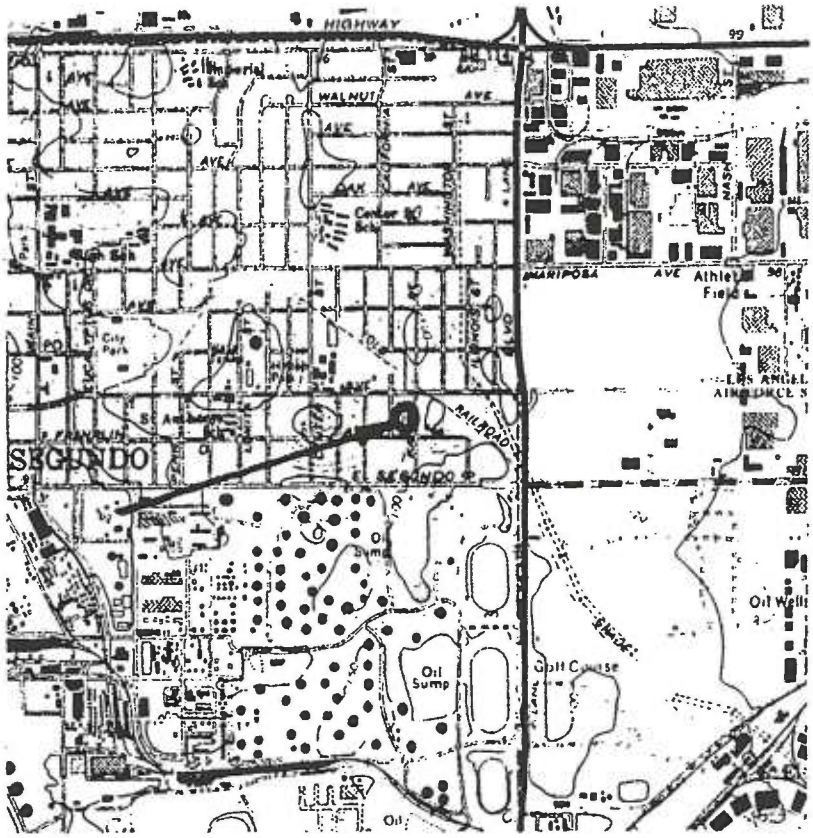

GROUNDWATER

FIGURE 2-1

SITE LOCATION MAP

International Rectifier Corporation
233 Kansas Street
El Segundo, California

N



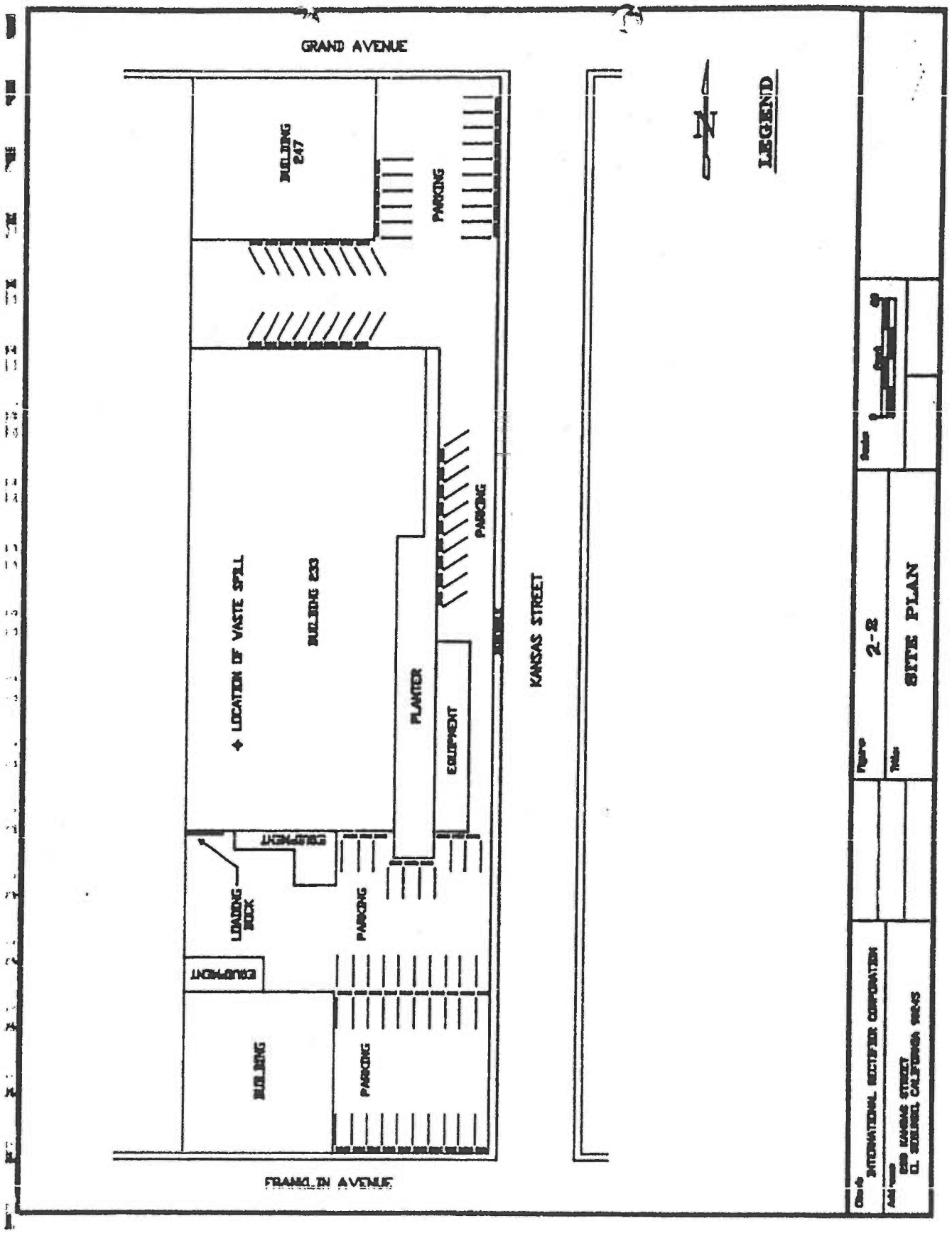
SITE LOCATION

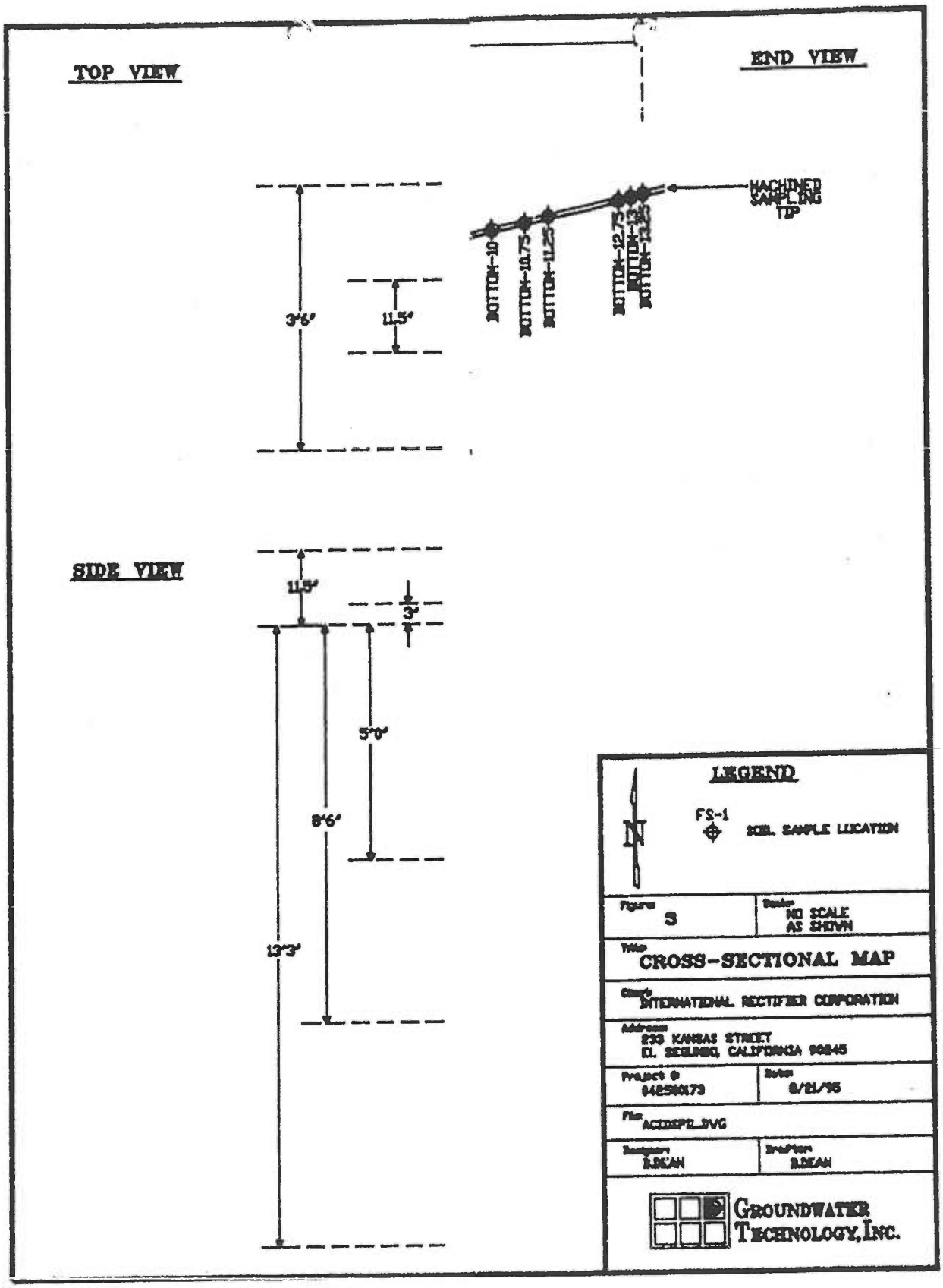
Source: U.S.G.S. Venice, Calif. 1964
Photorevised 1981

SCALE 1:24 000

1 1/2 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET


GRAND AVENUE
BUILDING 247
PARKING
LEGEND
LOCATION OF WASTE SPILL
BUILDING 233
PARKING
PLANTER
EQUIPMENT
KANSAS STREET
EQUIPMENT
LOADING DOCK
PARKING
EQUIPMENT
BUILDING
PARKING
FRANKLIN AVENUE
Figure 2-2
Title SITE PLAN
INTERNATIONAL RECTIFIER CORPORATION
EL SEGUNDO, CALIFORNIA 90245


TOP VIEW
END VIEW
MACHINED SAMPLING TIP
BOTTOM-10
BOTTOM-10.75
BOTTOM-11.25
BOTTOM-12.75
BOTTOM-13.25
3'6"
11.5"
SIDE VIEW
11.5"
3"
5'0"
8'6"
13'3"
LEGEND
FS-1
SOIL SAMPLE LOCATION
Figure 3
Scale NO SCALE AS SHOWN
Title CROSS-SECTIONAL MAP
Client INTERNATIONAL RECTIFIER CORPORATION
Address 233 KANSAS STREET EL SEGUNDO, CALIFORNIA 90245
Project # 148580173
Date 8/21/95
File ACIDSPIL.SVG
Designer B.DEAN
Drafter B.DEAN
GROUNDWATER TECHNOLOGY, INC.

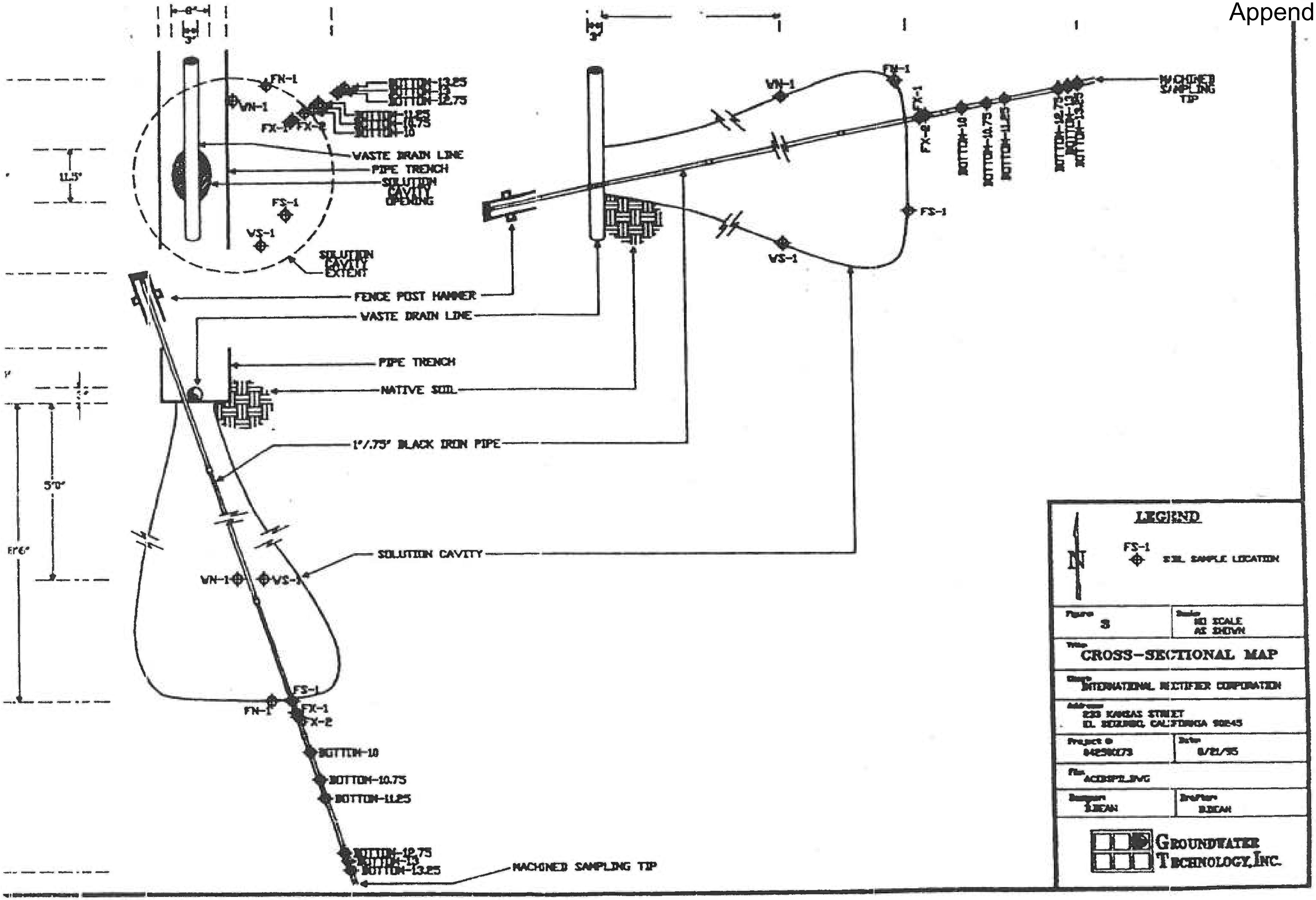
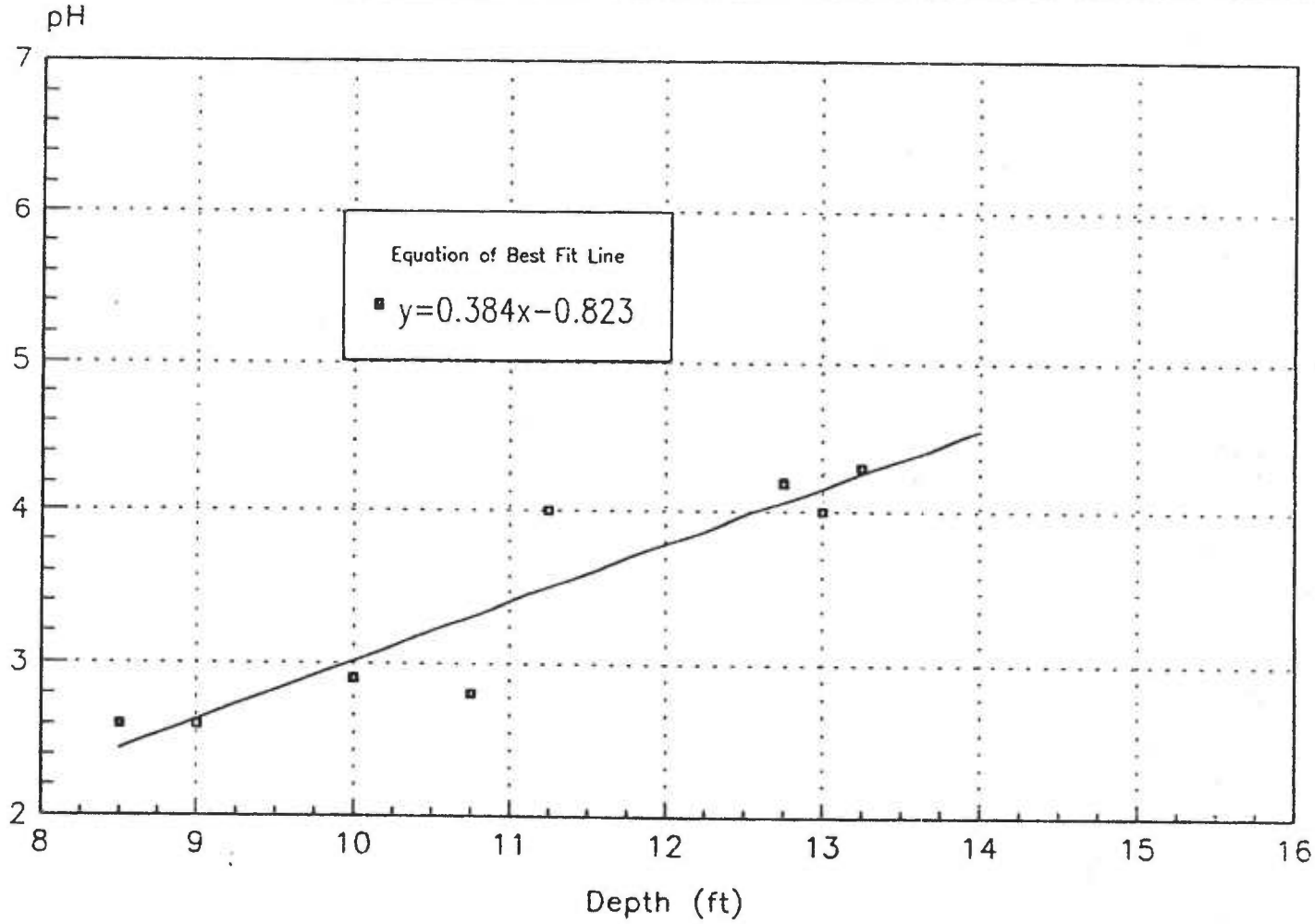

FN-1
WN-1
FX-1
FX-2
BOTTOM-13.25
BOTTOM-13
BOTTOM-12.75
BOTTOM-11.25
BOTTOM-10.75
BOTTOM-10
WASTE DRAIN LINE
PIPE TRENCH
SOLUTION CAVITY OPENING
FS-1
WS-1
SOLUTION CAVITY EXTENT
MACHINED SAMPLING TIP
FENCE POST HAMMER
WASTE DRAIN LINE
PIPE TRENCH
NATIVE SOIL
1"/.75" BLACK IRON PIPE
SOLUTION CAVITY
MACHINED SAMPLING TIP
LEGEND
FS-1
SOIL SAMPLE LOCATION
3
NO SCALE AS SHOWN
CROSS-SECTIONAL MAP
GROUNDWATER TECHNOLOGY, INC.

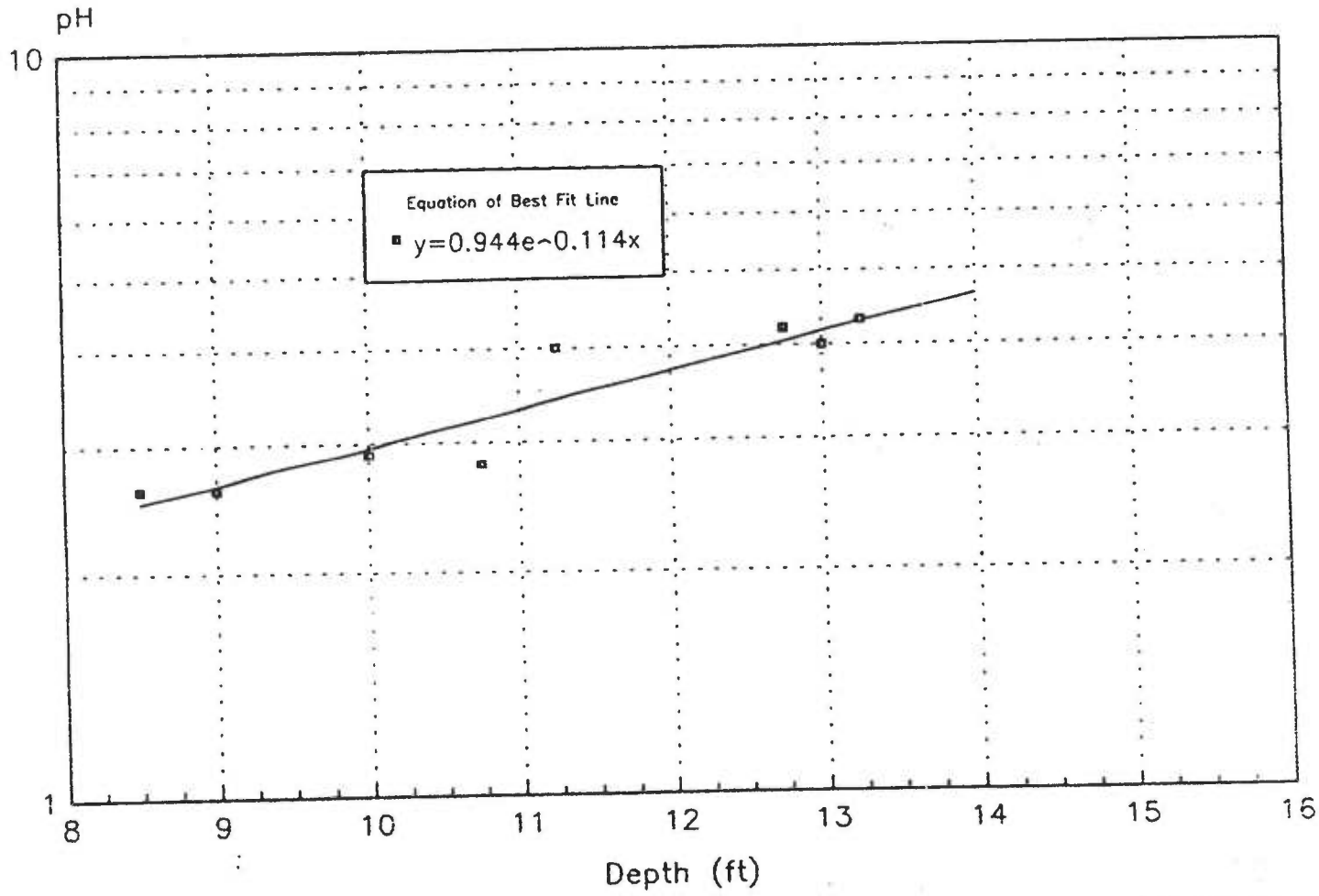
Figure 4
Curve Fitting–Linear Case
233 Kansas Street, El Segundo, California 90245



Proj #042500173

GROUNDWATER TECHNOLOGY, INC.

Figure 5
Curve Fitting–Semilog Case
233 Kansas Street, El Segundo, California 90245



Proj #042500173

GROUNDWATER TECHNOLOGY, INC.

A

GROUNDWATER
TECHNOLOGY, INC.

NET NATIONAL ENVIRONMENTAL TESTING, INC.

Burbank Division
700 South Flower Street
Burbank, CA 91502
Tel: (213) 849-6501
Fax: (818) 567 6477

DOHS Certificate Number: 1192
LACSD Lab I.D. Number: 10158

07/05/1995

Brian Dean
Groundwater Technology
20000/200 Mariner Drive
Torrance, CA 90503

Client Ref: IRC/El Segundo 042501381/78
Date Received: 06/20/1995

Sample analysis for the project referred to above has been completed and results are located on attached pages.

Should you have questions regarding procedures or results, please feel welcome to contact our Client Services Representatives or the Laboratory Director.

for Glenn Daniels
Project Manager

KB:rm
Attachments:
Analytical Reports
Chain of Custody Document

Client Net Acct No: 13931
NET Job No: 95.00790 Rev. 2.0-10/03/95

Client Name: Groundwater Technology
Client Ref.: IRC/El Segundo 042501381/78

NET Job No.: 95.00790 Date Taken: 06/19/1995
Sample ID : WS-1 Date Reported: 07/05/1995
Lab No. : 80114 Sample Matrix: SOIL

ANALYTES/METHOD	METHOD	RESULTS/FLAGS	UNITS	R.L
Soil pH measured in water	9045	2.4	pH units	

ND: Not Detected at the Reporting Limit (RL), if a dilution factor is reported the R.L. must be multiplied by the dilution factor to obtain actual R.L.

Client Name: Groundwater Technology
Client Ref.: IRC/El Segundo 042501381/78
Date Taken: 06/19/1995
NET Job No.: 95.00790
Date Reported: 07/05/1995
Sample ID : WN-1
Lab No. : 80115
Sample Matrix: SOIL

ANALYTES/METHOD	METHOD	RESULTS/FLAGS	UNITS	R.L
Soil pH measured in water	9045	2.6	pH units	

ND: Not Detected at the Reporting Limit (RL), if a dilution factor is reported the R.L. must be multiplied by the dilution factor to obtain actual R.L.

Client Name: Groundwater Technology
Client Ref.: IRC/El Segundo 042501381/78

NET Job No.: 95.00790 Date Taken: 06/19/1995
Sample ID : FS-1 Date Reported: 07/05/1995
Lab No. : 80116 Sample Matrix: SOIL

ANALYTES/METHOD	METHOD	RESULTS/FLAGS	UNITS	R.L
Soil pH measured in water	9045	2.6	pH units	

ND: Not Detected at the Reporting Limit (RL), if a dilution factor is reported the R.L. must be multiplied by the dilution factor to obtain actual R.L.

Client Name: Groundwater Technology
Client Ref.: IRC/El Segundo 042501381/78

NET Job No.: 95.00790 Date Taken: 06/19/1995
Sample ID : FN-1 Date Reported: 07/05/1995
Lab No. : 80117 Sample Matrix: SOIL

ANALYTES/METHOD	METHOD	RESULTS/FLAGS	UNITS	R.L
Soil pH measured in water	9045	2.6	pH units	

ND: Not Detected at the Reporting Limit (RL), if a dilution factor is reported the R.L. must be multiplied by the dilution factor to obtain actual R.L.

Client Name: Groundwater Technology
Client Ref.: IRC/El Segundo 042501381/78

NET Job No.: 95.00790 Date Taken: 06/19/1995
Sample ID : FX-1 Date Reported: 07/05/1995
Lab No. : 80118 Sample Matrix: SOIL

ANALYTES/METHOD	METHOD	RESULTS/FLAGS	UNITS	R.L
Soil pH measured in water	9045	2.6	pH units	

ND: Not Detected at the Reporting Limit (RL), if a dilution factor is reported the R.L. must be multiplied by the dilution factor to obtain actual R.L.

Client Name: Groundwater Technology
Client Ref.: IRC/El Segundo 042501381/78

NET Job No.: 95.00790 Date Taken: 06/19/1995
Sample ID : FX-2 Date Reported: 07/05/1995
Lab No. : 80119 Sample Matrix: SOIL

ANALYTES/METHOD		METHOD	RESULTS/FLAGS	UNITS	R.L
Hg Prep	(Solid)		DONE		
17 CAM Metals, Total					
Antimony	(ICP)	6010	ND	mg/Kg	1.0
Arsenic	(ICP)	6010	ND	mg/Kg	1.0
Barium	(ICP)	6010	490	mg/Kg	1.0
Beryllium	(ICP)	6010	ND	mg/Kg	1.0
Cadmium	(ICP)	6010	ND	mg/Kg	1.0
Chromium	(ICP)	6010	1.1	mg/Kg	1.0
Cobalt	(ICP)	6010	ND	mg/Kg	1.0
Copper	(ICP)	6010	ND	mg/Kg	1.0
Lead	(ICP)	6010	4.3	mg/Kg	1.0
Mercury	(CVAA)	7470	ND	mg/Kg	0.10
Molybdenum	(ICP)	6010	ND	mg/Kg	1.0
Nickel	(ICP)	6010	ND	mg/Kg	1.0
Selenium	(ICP)	6010	ND	mg/Kg	1.0
Silver	(ICP)	6010	ND	mg/Kg	1.0
Thallium	(ICP)	6010	ND	mg/Kg	2.0
Vanadium	(ICP)	6010	ND	mg/Kg	1.0
Zinc	(ICP)	6010	25	mg/Kg	1.0

ND: Not Detected at the Reporting Limit (RL), if a dilution factor is reported the R.L. must be multiplied by the dilution factor to obtain actual R.L.

Client Name: Groundwater Technology
Client Ref.: IRC/El Segundo 042501381/78

NET Job No.: 95.00790 Date Taken: 06/19/1995
Sample ID : FX-2 Date Reported: 07/05/1995
Lab No. : 80119 Sample Matrix: SOIL

ANALYTES/METHOD	METHOD	RESULTS/FLAGS	UNITS	R.L
METHOD 8240(GCMS,Solid)				
Extraction Method		5030		
Date Extracted		06-22-95		
Date Analyzed		06-22-95		
Dilution Factor	8240	1		
Acetone	8240	ND	ug/Kg	50
Benzene	8240	ND	ug/Kg	5
Bromodichloromethane	8240	ND	ug/Kg	5
Bromoform	8240	ND	ug/Kg	5
Bromomethane	8240	ND	ug/Kg	5
2-Butanone	8240	ND	ug/Kg	50
Carbon disulfide	8240	ND	ug/Kg	5
Carbon tetrachloride	8240	ND	ug/Kg	5
Chlorobenzene	8240	ND	ug/Kg	5
Chloroethane	8240	ND	ug/Kg	5
2-Chloroethyl vinyl ether	8240	ND	ug/Kg	10
Chloroform	8240	ND	ug/Kg	5
Chloromethane	8240	ND	ug/Kg	5
Dibromochloromethane	8240	ND	ug/Kg	5
1,2-Dichlorobenzene	8240	ND	ug/Kg	5
1,3-Dichlorobenzene	8240	ND	ug/Kg	5
1,4-Dichlorobenzene	8240	ND	ug/Kg	5
1,1-Dichloroethane	8240	ND	ug/Kg	5
1,2-Dichloroethane	8240	ND	ug/Kg	5
1,1-Dichloroethene	8240	ND	ug/Kg	5
cis-1,2-Dichloroethene	8240	ND	ug/Kg	5
trans-1,2-Dichloroethene	8240	ND	ug/Kg	5
1,2-Dichloropropane	8240	ND	ug/Kg	5
cis-1,3-Dichloropropene	8240	ND	ug/Kg	5
trans-1,3-Dichloropropene	8240	ND	ug/Kg	5
Ethyl benzene	8240	ND	ug/Kg	5
2-Hexanone	8240	ND	ug/Kg	50
Methylene chloride	8240	ND	ug/Kg	10
4-Methyl-2-pentanone	8240	ND	ug/Kg	50
Methyl-tert-butyl-ether	8240	ND	ug/Kg	10
Styrene	8240	ND	ug/Kg	5
1,1,2,2-Tetrachloroethane	8240	ND	ug/Kg	5
Tetrachloroethene	8240	ND	ug/Kg	5
Toluene	8240	ND	ug/Kg	5
1,1,1-Trichloroethane	8240	ND	ug/Kg	5
1,1,2-Trichloroethane	8240	ND	ug/Kg	5
Trichloroethene	8240	ND	ug/Kg	5
Trichlorofluoromethane	8240	ND	ug/Kg	5
Vinyl acetate	8240	ND	ug/Kg	10
Vinyl chloride	8240	ND	ug/Kg	5
Xylenes (total)	8240	ND	ug/Kg	5
SURROGATE RESULTS		--		
Toluene-d8	8240	99	% Rec.	
Bromofluorobenzene	8240	92	% Rec.	

ND: Not Detected at the Reporting Limit (RL), if a dilution factor is reported the R.L. must be multiplied by the dilution factor to obtain actual R.L.

Client Name: Groundwater Technology
Client Ref.: IRC/El Segundo 042501381/78

NET Job No.: 95.00790
Sample ID : FX-2
Lab No. : 80119

Date Taken: 06/19/1995
Date Reported: 07/05/1995

Sample Matrix: SOIL

ANALYTES/METHOD	METHOD	RESULTS/FLAGS	UNITS	R.L
1,2-Dichloroethane-d4	8240	93	% Rec.	

ND: Not Detected at the Reporting Limit (RL), if a dilution factor is reported the R.L. must be multiplied by the dilution factor to obtain actual R.L.

Client Name: Groundwater Technology
Client Ref.: IRC/El Segundo 042501381/78
Date Taken: 06/19/1995
NET Job No.: 95.00790
Date Reported: 07/05/1995
Sample ID : FX-2
Lab No. : 80119
Sample Matrix: SOIL

ANALYTES/METHOD	METHOD	RESULTS/FLAGS	UNITS	R.L
METHOD 8270(GCMS,Solid)				
DATE EXTRACTED		06-23-95		
DATE ANALYZED		06-30-95		
Dilution Factor		1		
BASE/NEUTRAL EXTRACTABLES		--		
Acenaphthene	8270	ND	ug/Kg	330
Acenaphthylene	8270	ND	ug/Kg	330
Aldrin	8270	ND	ug/Kg	1600
Aniline	8270	ND	ug/Kg	1600
Anthracene	8270	ND	ug/Kg	330
Azobenzene	8270	ND	ug/Kg	660
Benzidine	8270	ND	ug/Kg	1600
Benzo(a)anthracene	8270	ND	ug/Kg	330
Benzo(b)fluoranthene	8270	ND	ug/Kg	330
Benzo(k)fluoranthene	8270	ND	ug/Kg	330
Benzo(a)pyrene	8270	ND	ug/Kg	330
Benzo(g,h,i)perylene	8270	ND	ug/Kg	330
Benzoic acid	8270	ND	ug/Kg	1600
Benzyl alcohol	8270	ND	ug/Kg	330
4-Bromophenyl phenyl ether	8270	ND	ug/Kg	330
Butyl benzyl phthalate	8270	ND	ug/Kg	330
alpha-BHC	8270	ND	ug/Kg	1600
beta-BHC	8270	ND	ug/Kg	1600
delta-BHC	8270	ND	ug/Kg	1600
gamma-BHC	8270	ND	ug/Kg	1600
bis(2-Chloroethyl)ether	8270	ND	ug/Kg	330
bis(2-Chloroethoxy)methane	8270	ND	ug/Kg	330
bis(2-Chloroisopropyl)ether	8270	ND	ug/Kg	330
bis(2-Ethylhexyl)phthalate	8270	ND	ug/Kg	330
4-Bromophenyl phenyl ether	8270	ND	ug/Kg	330
4-Chloroaniline	8270	ND	ug/Kg	330
2-Chloronaphthalene	8270	ND	ug/Kg	330
4-Chlorophenyl phenyl ether	8270	ND	ug/Kg	330
Chrysene	8270	ND	ug/Kg	330
4,4'-DDD	8270	ND	ug/Kg	1600
4,4'-DDE	8270	ND	ug/Kg	1600
4,4'-DDT	8270	ND	ug/Kg	1600
Dibenzo(a,h)anthracene	8270	ND	ug/Kg	330
Dibenzofuran	8270	ND	ug/Kg	330
Di-n-butylphthalate	8270	ND	ug/Kg	330
1,2-Dichlorobenzene	8270	ND	ug/Kg	330
1,3-Dichlorobenzene	8270	ND	ug/Kg	330
1,4-Dichlorobenzene	8270	ND	ug/Kg	330
3,3'-Dichlorobenzidine	8270	ND	ug/Kg	660
Dieldrin	8270	ND	ug/Kg	1600
Diethylphthalate	8270	ND	ug/Kg	330
Dimethyl phthalate	8270	ND	ug/Kg	330
2,4-Dinitrotoluene	8270	ND	ug/Kg	330
2,6-Dinitrotoluene	8270	ND	ug/Kg	330

ND: Not Detected at the Reporting Limit (RL), if a dilution factor is reported the R.L. must be multiplied by the dilution factor to obtain actual R.L.

Client Name: Groundwater Technology
Client Ref.: IRC/El Segundo 042501381/78

NET Job No.: 95.00790 Date Taken: 06/19/1995
Sample ID : FX-2 Date Reported: 07/05/1995
Lab No. : 80119 Sample Matrix: SOIL

ANALYTES/METHOD	METHOD	RESULTS/FLAGS	UNITS	R.L
Di-n-octyl phthalate	8270	ND	ug/Kg	330
Endrin	8270	ND	ug/Kg	1600
Endosulfan I	8270	ND	ug/Kg	1600
Endosulfan II	8270	ND	ug/Kg	1600
Endosulfan sulfate	8270	ND	ug/Kg	1600
Endrin aldehyde	8270	ND	ug/Kg	1600
Fluoranthene	8270	ND	ug/Kg	330
Fluorene	8270	ND	ug/Kg	330
Heptachlor	8270	ND	ug/Kg	1600
Heptachlor epoxide	8270	ND	ug/Kg	1600
Hexachlorobenzene	8270	ND	ug/Kg	330
Hexachlorobutadiene	8270	ND	ug/Kg	330
Hexachlorocyclopentadiene	8270	ND	ug/Kg	330
Hexachloroethane	8270	ND	ug/Kg	330
Indeno(1,2,3-cd)pyrene	8270	ND	ug/Kg	330
Isophorone	8270	ND	ug/Kg	330
2-Methylnaphthalene	8270	ND	ug/Kg	330
Naphthalene	8270	ND	ug/Kg	330
2-Nitroaniline	8270	ND	ug/Kg	1600
3-Nitroaniline	8270	ND	ug/Kg	1600
4-Nitroaniline	8270	ND	ug/Kg	1600
Nitrobenzene	8270	ND	ug/Kg	330
N-Nitroso-Di-N-propylamine	8270	ND	ug/Kg	330
N-Nitrosodiphenylamine	8270	ND	ug/Kg	330
Phenanthrene	8270	ND	ug/Kg	330
Pyrene	8270	ND	ug/Kg	330
1,2,4-Trichlorobenzene	8270	ND	ug/Kg	330
ACID EXTRACTABLES		--		
4-Chloro-3-methylphenol	8270	ND	ug/Kg	330
2-Chlorophenol	8270	ND	ug/Kg	330
2,4-Dichlorophenol	8270	ND	ug/Kg	330
2,4-Dimethylphenol	8270	ND	ug/Kg	330
2,4-Dinitrophenol	8270	ND	ug/Kg	1600
4,6-Dinitro-2-methylphenol	8270	ND	ug/Kg	1600
2-Nitrophenol	8270	ND	ug/Kg	1600
4-Nitrophenol	8270	ND	ug/Kg	1600
Pentachlorophenol	8270	ND	ug/Kg	1600
Phenol	8270	ND	ug/Kg	330
2,4,6-Trichlorophenol	8270	ND	ug/Kg	330
2-Methylphenol	8270	ND	ug/Kg	330
4-Methylphenol	8270	ND	ug/Kg	330
2,4,5-Trichlorophenol	8270	ND	ug/Kg	1600
SURROGATE RESULTS		--		
Nitrobenzene-d5	8270	39	% Rec.	
2-Fluorobiphenyl	8270	33	% Rec.	
p-Terphenyl-d14	8270	41	% Rec.	
Phenol-d5	8270	23	% Rec.	
2-Fluorophenol	8270	31	% Rec.	
2,4,6-Tribromophenol	8270	27	% Rec.	

ND: Not Detected at the Reporting Limit (RL), if a dilution factor is reported the R.L. must be multiplied by the dilution factor to obtain actual R.L.

NET NATIONAL ENVIRONMENTAL TESTING, INC.

CHAIN OF CUSTODY RECORD

COMPANY [illegible] Technology
ADDRESS 20000 Mariner Ave. Suite 300, Torrance, CA 90503
PHONE (310) 371-1394 FAX (310) 371-4782
PROJECT NAME/LOCATION IRC / El Segundo
PROJECT NUMBER 042501381 / 78
PROJECT MANAGER Brian [illegible]

REPORT TO: Brian [illegible]
INVOICE TO: Brian [illegible]
P.O. NO.
NET QUOTE NO.

SAMPLED BY: [illegible] (PRINT NAME) SCS (SIGNATURE)
(PRINT NAME) (SIGNATURE)

DATE	TIME	SAMPLE ID/DESCRIPTION	MATRIX	GRAB	COMP	HCl	NaOH	HNO_3	H_2SO_4	OTHER - ICE	EPA 1311 Corrosivity	EPA 7240 [illegible]	EPA [illegible] Semi-vol	TTLC CAM metals						COMMENTS
		[illegible]		✓							✓									
		[illegible]		✓							✓									
		[illegible]		✓							✓									
		[illegible]		✓							✓									
		[illegible]		✓							✓									
		FX 2		✓						✓		✓	✓	✓						* Rec'd [illegible]

To assist us in selecting the proper method
Is this work being conducted for regulatory compliance monitoring? Yes ___ No ___
Is this work being conducted for regulatory enforcement action? Yes ___ No ___
Which regulations apply: RCRA ___ NPDES Wastewater ___ UST ___ Drinking Water ___ Other ___ None ___

CONDITION OF SAMPLE: BOTTLES INTACT? YES / NO FIELD FILTERED? YES / NO
COC SEALS PRESENT AND INTACT? YES / NO VOLATILES FREE OF HEADSPACE? YES / NO
TEMPERATURE UPON RECEIPT: 24.3°C *
Bottles supplied by NET? YES / NO

SAMPLE REMAINDER DISPOSAL: RETURN SAMPLE REMAINDER TO CLIENT VIA ___
I REQUEST NET TO DISPOSE OF ALL SAMPLE REMAINDERS [signature] DATE 6/19/95

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	RELINQUISHED BY:	DATE	TIME	RECEIVED FOR NET BY:
[signature]	6/19/95		[signature]	[signature]	6/20/95	pm 12:10	[signature]

METHOD OF SHIPMENT

REMARKS:

PT 1 - ORIGINAL - WHITE PT 2 - NET PROJECT MANAGER - YELLOW PT 3 - CUSTOMER COPY - PINK

NATIONAL ENVIRONMENTAL TESTING, INC.

Burbank Division
700 South Flower Street
Burbank, CA 91502
Tel: (213) 849-6591
Fax: (818) 567-6477

DOHS Certificate Number: 1192

08/04/1995

Brian Dean
Groundwater Technology
20000/200 Mariner Drive
Torrance, CA 90503

Client Ref: 0425000173/6

Sample analysis for the project referred to above has been completed and results are located on attached pages.

Should you have questions regarding procedures or results, please feel welcome to contact our Client Services Representatives or the Laboratory Director.

Rick Schrynemeeckers
Division Manager

GD:st
Attachments:
Analytical Reports
Chain of Custody Document

Client No: 13931
NET Job No: 95.01010

Client Name: Groundwater Technology
Client Ref.: 0425000173/6

NET Job No.: 95.01010

Date Reported: 08/04/1995
Date Received: 07/27/1995

TEST PROCEDURE : Soil pH measured in water
REPORTING LIMIT : pH units
METHOD : 9045
MATRIX : SOIL

Lab No.	Sample Description	Date Taken	Results	Units	Date Analyzed
81433	Bottom-10	07/26/1995	2.9	pH unit	08/02/1995
81434	Bottom-10.75	07/26/1995	2.8	pH unit	08/02/1995
81435	Bottom-11.25	07/26/1995	4.0	pH unit	08/02/1995
81436	Bottom-12.75	07/26/1995	4.2	pH unit	08/02/1995
81437	Bottom-13	07/26/1995	4.0	pH unit	08/02/1995
81438	Bottom-13.25	07/26/1995	4.3	pH unit	08/02/1995

ND - Not detected at the reporting limit

NATIONAL ENVIRONMENTAL TESTING, INC.

CHAIN OF CUSTODY RECORD

COMPANY: [illegible] TECHNOLOGY INC.
ADDRESS: 20000 MARINER AVE. SUITE 200 TORRANCE, CA
PHONE: (310) 371-3714 FAX: (310) 371-4732
PROJECT NAME/LOCATION: ISC / EL SEGUNDO
PROJECT NUMBER: 04250.173/1.1
PROJECT MANAGER: DAVID DEAN

REPORT TO: DAVID
INVOICE TO: DAVID
P.O. NO.:
NET QUOTE NO.:

SAMPLED BY
(PRINT NAME) [illegible]
SIGNATURE [illegible]
(PRINT NAME)
SIGNATURE

DATE	TIME	SAMPLE ID/DESCRIPTION	MATRIX	GRAB	COMP	# and Type of Containers: HCl	NaOH	HNO_3	H_2SO_4	OTHER	ANALYSES: CH TPH 8015
7/26	9:45	[illegible] - 15		G						1	G
7/26	11:20	[illegible] - 10.75		G						1	G
7/26	11:40	[illegible] - 11.25		G						1	G
7/26	12:50	[illegible] - 12.75		G						1	G
7/26	2:00	[illegible] - 13		G						1	G
7/26	7:20	[illegible] - 13.25		G						1	G
7/26				TB						TB	

To assist us in selecting the proper method
Is this work being conducted for regulatory compliance monitoring? Yes ___ No ___
Is this work being conducted for regulatory enforcement action? Yes ___ No ___
Which regulations apply: RCRA ___ NPDES Wastewater ___ UST ___ Drinking Water ___ Other ___ None ___

COMMENTS

CONDITION OF SAMPLE: BOTTLES INTACT? YES / NO
FIELD FILTERED? YES / NO
COC SEALS PRESENT AND INTACT? YES / NO
VOLATILES FREE OF HEADSPACE? YES / NO
TEMPERATURE UPON RECEIPT: [illegible] °F
Bottles supplied by NET? YES / NO

SAMPLE REMAINDER DISPOSAL: RETURN SAMPLE REMAINDER TO CLIENT VIA ___
I REQUEST NET TO DISPOSE OF ALL SAMPLE REMAINDERS [illegible] DATE 7/27/95

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	RELINQUISHED BY:	DATE	TIME	RECEIVED FOR NET BY:
[illegible]	7/27/95	9:45			7/27/95	10:20	[illegible]

METHOD OF SHIPMENT
REMARKS:

PT 1 - ORIGINAL WHITE PT 2 - NET PROJECT MANAGER YELLOW PT 3 - CUSTOMER COPY PINK

Appendix A-3

ENVIRON

August 4, 2000

Via Telecopier and U.S. Mail

Ms. Cynthia Velez
Mr. Greg Takagi
International Rectifier Corporation
233 Kansas Street
El Segundo, California 90245

Re: Results of Subsurface Investigation
Previous Waste Line Acid Release
233 Kansas Street, El Segundo, California

Dear Cynthia and Greg:

INTRODUCTION

On May 8, 2000, ENVIRON International Corporation (ENVIRON) conducted a focused subsurface investigation in Building 233 located at 233 Kansas Street in El Segundo, California (Figure 1). The subsurface investigation was conducted in the immediate vicinity of a previous waste line acid release, which was described in Groundwater Technology's (GTI) report entitled *"Environmental Assessment Report – Waste Drain Line, International Rectifier Corporation, 233 Kansas Street, El Segundo, California,"* dated August 23, 1995 (the GTI Report). Currently, International Rectifier is in the process of renovating the portion of the building previously affected by the release for future use as office space. International Rectifier retained ENVIRON to review previous work and conduct additional investigation, as necessary, to evaluate whether there were potential health risks or threats to groundwater associated with potential contamination related to the previous acid release.

REVIEW OF GTI REPORT

Information contained in the GTI Report indicates that the previous release was discovered in an acid waste line within the building on May 9, 1995. Liquid flowing through the waste line consisted of dilute acid derived from semiconductor etching. According to information provided by International Rectifier and the GTI Report, it appears that the leak occurred at a relatively low rate over a period of time, and resulted in a hole beneath the floor approximately 12 to 18 inches wide and 9 feet deep at the leak site. At the time of discovery, the bottom of the hole was several feet in diameter and wet. The line was replaced, and no further leakage has been detected to date. Subsequent to the detected leak, GTI was retained to collect soil samples from the sidewalls and bottom of the hole. Access restrictions prevented GTI from advancing borings elsewhere in proximity to the leak site. GTI collected twelve soil samples from the sidewalls and bottom of the

hole. Soil samples were collected using hand-held equipment pushed into the base of the hole. Eleven soil samples were analyzed for corrosivity. In addition, one soil sample was analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and metals.

Detected soil pH ranged from 2.8 to 4.3 units in the samples analyzed. VOCs and SVOCs were not detected above applicable detection limits in the single soil sample analyzed. Several metals were detected at relatively low concentrations in the soil sample analyzed (i.e., barium at 490 mg/kg, chromium at 1.1 mg/kg, lead at 4.3 mg/kg, and zinc at 25 mg/kg). These concentrations are within the background range of metals typical for southern California, and well below applicable United States Environmental Protection Agency (USEPA) Region IX established preliminary remediation goals (PRGs) for the applicable metals (USEPA 1999).

ENVIRON's review of available information indicated that due to access constraints, GTI did not identify the lateral and vertical extent of soil affected by the prior acid release. Therefore, ENVIRON recommended advancing several new borings in the area to further evaluate subsurface soil conditions and to provide sufficient analytical information for the purpose of conducting a screening risk assessment.

SUBSURFACE INVESTIGATION

ENVIRON advanced four soil borings in the vicinity of the former acid release area (see Figure 2). One soil boring was advanced through the base of the existing hole to evaluate conditions below the bottom of the hole. Three borings were advanced in proximity to the hole (approximately 10 to 15 feet away from the hole) at approximately 120-degree intervals laterally around the hole to evaluate the potential for lateral migration of fluid from the release site. Due to GTI's past difficulty using hand-held drilling equipment, ENVIRON conducted the investigation using the direct-push (Geoprobe) technique.

Prior to initiation of the field investigation, ENVIRON conducted a site visit to mark boring locations and evaluate drilling equipment access. In addition, ENVIRON retained a private utility locator to identify the presence of subsurface utilities at the selected boring locations. The field investigation was conducted on May 8, 2000.

Borings were advanced using limited-access Geoprobe equipment. During boring advancement, soil samples were collected at five-foot intervals using an 18 inch-long split-barrel sampler lined with three brass tubes; the samples were visually logged in accordance with the Unified Soils Classification System ("USCS"). Collected soil samples were monitored using an Organic Vapor Meter (OVM) photoionization detector (PID) with a 10.6-electron-volt lamp calibrated against an isobutylene standard. Soil sample collection continued to the base of each boring. At borings SB-1 through SB-3, boring advancement met with refusal at approximately 14 to 16 feet below ground surface due to the presence of a gravel layer. Boring SB-4, advanced through the base of the existing hole, was terminated at approximately 25 feet below ground surface at which depth refusal was encountered. Ground water was not encountered in the Geoprobe borings.

Soil samples collected during the investigation were sealed, labeled in the field, and stored on ice in a closed container pending delivery to a fixed laboratory for chemical analysis. Chain-of-custody procedures were followed. Within 24 hours of collection, soil samples were delivered to a state-certified laboratory, Del Mar Analytical (Irvine, California) for chemical analysis.

Upon completion of soil sampling at each location, each boring was backfilled using granular bentonite and sealed at the ground surface. All equipment was cleaned prior to field use. In addition, soil-sampling equipment was cleaned after each use by washing in an Alconox solution, followed by a clean water rinse.

RESULTS

Subsurface Soil Conditions: Subsurface materials encountered during the investigation were relatively consistent at all boring locations. Subsurface materials consisted of interlayered silty sand and sand to approximately 14 feet below ground surface at which depth gravelly sand and gravel was encountered. According to the GTI report, ground water is encountered at depths greater than 80 feet below ground surface in the site vicinity.

Soil Analysis: Thirteen soil samples were submitted for analytical testing. All soil samples were tested for corrosivity using USEPA Method 9045C. Additionally, three soil samples were analyzed for metals using EPA Method 6010B and VOCs using USEPA Method 8260. Sampling results are summarized below. The analytical data reports are presented in Attachment A.

Table 1. Summary of Soil Analytical Results

Boring No.	Depth (feet)	VOCs (µg/kg)	Metals (mg/kg)	pH
SB-1	5	NA	NA	4.2
SB-1	10	NA	NA	3.6
SB-1	13	NA	NA	3.9
SB-1	14	NA	NA	4.0
SB-2	5	NA	NA	4.9
SB-2	10	NA	NA	3.9
SB-2	15	**ND**	Barium 19 Copper 3.3 Vanadium 3.7	3.6
SB-3	5	NA	NA	4.6
SB-3	10	NA	NA	4.1
SB-3	15	NA	NA	4.5
SB-4	15	**ND**	Barium 4.3	4.1
SB-4	20	NA	NA	3.7
SB-4	25	**ND**	Barium 1,700 Lead 19	4.0

Notes: ND: Not Detected above applicable detection limits. NA: Not Analyzed

The above results, taken in concert with the GTI data, do not indicate a significant deleterious impact to subsurface soils due to the previous release. No VOCs were detected above applicable detection limits in any of the samples tested. The pH results obtained during GTI's investigation ranged from 2.4 to 2.6 pH units in the sidewalls and base of the hole. Results for pH during ENVIRON's investigation ranged between 3.6 to 4.6 pH units. These pH levels do not pose a health concern to building occupants because there is no complete exposure pathway. Additionally, it is ENVIRON's opinion, given the depth to ground water, the buffering capacity of soils and ground water, and the fact that the waste line was repaired, that the measured pH concentrations do not present an ongoing risk to ground water.

Metals detected during the two investigations were limited to relatively low levels of lead, chromium, barium, vanadium, zinc, and copper. Barium was the only metal detected in all soil samples analyzed for metals. Metals concentrations were within the background range of metals concentration typical for southern California. However, as a precautionary measure, ENVIRON conducted a screening health risk assessment for each of the detected metals.

Screening Risk Assessment: Under the future planned use of the site, the soils of concern will be located beneath an office building. Because the soils will be covered, there will be no direct contact exposure pathway (i.e., incidental ingestion, dermal contact, and inhalation of windblown particulates) for future onsite commercial occupants. Also, since no VOCs were detected in soil, there will be no volatile inhalation exposure pathway for future indoor or outdoor onsite occupants. Thus there are no complete exposure pathways to the chemicals in soil. Accordingly, residual levels of metals in site soils are not expected to pose a cancer risk or noncancer hazard to future commercial populations. In order to be conservative, however, ENVIRON calculated potential cancer risks and noncancer hazards to a hypothetical residential population using methodology presented in the *Preliminary Endangerment Assessment (PEA) Guidance Manual* (the Guidance Manual) prepared by the California Environmental Protection Agency (Cal/EPA) in January 1994. This methodology is conservative since a residential scenario is considered to be protective of all humans, including sensitive groups, over a lifetime.

To calculate risks and hazards for a residential population, the Guidance Manual assumes that an individual is exposed to chemicals in soil through incidental ingestion, dermal contact, and inhalation of windblown soil particulates, 350 days a year for 30 years. As is discussed above, these conditions will not be encountered at the International Rectifier site. In addition, the PEA conservatively requires that the maximum concentration detected on-site be used in the calculation of risks and hazards. Nevertheless, using the standard default assumptions recommended by the PEA manual for a residential scenario and the maximum detected concentrations at the International Rectifier site, the cumulative multi-pathway cancer risk and noncancer hazard calculated for a hypothetical on-site resident are 7×10^{-7} and 0.7, respectively. Table 2 presents the risks and hazards for each chemical detected in soil. Since the cumulative cancer risk is below the target level of 1×10^{-6} and the cumulative non-cancer hazard is below the

target hazard of 1, no adverse health effects would be expected to any future populations (hypothetical or otherwise) due to residual concentrations of metals in soil.

Table 2. Hazard Indices for Individual Chemicals Detected in Soil

Metal	Risk	Hazard Index
Barium	NC	0.7
Chromium[a]	7×10^{-7}	0.00001
Copper	NC	0.001
Lead	NC	NA
Vanadium	NC	0.007
Zinc	NC	0.001
Total	7×10^{-7}	0.7

Notes:
NA = Not applicable. No hazard was calculated for lead, since the PEA manual does not require such a calculation unless the concentrations detected on-site exceed 130 mg/kg.
NC = Not a known carcinogen.
[a] It was assumed that total chromium is comprised of 1/7th hexavalent chromium (USEPA 1999).

As a further screening of the soils, the detected chemicals were also compared to USEPA Region 9 PRGs for a residential scenario (USEPA 1999). Unlike the PEA Guidance Manual, which calculates cancer risks and noncancer hazards from known concentrations in an environmental media (i.e., soil, air, water), the PRGs combine current USEPA toxicity values with "standard" exposure factors to estimate the concentration in an environmental media that will be protective of humans, including sensitive groups, over a lifetime. Like the PEA manual, however, residential PRGs are conservative values as they account for potential exposure through incidental ingestion of soil, dermal contact with soil, and inhalation of windblown soil particulates (conditions that will not be encountered at the International Rectifier site). These PRGs also assume that an individual is located on the site 350 days a year for 30 years. The PRGs correspond to a cancer risk of one-in-one million (10^{-6}) and a noncancer hazard index of one. Residential PRGs for the metals detected at the site are presented in Table 3.

Table 3. Sampling Results Compared to USEPA Region IX PRGs (Residential)

Metal	Detected Concentrations (mg/kg)	PRG (mg/kg)
Barium	4.3, 19, 490, 1,700	5,400
Chromium[a]	1.1	210
Copper	3.3	2,900
Lead	4.3, 19	400
Vanadium	3.7	550
Zinc	25	23,000

Notes:
[a] It was assumed that total chromium is comprised of 1/7th hexavalent chromium (USEPA 1999).

As shown in Table 3, metals concentrations present at the site are well below the Region 9 PRGs for residential soil. This means that even if the soils were to be exposed in the future, they would not be expected to cause an adverse human health impact to onsite populations even under a hypothetical future onsite residential land use scenario. Therefore, this comparison also confirms that the metals concentrations detected in soil during the two investigations do not represent a health risk to future occupants of the building. Additionally, it is ENVIRON's opinion, given the depth to ground water and the tendency of metal concentrations not to migrate rapidly through soil, the low metal concentrations do not present an ongoing risk to ground water.

CONCLUSION

Based on our review of the GTI Report, the results of the additional sampling conducted by ENVIRON, and the results of the screening risk assessment, it is ENVIRON's professional opinion that the conditions at the site of the former waste line release do not present a risk to human health, safety or the environment and that no further work is necessary to address the site. More specifically, ENVIRON has concluded that the low pH concentrations and the low levels of metals detected at the site do not present a risk to occupants of the building at the site and do not present an ongoing risk to groundwater.

We appreciate the opportunity to be of service to you and look forward to working with you in the future. If you have questions regarding any of the information in this letter report, please call Carol Serlin at 949-798-3660.

Very truly yours,

Carol L. Serlin, R.G.
Manager, Geosciences

George O. Linkletter, Ph.D.
Principal

cc: Lesley Kleveter, Esq., International Rectifier
Sandra Ikuta, Esq., O'Melveny & Myers

References:

U.S. Environmental Protection Agency (USEPA). 1999. Region IX Preliminary Remediation Goals (PRGs). San Francisco, California.

0 1/2 1 MILE

2000 0 2000 4000 FEET

SOURCE U.S.G.S. 7.5 minute series (topographic)
Venice Quadrangle, CA, 1964, photorevised, 1981

CONTOUR INTERVAL 40 FEET
DOTTED LINES REPRESENT 10-FOOT CONTOURS
NATIONAL GEODETIC VERTICAL DATUM OF 1929
SCALE 1:24000

ENVIRON

Site Vicinity Map

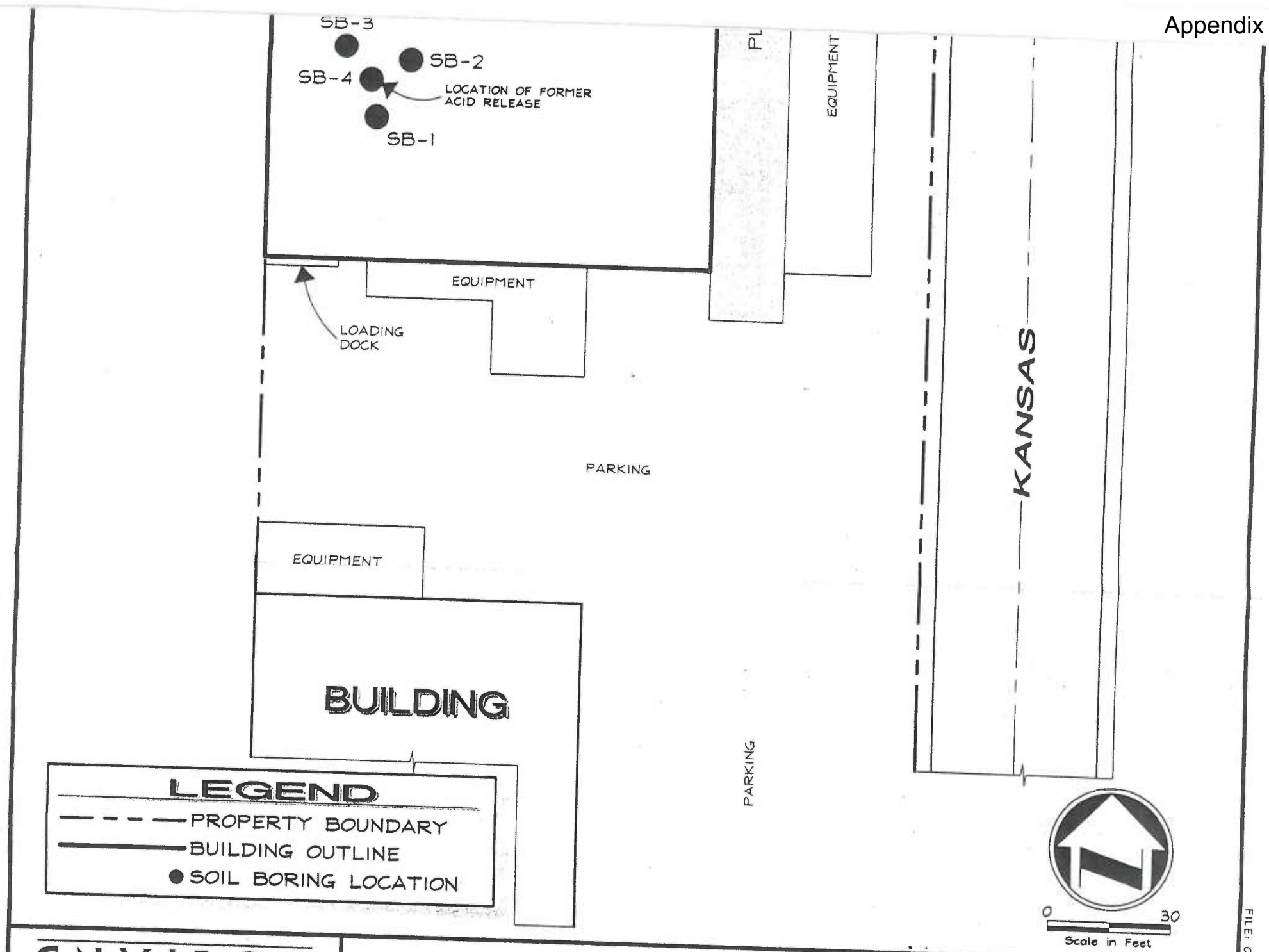
233 Kansas Street
El Segundo, California

Figure 1

Drafter: JJC Date: 5/15/00 Contract Number: 04-8511A Approved: Revised:

FILE: 04851IA\8511AFOI

FIGURES



ENVIRON

DRAFTED BY: LJC | DATE: 6/1/00

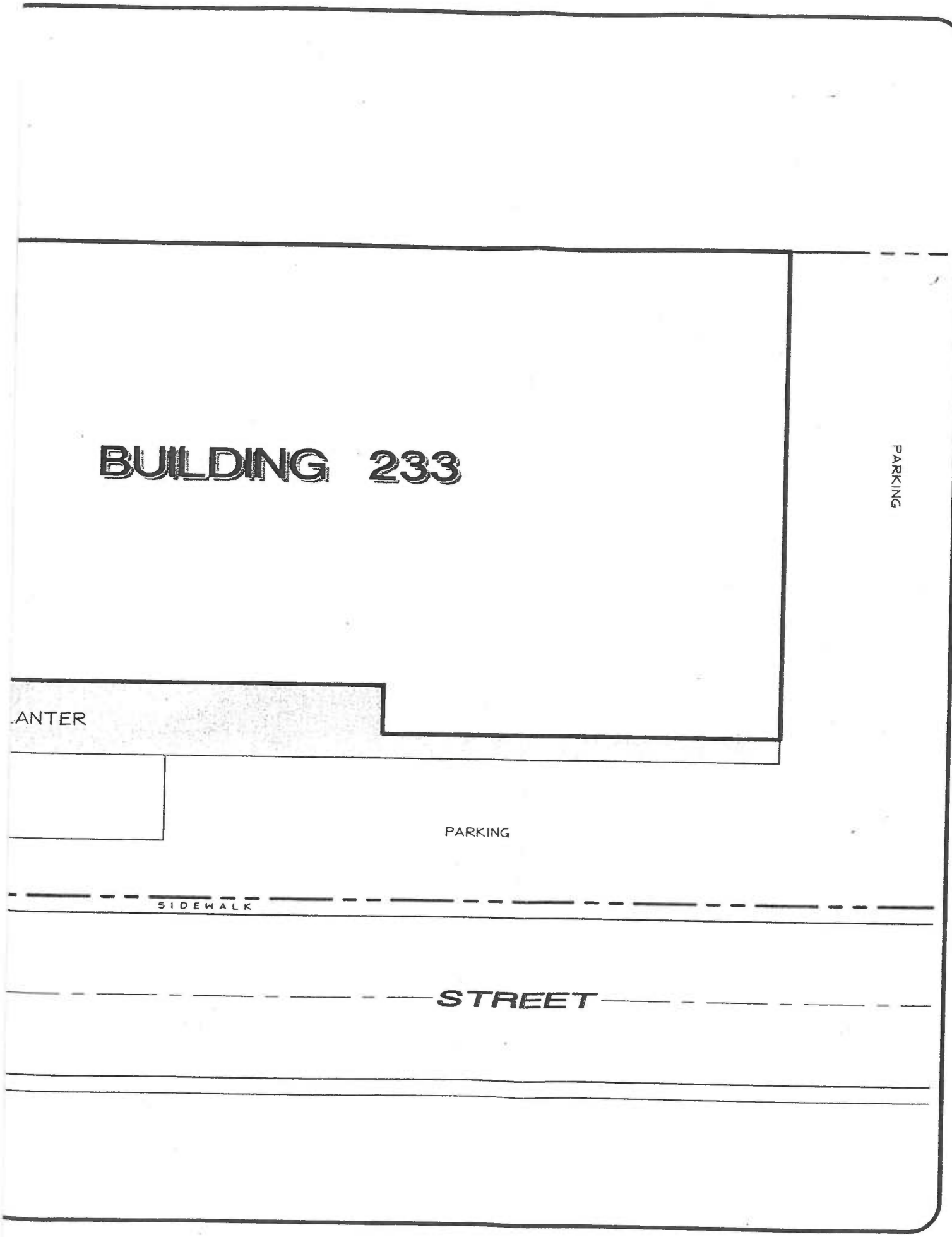
Site Plan

International Rectifier

233 Kansas Street, El Segundo, California

Figure 2

FILE: 04851IA\851IAF


BUILDING 233
PARKING
ANTER
PARKING
SIDEWALK
STREET

ATTACHMENT A

Del Mar Laboratory Analytical Report

Del Mar Analytical

2852 Alton Ave., Irvine, CA 92606 (949) 261-1022 FAX (949) 261-1228
1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (909) 370-1046
16525 Sherman Way, Suite C-11, Van Nuys, CA 92406 (818) 779-1844 FAX (818) 779-1843
9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-9596 FAX (858) 505-9689
9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851

Redd 5/20/00 ✓

LABORATORY REPORT

Prepared For: Environ-Irvine
2010 Main Street, 9th Floor
Irvine, CA 92614

Attention Carol Serlin
Project International Rectifier
04-8511A

Sampled: 05/08/00
Received: 05/09/00
Reported: 05/19/00

This laboratory report is confidential and is intended for the sole use of Del Mar Analytical and its client. This entire report was reviewed and approved for release.

CA ELAP Certificate #1197
AZ DHS License #AZ0428

Del Mar Analytical, Irvine
Patty Mata
Project Manager

Del Mar Analytical

2852 Alton Ave., Irvine, CA 92606 (949) 261-1022 FAX (949) 261-1228
1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (909) 370-1046
16525 Sherman Way, Suite C-11, Van Nuys, CA 92406 (818) 779-1844 FAX (818) 779-1843
9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-9596 FAX (858) 505-9689
9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851

Environ-Irvine
2010 Main Street, 9th Floor
Irvine, CA 92614
Attention: Carol Serlin

Client Project ID: International Rectifier 04-8511A
Report Number: IJE0240

Sampled: 05/08/00
Received: 05/09/00

VOLATILE ORGANICS by GC/MS (EPA 5030B/8260B)

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
			ug/kg	ug/kg				
Sample ID: IJE0240-07 (SB-2-15 - Soil)								
Benzene	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
Bromobenzene	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
Bromochloromethane	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
Bromodichloromethane	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
Bromoform	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
Bromomethane	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
n-Butylbenzene	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
sec-Butylbenzene	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
tert-Butylbenzene	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
Carbon tetrachloride	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
Chlorobenzene	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
Chloroethane	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
Chloroform	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
Chloromethane	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
2-Chlorotoluene	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
4-Chlorotoluene	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
Dibromochloromethane	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
1,2-Dibromo-3-chloropropane	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
1,2-Dibromoethane (EDB)	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
Dibromomethane	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
1,2-Dichlorobenzene	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
1,3-Dichlorobenzene	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
1,4-Dichlorobenzene	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
Dichlorodifluoromethane	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
1,1-Dichloroethane	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
1,2-Dichloroethane	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
1,1-Dichloroethene	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
cis-1,2-Dichloroethene	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
trans-1,2-Dichloroethene	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
1,2-Dichloropropane	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
1,3-Dichloropropane	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
2,2-Dichloropropane	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
1,1-Dichloropropene	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
cis-1,3-Dichloropropene	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
trans-1,3-Dichloropropene	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
Ethylbenzene	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
Hexachlorobutadiene	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
Isopropylbenzene	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
p-Isopropyltoluene	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
Methylene chloride	EPA 8260B	I0E1604	20	ND	1	5/16/00	5/16/00	
Naphthalene	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
n-Propylbenzene	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	

Del Mar Analytical, Irvine
Patty Mata
Project Manager

Del Mar Analytical

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Environ-Irvine
2010 Main Street, 9th Floor
Irvine, CA 92614
Attention: Carol Serlin

Client Project ID: International Rectifier 04-8511A
Report Number: IJE0240

Sampled: 05/08/00
Received: 05/09/00

VOLATILE ORGANICS by GC/MS (EPA 5030B/8260B)

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
			ug/kg	ug/kg				
Sample ID: IJE0240-07 (SB-2-15 - Soil)								
Styrene	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
1,1,1,2-Tetrachloroethane	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
1,1,2,2-Tetrachloroethane	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
Tetrachloroethene	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
Toluene	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
1,2,3-Trichlorobenzene	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
1,2,4-Trichlorobenzene	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
1,1,1-Trichloroethane	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
1,1,2-Trichloroethane	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
Trichloroethene	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
Trichlorofluoromethane	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
1,2,3-Trichloropropane	EPA 8260B	I0E1604	10	ND	1	5/16/00	5/16/00	
1,2,4-Trimethylbenzene	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
1,3,5-Trimethylbenzene	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
Vinyl chloride	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
o-Xylene	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
m,p-Xylenes	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
Surrogate: Dibromofluoromethane (85-125%)				*106 %*				
Surrogate: Toluene-d8 (80-120%)				*109 %*				
Surrogate: 4-Bromofluorobenzene (80-120%)				*112 %*				

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Environ-Irvine
2010 Main Street, 9th Floor
Irvine, CA 92614
Attention: Carol Serlin

Client Project ID: International Rectifier 04-8511A
Report Number: IJE0240

Sampled: 05/08/00
Received: 05/09/00

VOLATILE ORGANICS by GC/MS (EPA 5030B/8260B)

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
			ug/kg	ug/kg				
Sample ID: IJE0240-11 (SB-4-15 - Soil)								
Benzene	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
Bromobenzene	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
Bromochloromethane	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
Bromodichloromethane	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
Bromoform	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
Bromomethane	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
n-Butylbenzene	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
sec-Butylbenzene	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
tert-Butylbenzene	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
Carbon tetrachloride	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
Chlorobenzene	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
Chloroethane	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
Chloroform	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
Chloromethane	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
2-Chlorotoluene	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
4-Chlorotoluene	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
Dibromochloromethane	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
1,2-Dibromo-3-chloropropane	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
1,2-Dibromoethane (EDB)	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
Dibromomethane	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
1,2-Dichlorobenzene	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
1,3-Dichlorobenzene	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
1,4-Dichlorobenzene	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
Dichlorodifluoromethane	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
1,1-Dichloroethane	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
1,2-Dichloroethane	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
1,1-Dichloroethene	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
cis-1,2-Dichloroethene	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
trans-1,2-Dichloroethene	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
1,2-Dichloropropane	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
1,3-Dichloropropane	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
2,2-Dichloropropane	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
1,1-Dichloropropene	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
cis-1,3-Dichloropropene	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
trans-1,3-Dichloropropene	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
Ethylbenzene	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
Hexachlorobutadiene	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
Isopropylbenzene	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
p-Isopropyltoluene	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
Methylene chloride	EPA 8260B	I0E1604	20	ND	1	5/16/00	5/16/00	
Naphthalene	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
n-Propylbenzene	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	

Del Mar Analytical, Irvine
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Project Manager

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Environ-Irvine
2010 Main Street, 9th Floor
Irvine, CA 92614
Attention: Carol Serlin

Client Project ID: International Rectifier 04-8511A
Report Number: IJE0240

Sampled: 05/08/00
Received: 05/09/00

VOLATILE ORGANICS by GC/MS (EPA 5030B/8260B)

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
			ug/kg	ug/kg				
Sample ID: IJE0240-11 (SB-4-15 - Soil)								
Styrene	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
1,1,1,2-Tetrachloroethane	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
1,1,2,2-Tetrachloroethane	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
Tetrachloroethene	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
Toluene	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
1,2,3-Trichlorobenzene	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
1,2,4-Trichlorobenzene	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
1,1,1-Trichloroethane	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
1,1,2-Trichloroethane	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
Trichloroethene	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
Trichlorofluoromethane	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
1,2,3-Trichloropropane	EPA 8260B	I0E1604	10	ND	1	5/16/00	5/16/00	
1,2,4-Trimethylbenzene	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
1,3,5-Trimethylbenzene	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
Vinyl chloride	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
o-Xylene	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
m,p-Xylenes	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
Surrogate: Dibromofluoromethane (85-125%)				*108 %*				
Surrogate: Toluene-d8 (80-120%)				*110 %*				
Surrogate: 4-Bromofluorobenzene (80-120%)				*116 %*				

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Project Manager

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Environ-Irvine
2010 Main Street, 9th Floor
Irvine, CA 92614
Attention: Carol Serlin

Client Project ID: International Rectifier 04-8511A
Report Number: IJE0240

Sampled: 05/08/00
Received: 05/09/00

VOLATILE ORGANICS by GC/MS (EPA 5030B/8260B)

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
			ug/kg	ug/kg				
Sample ID: IJE0240-12 (SB-4-25 - Soil)								
Benzene	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
Bromobenzene	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
Bromochloromethane	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
Bromodichloromethane	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
Bromoform	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
Bromomethane	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
n-Butylbenzene	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
sec-Butylbenzene	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
tert-Butylbenzene	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
Carbon tetrachloride	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
Chlorobenzene	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
Chloroethane	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
Chloroform	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
Chloromethane	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
2-Chlorotoluene	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
4-Chlorotoluene	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
Dibromochloromethane	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
1,2-Dibromo-3-chloropropane	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
1,2-Dibromoethane (EDB)	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
Dibromomethane	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
1,2-Dichlorobenzene	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
1,3-Dichlorobenzene	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
1,4-Dichlorobenzene	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
Dichlorodifluoromethane	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
1,1-Dichloroethane	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
1,2-Dichloroethane	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
1,1-Dichloroethene	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
cis-1,2-Dichloroethene	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
trans-1,2-Dichloroethene	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
1,2-Dichloropropane	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
1,3-Dichloropropane	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
2,2-Dichloropropane	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
1,1-Dichloropropene	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
cis-1,3-Dichloropropene	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
trans-1,3-Dichloropropene	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
Ethylbenzene	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
Hexachlorobutadiene	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
Isopropylbenzene	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
p-Isopropyltoluene	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
Methylene chloride	EPA 8260B	I0E1604	20	ND	1	5/16/00	5/16/00	
Naphthalene	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
n-Propylbenzene	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	

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Environ-Irvine
2010 Main Street, 9th Floor
Irvine, CA 92614
Attention: Carol Serlin

Client Project ID: International Rectifier 04-8511A
Report Number: IJE0240

Sampled: 05/08/00
Received: 05/09/00

VOLATILE ORGANICS by GC/MS (EPA 5030B/8260B)

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
			ug/kg	ug/kg				
Sample ID: IJE0240-12 (SB-4-25 - Soil)								
Styrene	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
1,1,1,2-Tetrachloroethane	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
1,1,2,2-Tetrachloroethane	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
Tetrachloroethene	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
Toluene	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
1,2,3-Trichlorobenzene	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
1,2,4-Trichlorobenzene	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
1,1,1-Trichloroethane	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
1,1,2-Trichloroethane	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
Trichloroethene	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
Trichlorofluoromethane	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
1,2,3-Trichloropropane	EPA 8260B	I0E1604	10	ND	1	5/16/00	5/16/00	
1,2,4-Trimethylbenzene	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
1,3,5-Trimethylbenzene	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
Vinyl chloride	EPA 8260B	I0E1604	5.0	ND	1	5/16/00	5/16/00	
o-Xylene	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
m,p-Xylenes	EPA 8260B	I0E1604	2.0	ND	1	5/16/00	5/16/00	
Surrogate: Dibromofluoromethane (85-125%)				*108 %*				
Surrogate: Toluene-d8 (80-120%)				*110 %*				
Surrogate: 4-Bromofluorobenzene (80-120%)				*115 %*				

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Environ-Irvine
2010 Main Street, 9th Floor
Irvine, CA 92614
Attention: Carol Serlin

Client Project ID: International Rectifier 04-8511A
Report Number: IJE0240

Sampled: 05/08/00
Received: 05/09/00

METALS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
			mg/kg	mg/kg				
Sample ID: IJE0240-07 (SB-2-15 - Soil)								**RL-3**
Antimony	EPA 6010B	I0E1041	20	ND	2	5/10/00	5/11/00	
Arsenic	EPA 6010B	I0E1041	4.0	ND	2	5/10/00	5/11/00	
Barium	EPA 6010B	I0E1041	2.0	**19**	2	5/10/00	5/11/00	
Beryllium	EPA 6010B	I0E1041	1.0	ND	2	5/10/00	5/11/00	
Cadmium	EPA 6010B	I0E1041	1.0	ND	2	5/10/00	5/11/00	
Chromium	EPA 6010B	I0E1041	2.0	ND	2	5/10/00	5/11/00	
Cobalt	EPA 6010B	I0E1041	2.0	ND	2	5/10/00	5/11/00	
Copper	EPA 6010B	I0E1041	2.0	**3.3**	2	5/10/00	5/11/00	
Lead	EPA 6010B	I0E1041	4.0	ND	2	5/10/00	5/11/00	
Mercury	EPA 7471A	I0E1105	0.020	ND	1	5/11/00	5/11/00	
Molybdenum	EPA 6010B	I0E1041	4.0	ND	2	5/10/00	5/11/00	
Nickel	EPA 6010B	I0E1041	2.0	ND	2	5/10/00	5/11/00	
Selenium	EPA 6010B	I0E1041	4.0	ND	2	5/10/00	5/11/00	
Silver	EPA 6010B	I0E1041	2.0	ND	2	5/10/00	5/11/00	
Thallium	EPA 6010B	I0E1041	20	ND	2	5/10/00	5/11/00	
Vanadium	EPA 6010B	I0E1041	2.0	**3.7**	2	5/10/00	5/11/00	
Zinc	EPA 6010B	I0E1041	10	ND	2	5/10/00	5/11/00	
Sample ID: IJE0240-11 (SB-4-15 - Soil)								
Antimony	EPA 6010B	I0E1041	10	ND	1	5/10/00	5/10/00	
Arsenic	EPA 6010B	I0E1041	2.0	ND	1	5/10/00	5/10/00	
Barium	EPA 6010B	I0E1041	1.0	**4.3**	1	5/10/00	5/10/00	
Beryllium	EPA 6010B	I0E1041	0.50	ND	1	5/10/00	5/10/00	
Cadmium	EPA 6010B	I0E1041	0.50	ND	1	5/10/00	5/10/00	
Chromium	EPA 6010B	I0E1041	1.0	ND	1	5/10/00	5/10/00	
Cobalt	EPA 6010B	I0E1041	1.0	ND	1	5/10/00	5/10/00	
Copper	EPA 6010B	I0E1041	1.0	ND	1	5/10/00	5/10/00	
Lead	EPA 6010B	I0E1041	2.0	ND	1	5/10/00	5/10/00	
Mercury	EPA 7471A	I0E1105	0.020	ND	1	5/11/00	5/11/00	
Molybdenum	EPA 6010B	I0E1041	2.0	ND	1	5/10/00	5/10/00	
Nickel	EPA 6010B	I0E1041	1.0	ND	1	5/10/00	5/10/00	
Selenium	EPA 6010B	I0E1041	2.0	ND	1	5/10/00	5/10/00	
Silver	EPA 6010B	I0E1041	1.0	ND	1	5/10/00	5/10/00	
Thallium	EPA 6010B	I0E1041	10	ND	1	5/10/00	5/10/00	
Vanadium	EPA 6010B	I0E1041	1.0	ND	1	5/10/00	5/10/00	
Zinc	EPA 6010B	I0E1041	5.0	ND	1	5/10/00	5/10/00	

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Environ-Irvine
2010 Main Street, 9th Floor
Irvine, CA 92614
Attention: Carol Serlin

Client Project ID: International Rectifier
04-8511A
Report Number: IJE0240

Sampled: 05/08/00
Received: 05/09/00

METALS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
			mg/kg	mg/kg				
Sample ID: IJE0240-12 (SB-4-25 - Soil)								
Antimony	EPA 6010B	I0E1041	10	ND	1	5/10/00	5/10/00	
Arsenic	EPA 6010B	I0E1041	2.0	ND	1	5/10/00	5/10/00	
Barium	EPA 6010B	I0E1041	2.0	**1700**	2	5/10/00	5/10/00	
Beryllium	EPA 6010B	I0E1041	0.50	ND	1	5/10/00	5/10/00	
Cadmium	EPA 6010B	I0E1041	0.50	ND	1	5/10/00	5/10/00	
Chromium	EPA 6010B	I0E1041	1.0	ND	1	5/10/00	5/10/00	
Cobalt	EPA 6010B	I0E1041	1.0	ND	1	5/10/00	5/10/00	
Copper	EPA 6010B	I0E1041	1.0	ND	1	5/10/00	5/10/00	
Lead	EPA 6010B	I0E1041	2.0	**19**	1	5/10/00	5/10/00	
Mercury	EPA 7471A	I0E1105	0.020	ND	1	5/11/00	5/11/00	
Molybdenum	EPA 6010B	I0E1041	2.0	ND	1	5/10/00	5/10/00	
Nickel	EPA 6010B	I0E1041	1.0	ND	1	5/10/00	5/10/00	
Selenium	EPA 6010B	I0E1041	2.0	ND	1	5/10/00	5/10/00	
Silver	EPA 6010B	I0E1041	1.0	ND	1	5/10/00	5/10/00	
Thallium	EPA 6010B	I0E1041	10	ND	1	5/10/00	5/10/00	
Vanadium	EPA 6010B	I0E1041	1.0	ND	1	5/10/00	5/10/00	
Zinc	EPA 6010B	I0E1041	5.0	ND	1	5/10/00	5/10/00	

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Attention: Carol Serlin

Client Project ID: International Rectifier 04-8511A
Report Number: IJE0240

Sampled: 05/08/00
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INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
			pH Units	pH Units				
Sample ID: IJE0240-01 (SB-1-5 - Soil)								
pH	EPA 9045C	I0E0933	NA	**4.2**	1	5/9/00	5/9/00	
Sample ID: IJE0240-02 (SB-1-10 - Soil)								
pH	EPA 9045C	I0E0933	NA	**3.6**	1	5/9/00	5/9/00	
Sample ID: IJE0240-03 (SB-1-13 - Soil)								
pH	EPA 9045C	I0E0933	NA	**3.9**	1	5/9/00	5/9/00	
Sample ID: IJE0240-04 (SB-1-14 - Soil)								
pH	EPA 9045C	I0E0933	NA	**4.0**	1	5/9/00	5/9/00	
Sample ID: IJE0240-05 (SB-2-5 - Soil)								
pH	EPA 9045C	I0E0933	NA	**4.9**	1	5/9/00	5/9/00	
Sample ID: IJE0240-06 (SB-2-10 - Soil)								
pH	EPA 9045C	I0E0933	NA	**3.9**	1	5/9/00	5/9/00	
Sample ID: IJE0240-07 (SB-2-15 - Soil)								
pH	EPA 9045C	I0E0933	NA	**3.6**	1	5/9/00	5/9/00	
Sample ID: IJE0240-08 (SB-3-5 - Soil)								
pH	EPA 9045C	I0E0933	NA	**4.6**	1	5/9/00	5/9/00	

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INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
			pH Units	pH Units				
Sample ID: IJE0240-09 (SB-3-10 - Soil)								
pH	EPA 9045C	I0E0933	NA	**4.1**	1	5/9/00	5/9/00	
Sample ID: IJE0240-10 (SB-3-15 - Soil)								
pH	EPA 9045C	I0E0933	NA	**4.5**	1	5/9/00	5/9/00	
Sample ID: IJE0240-11 (SB-4-15 - Soil)								
pH	EPA 9045C	I0E0933	NA	**4.1**	1	5/9/00	5/9/00	
Sample ID: IJE0240-12 (SB-4-25 - Soil)								
pH	EPA 9045C	I0E0933	NA	**3.7**	1	5/9/00	5/9/00	
Sample ID: IJE0240-13 (SB-4-20 - Soil)								
pH	EPA 9045C	I0E0933	NA	**4.0**	1	5/9/00	5/9/00	

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Client Project ID: International Rectifier 04-8511A
Report Number: IJE0240

Sampled: 05/08/00
Received: 05/09/00

METHOD BLANK/QC DATA

VOLATILE ORGANICS by GC/MS (EPA 5030B/8260B)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: I0E1604 Extracted: 05/16/00										
Blank Analyzed: 05/16/00 (I0E1604-BLK1)										
Benzene	ND	2.0	ug/kg							
Bromobenzene	ND	5.0	ug/kg							
Bromochloromethane	ND	5.0	ug/kg							
Bromodichloromethane	ND	2.0	ug/kg							
Bromoform	ND	5.0	ug/kg							
Bromomethane	ND	5.0	ug/kg							
n-Butylbenzene	ND	5.0	ug/kg							
sec-Butylbenzene	ND	5.0	ug/kg							
tert-Butylbenzene	ND	5.0	ug/kg							
Carbon tetrachloride	ND	5.0	ug/kg							
Chlorobenzene	ND	2.0	ug/kg							
Chloroethane	ND	5.0	ug/kg							
Chloroform	ND	2.0	ug/kg							
Chloromethane	ND	5.0	ug/kg							
2-Chlorotoluene	ND	5.0	ug/kg							
4-Chlorotoluene	ND	5.0	ug/kg							
Dibromochloromethane	ND	2.0	ug/kg							
1,2-Dibromo-3-chloropropane	ND	5.0	ug/kg							
1,2-Dibromoethane (EDB)	ND	2.0	ug/kg							
Dibromomethane	ND	2.0	ug/kg							
1,2-Dichlorobenzene	ND	2.0	ug/kg							
1,3-Dichlorobenzene	ND	2.0	ug/kg							
1,4-Dichlorobenzene	ND	2.0	ug/kg							
Dichlorodifluoromethane	ND	5.0	ug/kg							
1,1-Dichloroethane	ND	2.0	ug/kg							
1,2-Dichloroethane	ND	2.0	ug/kg							
1,1-Dichloroethene	ND	5.0	ug/kg							
cis-1,2-Dichloroethene	ND	2.0	ug/kg							
trans-1,2-Dichloroethene	ND	2.0	ug/kg							
1,2-Dichloropropane	ND	2.0	ug/kg							
1,3-Dichloropropane	ND	2.0	ug/kg							
2,2-Dichloropropane	ND	2.0	ug/kg							
1,1-Dichloropropene	ND	2.0	ug/kg							
cis-1,3-Dichloropropene	ND	2.0	ug/kg							
trans-1,3-Dichloropropene	ND	2.0	ug/kg							
Ethylbenzene	ND	2.0	ug/kg							

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METHOD BLANK/QC DATA

VOLATILE ORGANICS by GC/MS (EPA 5030B/8260B)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: I0E1604 Extracted: 05/16/00										
Blank Analyzed: 05/16/00 (I0E1604-BLK1)										
Hexachlorobutadiene	ND	5.0	ug/kg							
Isopropylbenzene	ND	2.0	ug/kg							
p-Isopropyltoluene	ND	2.0	ug/kg							
Methylene chloride	ND	20	ug/kg							
Naphthalene	ND	5.0	ug/kg							
n-Propylbenzene	ND	2.0	ug/kg							
Styrene	ND	2.0	ug/kg							
1,1,1,2-Tetrachloroethane	ND	5.0	ug/kg							
1,1,2,2-Tetrachloroethane	ND	2.0	ug/kg							
Tetrachloroethene	ND	2.0	ug/kg							
Toluene	ND	2.0	ug/kg							
1,2,3-Trichlorobenzene	ND	5.0	ug/kg							
1,2,4-Trichlorobenzene	ND	5.0	ug/kg							
1,1,1-Trichloroethane	ND	2.0	ug/kg							
1,1,2-Trichloroethane	ND	2.0	ug/kg							
Trichloroethene	ND	2.0	ug/kg							
Trichlorofluoromethane	ND	5.0	ug/kg							
1,2,3-Trichloropropane	ND	10	ug/kg							
1,2,4-Trimethylbenzene	ND	2.0	ug/kg							
1,3,5-Trimethylbenzene	ND	2.0	ug/kg							
Vinyl chloride	ND	5.0	ug/kg							
o-Xylene	ND	2.0	ug/kg							
m,p-Xylenes	ND	2.0	ug/kg							
Surrogate: Dibromofluoromethane	*52.4*		*ug/kg*	*50.0*		*105*	*85-125*			
Surrogate: Toluene-d8	*53.7*		*ug/kg*	*50.0*		*107*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*57.0*		*ug/kg*	*50.0*		*114*	*80-120*			
LCS Analyzed: 05/16/00 (I0E1604-BS1)										
Benzene	48.0	2.0	ug/kg	50.0		96.0	65-130			
Bromobenzene	49.0	5.0	ug/kg	50.0		98.0	60-135			
Bromochloromethane	48.1	5.0	ug/kg	50.0		96.2	65-135			
Bromodichloromethane	55.1	2.0	ug/kg	50.0		110	30-135			
Bromoform	55.1	5.0	ug/kg	50.0		110	60-140			
Bromomethane	51.8	5.0	ug/kg	50.0		104	50-160			
n-Butylbenzene	48.6	5.0	ug/kg	50.0		97.2	65-125			
sec-Butylbenzene	47.4	5.0	ug/kg	50.0		94.8	70-135			

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METHOD BLANK/QC DATA

VOLATILE ORGANICS by GC/MS (EPA 5030B/8260B)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: I0E1604 Extracted: 05/16/00										
LCS Analyzed: 05/16/00 (I0E1604-BS1)										
tert-Butylbenzene	45.2	5.0	ug/kg	50.0		90.4	70-130			
Carbon tetrachloride	55.0	5.0	ug/kg	50.0		110	70-140			
Chlorobenzene	49.7	2.0	ug/kg	50.0		99.4	75-125			
Chloroethane	48.7	5.0	ug/kg	50.0		97.4	50-150			
Chloroform	51.5	2.0	ug/kg	50.0		103	35-135			
Chloromethane	50.4	5.0	ug/kg	50.0		101	35-160			
2-Chlorotoluene	46.9	5.0	ug/kg	50.0		93.8	70-135			
4-Chlorotoluene	48.4	5.0	ug/kg	50.0		96.8	75-135			
Dibromochloromethane	53.3	2.0	ug/kg	50.0		107	35-135			
1,2-Dibromo-3-chloropropane	47.7	5.0	ug/kg	50.0		95.4	50-155			
1,2-Dibromoethane (EDB)	52.0	2.0	ug/kg	50.0		104	70-130			
Dibromomethane	55.0	2.0	ug/kg	50.0		110	65-130			
1,2-Dichlorobenzene	49.7	2.0	ug/kg	50.0		99.4	70-125			
1,3-Dichlorobenzene	49.1	2.0	ug/kg	50.0		98.2	70-125			
1,4-Dichlorobenzene	49.1	2.0	ug/kg	50.0		98.2	70-135			
Dichlorodifluoromethane	43.9	5.0	ug/kg	50.0		87.8	10-185			
1,1-Dichloroethane	48.8	2.0	ug/kg	50.0		97.6	60-140			
1,2-Dichloroethane	56.1	2.0	ug/kg	50.0		112	55-135			
1,1-Dichloroethene	48.8	5.0	ug/kg	50.0		97.6	55-145			
cis-1,2-Dichloroethene	47.3	2.0	ug/kg	50.0		94.6	60-125			
trans-1,2-Dichloroethene	50.0	2.0	ug/kg	50.0		100	70-145			
1,2-Dichloropropane	50.1	2.0	ug/kg	50.0		100	65-130			
1,3-Dichloropropane	50.1	2.0	ug/kg	50.0		100	65-130			
2,2-Dichloropropane	51.9	2.0	ug/kg	50.0		104	60-135			
1,1-Dichloropropene	52.6	2.0	ug/kg	50.0		105	65-130			
cis-1,3-Dichloropropene	50.2	2.0	ug/kg	50.0		100	60-125			
trans-1,3-Dichloropropene	53.3	2.0	ug/kg	50.0		107	50-130			
Ethylbenzene	52.7	2.0	ug/kg	50.0		105	70-125			
Hexachlorobutadiene	46.3	5.0	ug/kg	50.0		92.6	60-125			
Isopropylbenzene	46.1	2.0	ug/kg	50.0		92.2	70-135			
p-Isopropyltoluene	44.2	2.0	ug/kg	50.0		88.4	65-130			
Methylene chloride	46.0	20	ug/kg	50.0		92.0	60-140			
Naphthalene	46.0	5.0	ug/kg	50.0		92.0	45-155			
n-Propylbenzene	47.8	2.0	ug/kg	50.0		95.6	75-135			
Styrene	54.3	2.0	ug/kg	50.0		109	70-130			
1,1,1,2-Tetrachloroethane	52.7	5.0	ug/kg	50.0		105	70-130			

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Environ-Irvine
2010 Main Street, 9th Floor
Irvine, CA 92614
Attention: Carol Serlin

Client Project ID: International Rectifier 04-8511A
Report Number: IJE0240

Sampled: 05/08/00
Received: 05/09/00

METHOD BLANK/QC DATA

VOLATILE ORGANICS by GC/MS (EPA 5030B/8260B)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: I0E1604 Extracted: 05/16/00										
LCS Analyzed: 05/16/00 (I0E1604-BS1)										
1,1,2,2-Tetrachloroethane	45.3	2.0	ug/kg	50.0		90.6	60-140			
Tetrachloroethene	52.2	2.0	ug/kg	50.0		104	65-130			
Toluene	52.6	2.0	ug/kg	50.0		105	70-125			
1,2,3-Trichlorobenzene	45.9	5.0	ug/kg	50.0		91.8	60-135			
1,2,4-Trichlorobenzene	46.4	5.0	ug/kg	50.0		92.8	55-135			
1,1,1-Trichloroethane	55.1	2.0	ug/kg	50.0		110	65-135			
1,1,2-Trichloroethane	50.5	2.0	ug/kg	50.0		101	65-130			
Trichloroethene	49.3	2.0	ug/kg	50.0		98.6	70-130			
Trichlorofluoromethane	60.3	5.0	ug/kg	50.0		121	55-150			
1,2,3-Trichloropropane	45.2	10	ug/kg	50.0		90.4	60-150			
1,2,4-Trimethylbenzene	47.3	2.0	ug/kg	50.0		94.6	75-130			
1,3,5-Trimethylbenzene	47.7	2.0	ug/kg	50.0		95.4	70-130			
Vinyl chloride	46.9	5.0	ug/kg	50.0		93.8	40-145			
o-Xylene	50.2	2.0	ug/kg	50.0		100	70-135			
m,p-Xylenes	98.4	2.0	ug/kg	100		98.4	70-130			
Surrogate: Dibromofluoromethane	*52.3*		*ug/kg*	*50.0*		*105*	*85-125*			
Surrogate: Toluene-d8	*54.2*		*ug/kg*	*50.0*		*108*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*57.9*		*ug/kg*	*50.0*		*116*	*80-120*			
Matrix Spike Analyzed: 05/16/00 (I0E1604-MS1)					**Source: IJE0450-01**					
Benzene	50.7	2.0	ug/kg	50.0	ND	101	60-140			
Bromodichloromethane	57.8	2.0	ug/kg	50.0	ND	116	60-140			
Bromoform	62.0	5.0	ug/kg	50.0	ND	124	60-150			
Chlorobenzene	52.4	2.0	ug/kg	50.0	ND	105	70-135			
Chloroform	54.0	2.0	ug/kg	50.0	ND	108	65-140			
Dibromochloromethane	58.4	2.0	ug/kg	50.0	ND	117	65-140			
1,4-Dichlorobenzene	51.3	2.0	ug/kg	50.0	ND	103	60-145			
1,1-Dichloroethane	52.0	2.0	ug/kg	50.0	ND	104	55-150			
1,2-Dichloroethane	61.0	2.0	ug/kg	50.0	ND	122	55-145			
1,1-Dichloroethene	52.1	5.0	ug/kg	50.0	ND	104	45-165			
Ethylbenzene	55.9	2.0	ug/kg	50.0	ND	112	70-140			
Naphthalene	49.5	5.0	ug/kg	50.0	ND	99.0	25-175			
Tetrachloroethene	449	2.0	ug/kg	50.0	450	-2.00	10-200			E,M-HA
Toluene	55.1	2.0	ug/kg	50.0	ND	109	65-140			
Trichloroethene	50.7	2.0	ug/kg	50.0	ND	101	60-145			
Vinyl chloride	46.3	5.0	ug/kg	50.0	ND	92.6	30-160			

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Environ-Irvine
2010 Main Street, 9th Floor
Irvine, CA 92614
Attention: Carol Serlin

Client Project ID: International Rectifier 04-8511A
Report Number: IJE0240

Sampled: 05/08/00
Received: 05/09/00

METHOD BLANK/QC DATA

VOLATILE ORGANICS by GC/MS (EPA 5030B/8260B)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: I0E1604 Extracted: 05/16/00										
Matrix Spike Analyzed: 05/16/00 (I0E1604-MS1)					**Source: IJE0450-01**					
o-Xylene	52.9	2.0	ug/kg	50.0	ND	106	65-150			
m,p-Xylenes	105	2.0	ug/kg	100	ND	105	40-160			
Surrogate: Dibromofluoromethane	*53.1*		*ug/kg*	*50.0*		*106*	*85-125*			
Surrogate: Toluene-d8	*53.9*		*ug/kg*	*50.0*		*108*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*57.0*		*ug/kg*	*50.0*		*114*	*80-120*			
Matrix Spike Dup Analyzed: 05/16/00 (I0E1604-MSD1)					**Source: IJE0450-01**					
Benzene	53.1	2.0	ug/kg	50.0	ND	106	60-140	4.62	25	
Bromodichloromethane	59.3	2.0	ug/kg	50.0	ND	119	60-140	2.56	20	
Bromoform	60.3	5.0	ug/kg	50.0	ND	121	60-150	2.78	20	
Chlorobenzene	55.6	2.0	ug/kg	50.0	ND	111	70-135	5.93	20	
Chloroform	56.1	2.0	ug/kg	50.0	ND	112	65-140	3.81	20	
Dibromochloromethane	59.1	2.0	ug/kg	50.0	ND	118	65-140	1.19	20	
1,4-Dichlorobenzene	55.0	2.0	ug/kg	50.0	ND	110	60-145	6.96	20	
1,1-Dichloroethane	54.3	2.0	ug/kg	50.0	ND	109	55-150	4.33	20	
1,2-Dichloroethane	60.2	2.0	ug/kg	50.0	ND	120	55-145	1.32	30	
1,1-Dichloroethene	54.8	5.0	ug/kg	50.0	ND	110	45-165	5.05	40	
Ethylbenzene	60.3	2.0	ug/kg	50.0	ND	121	70-140	7.57	20	
Naphthalene	47.7	5.0	ug/kg	50.0	ND	95.4	25-175	3.70	50	
Tetrachloroethene	470	2.0	ug/kg	50.0	450	40.0	10-200	4.57	50	E,M-HA
Toluene	57.4	2.0	ug/kg	50.0	ND	113	65-140	4.09	20	
Trichloroethene	52.9	2.0	ug/kg	50.0	ND	106	60-145	4.25	30	
Vinyl chloride	53.8	5.0	ug/kg	50.0	ND	108	30-160	15.0	30	
o-Xylene	56.6	2.0	ug/kg	50.0	ND	113	65-150	6.76	20	
m,p-Xylenes	113	2.0	ug/kg	100	ND	113	40-160	7.34	20	
Surrogate: Dibromofluoromethane	*51.9*		*ug/kg*	*50.0*		*104*	*85-125*			
Surrogate: Toluene-d8	*53.6*		*ug/kg*	*50.0*		*107*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*56.1*		*ug/kg*	*50.0*		*112*	*80-120*			

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Environ-Irvine
2010 Main Street, 9th Floor
Irvine, CA 92614
Attention: Carol Serlin

Client Project ID: International Rectifier 04-8511A
Report Number: IJE0240

Sampled: 05/08/00
Received: 05/09/00

METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: I0E1041 Extracted: 05/10/00										
Blank Analyzed: 05/10/00 (I0E1041-BLK1)										
Antimony	ND	10	mg/kg							
Arsenic	ND	2.0	mg/kg							
Barium	ND	1.0	mg/kg							
Beryllium	ND	0.50	mg/kg							
Cadmium	ND	0.50	mg/kg							
Chromium	ND	1.0	mg/kg							
Cobalt	ND	1.0	mg/kg							
Copper	ND	1.0	mg/kg							
Lead	ND	2.0	mg/kg							
Molybdenum	ND	2.0	mg/kg							
Nickel	ND	1.0	mg/kg							
Selenium	ND	2.0	mg/kg							
Silver	ND	1.0	mg/kg							
Thallium	ND	10	mg/kg							
Vanadium	ND	1.0	mg/kg							
Zinc	ND	5.0	mg/kg							
LCS Analyzed: 05/10/00 (I0E1041-BS1)										
Antimony	48.1	10	mg/kg	50.0		96.2	80-120			
Arsenic	47.1	2.0	mg/kg	50.0		94.2	80-120			
Barium	46.0	1.0	mg/kg	50.0		92.0	80-120			
Beryllium	46.6	0.50	mg/kg	50.0		93.2	80-120			
Cadmium	45.6	0.50	mg/kg	50.0		91.2	80-120			
Chromium	46.1	1.0	mg/kg	50.0		92.2	80-120			
Cobalt	46.2	1.0	mg/kg	50.0		92.4	80-120			
Copper	44.1	1.0	mg/kg	50.0		88.2	80-120			
Lead	45.7	2.0	mg/kg	50.0		91.4	80-120			
Molybdenum	45.0	2.0	mg/kg	50.0		90.0	80-120			
Nickel	44.6	1.0	mg/kg	50.0		89.2	80-120			
Selenium	42.4	2.0	mg/kg	50.0		84.8	80-120			
Silver	22.8	1.0	mg/kg	25.0		91.2	80-120			
Thallium	40.8	10	mg/kg	50.0		81.6	80-120			
Vanadium	47.1	1.0	mg/kg	50.0		94.2	80-120			
Zinc	44.1	5.0	mg/kg	50.0		88.2	80-120			

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Environ-Irvine
2010 Main Street, 9th Floor
Irvine, CA 92614
Attention: Carol Serlin

Client Project ID: International Rectifier
04-8511A
Report Number: IJE0240

Sampled: 05/08/00
Received: 05/09/00

METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: I0E1041 Extracted: 05/10/00										
Matrix Spike Analyzed: 05/11/00 (I0E1041-MS1)					**Source: IJE0240-07**					**RL-3**
Antimony	47.3	20	mg/kg	50.0	ND	94.6	75-125			
Arsenic	46.4	4.0	mg/kg	50.0	ND	92.8	75-125			
Barium	65.1	2.0	mg/kg	50.0	19	92.2	75-125			
Beryllium	44.8	1.0	mg/kg	50.0	ND	89.6	75-125			
Cadmium	45.0	1.0	mg/kg	50.0	ND	90.0	75-125			
Chromium	48.9	2.0	mg/kg	50.0	ND	94.6	75-125			
Cobalt	45.2	2.0	mg/kg	50.0	ND	89.5	75-125			
Copper	50.5	2.0	mg/kg	50.0	3.3	94.4	75-125			
Lead	47.5	4.0	mg/kg	50.0	ND	92.6	75-125			
Molybdenum	45.2	4.0	mg/kg	50.0	ND	90.4	75-125			
Nickel	46.1	2.0	mg/kg	50.0	ND	92.2	75-125			
Selenium	44.7	4.0	mg/kg	50.0	ND	89.4	75-125			
Silver	24.5	2.0	mg/kg	25.0	ND	98.0	75-125			
Thallium	43.0	20	mg/kg	50.0	ND	86.0	75-125			
Vanadium	50.9	2.0	mg/kg	50.0	3.7	94.4	75-125			
Zinc	53.7	10	mg/kg	50.0	ND	100	75-125			
Matrix Spike Dup Analyzed: 05/11/00 (I0E1041-MSD1)					**Source: IJE0240-07**					**RL-3**
Antimony	49.1	20	mg/kg	50.0	ND	98.2	75-125	3.73	20	
Arsenic	46.3	4.0	mg/kg	50.0	ND	92.6	75-125	0.216	20	
Barium	70.6	2.0	mg/kg	50.0	19	103	75-125	8.11	20	
Beryllium	45.7	1.0	mg/kg	50.0	ND	91.4	75-125	1.99	20	
Cadmium	45.7	1.0	mg/kg	50.0	ND	91.4	75-125	1.54	20	
Chromium	49.9	2.0	mg/kg	50.0	ND	96.6	75-125	2.02	20	
Cobalt	46.3	2.0	mg/kg	50.0	ND	91.7	75-125	2.40	20	
Copper	50.6	2.0	mg/kg	50.0	3.3	94.6	75-125	0.198	20	
Lead	48.7	4.0	mg/kg	50.0	ND	95.0	75-125	2.49	20	
Molybdenum	46.9	4.0	mg/kg	50.0	ND	93.8	75-125	3.69	20	
Nickel	46.4	2.0	mg/kg	50.0	ND	92.8	75-125	0.649	20	
Selenium	45.5	4.0	mg/kg	50.0	ND	91.0	75-125	1.77	20	
Silver	25.1	2.0	mg/kg	25.0	ND	100	75-125	2.42	20	
Thallium	43.7	20	mg/kg	50.0	ND	87.4	75-125	1.61	20	
Vanadium	52.1	2.0	mg/kg	50.0	3.7	96.8	75-125	2.33	20	
Zinc	48.7	10	mg/kg	50.0	ND	90.2	75-125	9.77	20	

Del Mar Analytical, Irvine
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Environ-Irvine
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Attention: Carol Serlin

Client Project ID: International Rectifier 04-8511A
Report Number: IJE0240

Sampled: 05/08/00
Received: 05/09/00

METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: I0E1105 Extracted: 05/11/00										
Blank Analyzed: 05/11/00 (I0E1105-BLK1)										
Mercury	ND	0.020	mg/kg							
LCS Analyzed: 05/11/00 (I0E1105-BS1)										
Mercury	0.802	0.020	mg/kg	0.800		100	85-115			
Matrix Spike Analyzed: 05/11/00 (I0E1105-MS1)					**Source: IJE0084-01**					
Mercury	307	20	mg/kg	0.800	410	-12900	70-130			M-HA
Matrix Spike Dup Analyzed: 05/11/00 (I0E1105-MSD1)					**Source: IJE0084-01**					
Mercury	199	20	mg/kg	0.800	410	-26400	70-130	42.7	20	M-HA,R4

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Environ-Irvine
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04-8511A
Report Number: IJE0240

Sampled: 05/08/00
Received: 05/09/00

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: I0E0933 Extracted: 05/09/00										
Duplicate Analyzed: 05/09/00 (I0E0933-DUP1)					**Source: IJE0240-01**					
pH	4.24	NA	pH Units		4.2			0.948	5	

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DATA QUALIFIERS AND DEFINITIONS

E	Concentration exceeds the calibration range and therefore result is semi-quantitative.
M-HA	Due to high levels of analyte in the sample, the MS/MSD calculation does not provide useful spike recovery information. See LCS.
R4	Due to the low levels of analyte in the sample, the duplicate RPD calculation does not provide useful information.
RL-3	Reporting limit raised due to high concentrations of non-target analytes.
ND	Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
NR	Not reported.
RPD	Relative Percent Difference

Del Mar Analytical, Irvine
Patty Mata
Project Manager

ENVIRON
2010 Main St., Suite 900
Irvine, California 92614
(949) 261-5151
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CHAIN-of-CUSTODY

PROJECT NAME: Int'l Rectifier
PROJECT NUMBER: 04-8511A (R) 5/9/00
PROJECT LOCATION: El Segundo, CA
FIELD PERSON: Rena Hansen
PROJECT MANAGER: Carol Serlin
DATE: 5-8-00

SAMPLER: R Hansen
SIGNATURE: RenaHansen

SAMPLE I.D. NUMBER	SAMPLE DATE (YEAR 00)	SAMPLE TIME	MATRIX (S) SOIL (G) GAS (W) WATER	NUMBER OF CONTAINERS	FILTERED/UNFILTERED (F/U)	PRESERVATION (SEE KEY)	ANALYSIS REQUIRED: Corrosivity EPA Method 9045	VOCs EPA Method 8260	Metals (Cam 17) EPA 6010/7470							COMMENTS
SB-1-5	5/8	1130	S	1	/	/	X									IJE0240
SB1-10	5/8	1138	S	1	/	/	X									
SB-1-13	5/8	1156	S	1	/	/	X									
SB-1-14	5/8	1217	S	1	/	/	X									
SB-2-5	5/8	1250	S	1	/	/	X									
SB-2-10	5/8	1256	S	1	/	/	X									
SB-2-15	5/8	1314	S	1	/	/	X	X	X	(R) 5/9/00						
SB-3-5	5/8	1411	S	1	/	/	X									
SB-3-10	5/8	1355	S	1	/	/	X									
SB-3-15	5/8	1438	S	1	/	/	X									
SB-4-15	5/8	1510	S	1	/	/	X	X	X	(R) 5/9/00						
TOTAL	X	X	X	11												

H = HCL; N = HNO_3; S = H_2SO_4; U = UNKNOWN; NO = NONE; O = OTHER

RELINQUISHED BY:	TIME/DATE:	RECEIVED BY:	TIME/DATE:
RenaHansen	0920 5-9-00	(COMPANY):	
RELINQUISHED BY:	TIME/DATE:	RECEIVED BY:	TIME/DATE:
		(COMPANY):	
RELINQUISHED BY:	TIME/DATE:	RECEIVED BY:	TIME/DATE:
		(COMPANY):	0920 5/9/00

TURNAROUND TIME (CIRCLE ONE): SAMEDAY, 24 HOURS, 48 HOURS, 72 HOURS, 5 DAYS, NORMAL

SAMPLE INTEGRITY: INTACT ✓ ON ICE 3°C

FILE: LOGS\CHNCST

Appendix A-4

ENVIRON
2010 Main St., Suite 900
Irvine, California 92614
(949) 261-5151
(949) 261-6202 (FAX)

CHAIN-of-CUSTODY

PROJECT NAME: Int'l Rectifier
PROJECT NUMBER: 04-8511A @ 5/4/00
PROJECT LOCATION: El Segundo

FIELD PERSON: R. Hansen
PROJECT MANAGER: C. Sevlin
DATE: @ 5-5-00

SAMPLER: R. Hansen
SIGNATURE: RenaHansen

SAMPLE I.D. NUMBER	YEAR 00 SAMPLE DATE	SAMPLE TIME	MATRIX (S) SOIL (G) GAS (W) WATER	NUMBER OF CONTAINERS	FILTERED/UNFILTERED (F/U)	PRESERVATION (SEE KEY)	ANALYSIS REQUIRED: Corrosivity EPA Method 9045	VOCs EPA Method 8260	Metals (Cam17) EPA 6010/7470	@ 5/4/00	COMMENTS
SB-4-25	5/4	1606	S	1	/	/	X	X	X		
~~SB~~-4-20	5/4	1525	S	1	/	/	X				
TOTAL	X	X	X	2							

lab

RELINQUISHED BY:	TIME/DATE:	RECEIVED BY: (COMPANY):	TIME/DATE:
RenaHansen	0920 5-9-00		
RELINQUISHED BY:	TIME/DATE:	RECEIVED BY: (COMPANY):	TIME/DATE:
RELINQUISHED BY:	TIME/DATE:	RECEIVED BY: (COMPANY):	TIME/DATE: 0920 5/4/00

TURNAROUND TIME (CIRCLE ONE): SAMEDAY; 24 HOURS; 48 HOURS; 72 HOURS; 5 DAYS; NORMAL

SAMPLE INTEGRITY: INTACT ✓ ON ICE 3°C

H = HCL; N = HNO_3; S = H_2SO_4; U = UNKNOWN; NO = NONE; O = OTHER

FILE: LOGS\CHNCST

Appendix A-4

GROUNDWATER TECHNOLOGY ®

Groundwater Technology, Inc.
20000/200 Mariner Avenue, Torrance, CA 90503-1670 USA
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PHASE I AND II ENVIRONMENTAL INVESTIGATIONS
INTERNATIONAL RECTIFIER SITES
318 KANSAS STREET AND 1521 E. GRAND AVENUE
EL SEGUNDO, CALIFORNIA

April 5, 1996

Prepared for:
Mr. Greg Takagi
International Rectifier Co.
247 Kansas Street
El Segundo, CA 90245-0914

Groundwater Technology, Inc.
Submitted by:

Rachel Fischer
Project Manager
Registered Geologist
No. 6274

Groundwater Technology, Inc.
Approved by:

John Miller
NID Manager

EXECUTIVE SUMMARY

International Rectifier Corp. retained Groundwater Technology to perform limited Phase I and II environmental investigations of the properties located at 318 Kansas Street and 1521 East Grand Avenue, El Segundo, California (Figures 1 and 2). (Two buildings are located at the properties: International Rectifier Building No. 6 is located at 318 Kansas Street and Building No. 3 is located at 1521 E. Grand Avenue.) The purpose of this investigation was to evaluate the sites for potential subsurface environmental hazards resulting from current or historic site use. The scope of the limited Phase I investigation included interviews with selected International Rectifier employees, review of aerial photographs, a physical walk-through of the site and the perimeter, and identification of potential areas of concern. Groundwater Technology also reviewed documents provided by International Rectifier, as well as those located at the City of El Segundo, Los Angeles County Department of Public Works (LACDPW), and California Department of Oil and Gas. Based on the results of the Phase I investigation, Groundwater Technology recommended a limited Phase II investigation, as discussed below. The project scope also included preparation of this report, which summarizes the findings of the records search.

Results of the Phase I and II investigations indicated the following conditions:

- International Rectifier has owned the 318 Kansas Street and 1521 E. Grand Avenue sites since 1951 and 1952.

Past Uses

- Building No. 6 (318 Kansas Street) Limited information regarding previous owners of 318 Kansas Street was obtained. Based on the absence of subsurface structures (i.e. sumps, clarifiers, or tank pits) Groundwater Technology believes that significant quantities of hazardous waste were not used in this building. Overall, Groundwater Technology believes that the risk of site contamination associated with operations inside Building No. 6 prior to International Rectifier's ownership is low to insignificant.

- Building No. 3 (1521 E. Grand Avenue) Anecdotal information regarding previous site occupants suggests that Building No. 3 may have been used for food processing. Such operations typically do not involve large quantities of hazardous materials. Groundwater Technology believes that the risk of site contamination associated with operations inside Building No. 3 prior to International Rectifier's ownership is low to insignificant.

  Building No. 3 was used by International Rectifier for offices, parts assembly, print shop operations, and warehouse space. Hazardous wastes associated with International Rectifier's former print shop operations in Building No. 3 were accumulated in 55-gallon drums and transported offsite for disposal. Small quantities of hazardous materials were associated with International Rectifier's former parts assembly operations in this building. However, no subsurface sumps or piping was associated with either operation and the building's concrete floor slab

forms an effective barrier to subsurface migration from surface spillage. Groundwater Technology believes that the risk of subsurface contamination from these operations is insignificant.

- Railroad A railroad line ran through the southwest corner of the study area until the early 1980s. Areas along Kansas Street and Grand Avenue appeared to contain vegetation or ponded water in an aerial photograph taken in 1938. Groundwater Technology drilled two 5-foot borings (SB-4 and -5) in the vicinity of the former railroad to evaluate for the presence of total extractable hydrocarbons (TEH), 17 California Assessment Metals (CAM), and volatile organic compounds (VOCs). Soil samples collected at 5 feet below grade (bg) did not contain detectable TEH or VOCs. CAM were below levels of concern (*i.e.* below the EPA Region IX Preliminary Remediation Goals (PRGs) and the California Total Threshold Limit Concentrations (TTLCs) for hazardous waste).

Current Uses

- Building No. 6 (318 Kansas Street) International Rectifier has used and is currently using Building No. 6 for offices and maintenance operations (e.g. parts repair, welding operations). Due to the small quantities of hazardous substances used in this building, these operations raise no environmental concerns. No visual indications of chemical releases were observed within the building during the site visits. Groundwater Technology believes that the risk of site contamination associated with current operations inside the building is low to insignificant.

- Building No. 3 (1521 E. Grand Avenue) International Rectifier is using Building No. 3 for offices and warehouse space. No visual indications of chemical releases were observed within the buildings during the site visits.

  A clarifier is present along the western side of the building. A pipe fitting area is located along the northern building exterior, and a paint storage shed is located southwest of the pipe fitting area. Groundwater Technology investigated each of these areas, as discussed below.

- Clarifier International Rectifier has historically used the three-stage clarifier for boiler water, cooling tower condensate, and blow down water. No records indicated that the clarifier was used for hazardous waste. Groundwater Technology drilled a 20-foot soil boring (SB-1) adjacent to the clarifier to evaluate for the presence of the following types of compounds: total recoverable petroleum hydrocarbons (TRPH), CAM, and VOCs. Soil pH was also evaluated. Analytical results of a soil sample collected at 20 feet bg confirm that the soil pH was neutral, TRPH and VOCs were below detection limits, and CAM were below levels of concern (*i.e.* below the PRGs and the TTLCs).

- Pipe Fitting Area Lube oils and cutting fluids, as well as degreasers, are typically associated with pipe fitting operations. The asphalt paving in this area appeared to

be stained with oil. Groundwater Technology drilled a 15-foot boring adjacent to this area to evaluate for VOCs and total extractable hydrocarbons (TEH). The sample collected at 5 feet bg contained 380 milligrams per kilogram (mg/kg) TEH and 2.3 micrograms per kilogram (ug/kg) perchloroethylene (PCE). No other VOCs were present above detection limits. Soil samples collected at 10 and 15 feet bg did not contain TEH or VOCs above detection limits. Hence, the extent of detectable TEH and PCE is limited to the upper 5 feet of soil in this area.

The concentration of PCE was below the Maximum Contaminant Level (MCL) for drinking water, and therefore does not raise environmental concern. Soil screening levels from the Regional Water Quality Control Board (RWQCB) guidance for remediation of petroleum-impacted soil was used to evaluate TEH levels at the site. "Level D" screening levels for TEH (with carbon chain lengths of C13 - C22) is 10,000 mg/kg. Hence, the TEH level of 380 mg/kg does not raise environmental concern if the soil remains in place at the site. Soil excavated from this area may be disposed of as non-hazardous waste.

- Paint Storage Shed The paint storage shed stores paint thinners and solvents. The concrete floor slab in this shed is sloped towards the asphalt-paved parking lot. Although there were no visual indications of spillage in this area and the concrete floor slab appeared to be intact, Groundwater Technology drilled a 15-foot boring adjacent to this shed to evaluate for VOCs and TEH. The sample collected at 5 feet bg contained 7.1 mg/kg TEH, but did not contain detectable VOCs. This TEH level raises no environmental concerns.

Based on the results of the limited Phase I and II investigations, Groundwater Technology believes that subsurface conditions at the 318 Kansas Street and 1521 E. Grand Avenue sites present very low environmental risk. TEH and PCE containing soils in the pipe fitting area may be left in place or used as backfill on the sites.

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1.0 INTRODUCTION

On behalf of International Rectifier Corp., Groundwater Technology performed limited Phase I and II environmental investigations of the properties located at 318 Kansas Street and 1521 East Grand Avenue, El Segundo, California (Figures 1 and 2). The purpose of this investigation was to evaluate the sites for potential subsurface environmental hazards resulting from current or historic site use. The scope of this limited Phase I investigation included interviews with selected International Rectifier employees, a physical walk-through of the site and the perimeter, identification of potential areas of concern, and review of the following:

- documents provided by International Rectifier
- City of El Segundo Building Department records
- historic aerial photographs
- Los Angeles County Department of Public Works (LACDPW) records
- California Department of Oil and Gas records

Based on the results of the Phase I investigation, Groundwater Technology recommended a limited Phase II investigation. Soil samples were collected from five soil borings (SB-1 through -5) to evaluate whether the activities associated with the following structures have left chemical residues in subsurface soils: the clarifier, the pipe fitting area, the paint shed, or the former railroad line. The project scope also included preparation of this report, which summarizes the findings of the limited Phase I and II investigations.

2.0 SITE DESCRIPTION

The study area for this investigation includes International Rectifier Building Nos. 3 and 6, respectively located at 1521 E. Grand Avenue and 318 Kansas Street, El Segundo, California, and the paved areas between the buildings. This area is bounded by Grand Avenue to the south, Washington Street to the east, and Kansas Street to the west (Figure 2). International Rectifier Building Nos. 4 and 5 and associated structures are present immediately to the north, and Holly Avenue is located further to the north. Two of the underground storage tanks (USTs) located adjacent to Building No. 4 store diesel and mixed solvents, and the third tank is empty. International Rectifier intends to close all three USTs by removing them in 1998 in accordance with applicable regulations. A hydrogen tank is located west of the USTs. The study area and neighboring properties are zoned M-1 for manufacturing. Properties located north of Holly Avenue are zoned R-1 and R-3 for residences.

Building No. 3 occupies approximately 17,500 square feet and is currently used for offices and as a warehouse for files, office furniture, equipment, and manufactured products. Unused office

spaces are also present within the building. A clarifier is present along the western side of the building. A pipe fitting area is located along the northern building exterior, and a paint storage shed is located south of the pipe fitting area. Building No. 6 houses offices, employee lockers, and a maintenance work area for wood working and metal bending.

A preliminary title report for 1521 Grand Avenue provided the following legal description of the study area:

> Parcel 1: Lots 262, 263, and 264 of Block 123 of El Segundo, as per map recorded in Book 22 pages 106 and 107 of maps, in the office of the County Recorder of said county. Except from said Lot 262, the south 30 feet thereof, as conveyed to the County of Los Angeles for road and highway purposes by deed recorded in Book 6017 page 93 of deeds.
>
> Parcel 2: Lot 230, Block 123 of El Segundo tract, as per map recorded in Book 22, pages 106 and 107 of maps, in the office of the County Recorder of said county.
>
> Parcel 3: Parcel 1 of Parcel Map No. 7197, as filed in Book 110, pages 96 and 97 of parcel maps, in the office of the County Recorder of said county.

3.0 GEOLOGY AND HYDROGEOLOGY

The site is located within the El Segundo Sand Hills of the Los Angeles Coastal Plain, at elevations ranging from 105 to 116 feet above mean sea level. Ground surface in the study area slopes to the northwest. The Pacific Ocean lies approximately 1.5 miles to the west. The Coastal Plain consists of unconsolidated sediments of Plio-Pleistocene age. Crude-oil-bearing deposits lie deeper than 1,000 feet beneath the site within the El Segundo Oil Field. The site is underlain by inactive dune sands of the El Segundo Sand Hills, and shallow sediments at nearby sites are known to consist of well-sorted to silty sands.

Groundwater in the vicinity is reported to be deeper than 80 feet below grade (bg). Seawater intrusion and off-site hydrocarbon sources affect regional groundwater quality. The West Coast Basin Barrier Project, designed to control seawater intrusion by creation of an artificial seaward gradient using water injection, is located east of the site. Because of this, groundwater beneath the site is not designated by the Regional Water Quality Control Board (RWQCB) for beneficial use.

4.0 SITE INSPECTION

Ms. Rachel Fischer of Groundwater Technology visited the site on March 8 and 18, 1996 to visually inspect the study area. Building No. 6 was used for offices, employee lockers, and wood shop and metal bending operations. Due to the small quantities of hazardous substances used in this building, these operations raise no environmental concerns. In addition, no underground structures (*i.e.* sumps, clarifiers, or tanks) were associated with this building. No visual indications of chemical releases were observed during the site visits.

Building No. 3 was used for offices and warehouse space for storing files, office furniture, and unused equipment. Groundwater Technology was unable to inspect the entire building due to time constraints. However, the portions of floor slab that were viewed generally appeared to be intact and unstained, and there was no reason to believe that other portions of the building were not in similar condition. No hazardous materials associated with on-going operations in this building were identified.

A three-stage clarifier was present along the western side of Building No. 3. The clarifier was surrounded by intact concrete slab foundations. Metal plates were present along the top of the clarifier. The following information was obtained from a review of International Rectifier's files for the clarifier. The clarifier has historically been used for cooling water condensate, overflow from the cooling tower, and water drained from the boiler (when required for maintenance). The clarifier has a 1,700-gallon capacity, and was reportedly installed by a previous site owner or tenant. International Rectifier currently holds a LACDPW permit for waste discharge. Algicides, biocides, and anti-scaling chemicals are the only compounds known to be added to the water stream. Construction plans for the clarifier show that unused lines enter into the clarifier. However, correspondence from International Rectifier to the LACDPW dated 1990 indicates that the source ends of these lines have been capped and sealed over with either vinyl floor tiles or carpet for a long time. International Rectifier personnel could not identify the any potential former drain locations within the building. Because the clarifier is not used for hazardous waste discharge and the file review does not raise environmental concerns, it is unlikely that use of the former drains would raise environmental concerns.

A pipe fitting area was located along the northern exterior of Building No. 3. This area was surrounded by chain link fence and paved with asphalt. The asphalt pavement appeared to be stained with oil. According to Mr. Robert Feist of International Rectifier, pipe fitting operations occasionally involve using cutting oils and drip pans are generally used to catch oil drips.

A paint storage shed was located south of the pipe fitting area, along the western exterior of Building No. 3. The shed consisted of metal siding, chain-link fencing, and a concrete slab

foundation. Paint and thinners (e.g. mineral spirits) were present in both gallon-size and smaller containers. The concrete slab foundation appeared to be intact. The asphalt adjacent to the paint shed was intact and appeared to be stained with rust from the metal siding.

5.0 SITE HISTORY

5.1 Information Provided by International Rectifier

During the course of this investigation, Ms. Fischer spoke with Mr. Greg Takagi, Mr. Robert Feist, and Mr. Jerry Carpenter of International Rectifier to obtain information regarding the site history. In addition, Mr. Takagi provided a copy of a preliminary title report and appraisal for Building No. 3, as well as information regarding the on-site clarifier and former print shop operations in Building No. 3. Construction dates for the two buildings could not be confirmed, but reportedly pre-date International Rectifier's ownership. Anecdotal information suggests that Building No. 3 may have been used for food processing prior to ownership by International Rectifier.

5.1.1 Interview with Mr. Carpenter

On March 18, 1996, Ms. Fischer interviewed Mr. Jerry Carpenter, Vice President of Operations. Mr. Carpenter has worked at International Rectifier for the past 17½ years, and has been directly and indirectly involved with operations at both Building Nos. 3 and 6. Mr. Carpenter could not recall any fires or hazardous waste spills at either site. He stated that Building No. 6 has been used for maintenance (e.g. parts repair, welding) for as long as he could recall. He thought that Building No. 6 was also used for similar operations prior to International Rectifier's purchase of the site.

Building No. 3 was used for parts assembly operations as well as office and storage space. Parts assembly was an essentially "dry" operation that involved small amounts of epoxies. Mr. Carpenter recalled that degreasing operations at the site used freon. In addition, a print shop was located within the building for one year, and portions of the building were also used as electrical test laboratories. He could not recall any "wet" operations at the facility.

5.1.2 Easements

The preliminary title report provided information regarding easements on the site. Easements were granted to the following public agencies and utility companies:

- Pacific-Southwest Trust & Savings Bank for public street/road (June 27, 1925)
- The City of El Segundo for public street purposes (August 10, 1954) and for a water line (August 17, 1955)
- Southern California Edison Company for power poles (no date available)
- Southern California Gas Company for pipe lines (February 27, 1953)

These easements do not raise environmental concerns.

5.1.3 Former Operations in Building No. 3

Building No. 3 was formerly used for parts assembly, as described in section 5.1.1 of this report. Small quantities of hazardous materials were used in this operation. However, the building's concrete floor slab forms an impermeable barrier to subsurface migration of surface spillage. No subsurface structures (*i.e.* sumps, piping, or trenches) were associated with the parts assembly. It is unlikely that parts assembly operations have impacted the subsurface.

A cold storage locker and a gas cylinder storage area were located north of the clarifier. The locker stored heat- and light-sensitive materials. A typical inventory list for these areas is included as Table 1. Based on the small volume of materials kept in this area, it is unlikely that these compounds have impacted the subsurface in this area.

The former print shop operated a dark room and a printing plate-making bench that used photographic chemicals. Lithographic subtractive fixer was accumulated in a 55-gallon drum for off-site disposal. Spent dark room solutions, photographic fixer and developer, were transferred into one- or five-gallon containers, and then to a second 55-gallon drum for off-site disposal. The location of the former photographic operations is shown in Figure 2. Because subsurface piping is not associated with this operation and the concrete floor slab in this area forms an impermeable barrier, it is unlikely that these operations have impacted the subsurface in this area.

5.2 Information Obtained from Public Records

5.2.1 Aerial Photographs

Historic aerial photographs of the site and surrounding vicinity were viewed at the City of El Segundo Engineering Department and at the Fairchild and Spence Aerial Photograph

Collections at the University of California, Los Angeles. Table 2 lists the dates and sources of the reviewed aerial photographs.

In 1938, the study area was vacant and fallow, and neighboring sites were used for oil field operations. Grand Avenue, Washington Street, and Kansas Street were present to the south, east, and west. A railroad crossed through the southwestern corner of the site. Dark areas adjacent to the railroad were visible in the photograph, and might indicate vegetation or ponded water associated with the railroad tracks. Four bulk storage tanks were present immediately to the north, along the western side of Washington Avenue, and an oil derrick was present immediately to the north along Kansas Street. Neighboring properties were variously occupied by oil derricks, tanks, and small structures that were probably associated with oil production.

By 1959, the site was occupied by asphalt-paved parking areas and the current buildings, except for the easternmost portion of Building No. 6, which was not yet constructed. Adjacent properties to the north, south, east, and west are also occupied by commercial buildings. The oil derrick and four tanks north of the site were no longer present, and a small building occupied former tank farm area.

Aerial photographs taken in 1966 and 1973 indicate that the site remained essentially unchanged. By 1982, the railroad tracks were no longer present in the southwestern portion of the site. The Building No. 4 had been constructed immediately north of Building No. 3, and the underground storage tanks were installed north of the site. The site appeared to be essentially unchanged in the aerial photograph taken in 1994. With the exception of the areas associated with the railroad tracks, no environmental concerns were identified from these photographs.

5.2.2 City Directory and other Agency Records

Groundwater Technology personnel reviewed the following items at public agencies:

- building permits at the City of El Segundo, Engineering Department
- "criss-cross" directories at the El Segundo Public Library
- oil well and sump location maps at the California Division of Oil and Gas (DOG)
- clarifier records at the Los Angeles County Department of Public Works (LACDPW)

In October 1947 or 1949, the City of El Segundo issued a building permit for construction of a 2,000 square foot storage building at 1521 E. Grand Avenue. Gennaro Iannini and Tony Parravano were listed as the site owners on this permit. In December 1952, International

Rectifier obtained a building permit for construction of a 168 square foot storage room at the site. Subsequent building permits for 1521 E. Grand Avenue list International Rectifier as the site owner. A permit dated June 1964 listed construction of an electronic assembly building. Only one permit, dated January 3, 1984, was on file for Building No. 6. This permit listed International Rectifier as the site owner. None of the permits identified the construction date of the clarifier.

The El Segundo Public Library only had criss cross directories dating from 1994 to 1984. These directories indicate that both buildings were owned by International Rectifier during that period.

DOG records indicate that no oil wells were drilled within the study area and no drilling mud sumps have been identified in this area. Block Oil Co. well "Block 21" (also known as "Elsie #9-1") was located immediately north of the study area. The location of this well was described on Lot 229 as being 258 feet north and 144 feet east from the center lines of Grand Avenue and Kansas Street, respectively. Figure 2 shows the location of this well with respect to the study area. The Wilshire Oil Company, Inc. drilled the well in October 1937 to a total depth of 7,208 feet bg. The well changed ownership several times in the 1940s, and the Block Oil Co. abandoned the well in June 1948. No well blowouts were reported to the DOG. A DOG map showing the location of this well and well abandonment records are provided in Appendix A. Because of this well's proximity to the study area, residual crude oil associated with this former well may be present in shallow soils in this area. However, because the well ceased operations almost 50 years ago, any residual crude oil in surface soils would be expected to be weathered and would not raise environmental concerns. Due to the relatively non-hazardous nature of crude oil, regulatory agencies typically do not set stringent cleanup standards; for example, the RWQCB action level for cleanup of such oils would be 15,000 parts per million (ppm).

LACDPW records contained information regarding the three-stage clarifier and former print shop operations. The LACDPW files contained essentially the same information as International Rectifier's files, which is discussed in previous sections of this report.

5.2.3 Chain of Title Search

Groundwater Technology reviewed a 50-year chain of title search, performed by Los Angles Title Services to assess the land use history. Table 3 summarizes the ownership changes for each of the six lots within the study area.

Groundwater Technology believes that the risk of site contamination from previous site owners is very low. Aerial photographs indicate that the site was undeveloped prior to 1938. Although Sam Block & Son, an oil exploration and production company, owned a portion of the study area, no oil wells were drilled on the site. No information regarding a company owned by Mr.

Iannini or use of the site was provided in the title documents. However, anecdotal information suggests that Mr. Iannini was likely associated with the reported food processing operations. Oberg Bros., Inc. was a construction or contracting firm. Based on our review of historical information, it is likely that Oberg Bros. used 318 Kansas Street for offices, storage, and parking.

6.0 FIELD ACTIVITIES

6.1 Geophysical Clearance

Prior to initiating field activities, Groundwater Technology notified Underground Service Alert of proposed drilling activities. Utility locators were instructed to mark where off-site utilities came into the study area. Groundwater Technology also subcontracted Maverick, The Geophysical Services Company, Simi Valley, California. Maverick used geophysical methods to screen proposed drilling locations for subsurface obstructions and utilities on March 28, 1996.

6.2 Boring Selection and Soil Sample Collection

In a work plan dated March 25, 1996, Groundwater Technology proposed to collect soil samples from five locations to confirm the absence of significant contamination. The selection of these locations was based on the results of the Phase I investigation and on conversations with Mr. Takagi. Final sampling locations were selected as follows:

- Boring SB-1 was drilled to 20 feet below grade (bg) adjacent to the three-stage clarifier at Building No. 3.
- Boring SB-2 was drilled to 15 feet bg adjacent to the pipe fitting area.
- Boring SB-3 was drilled to 15 feet bg adjacent to the paint shed.
- Boring SB-4 and -5 were drilled to 5 feet bg along Kansas Street and Grand Avenue, respectively, in areas adjacent to the former railroad spur.

The five "push" soil borings were drilled on March 28, 1996 using a Geoprobe rig (push sampler) operated by Vironex, El Segundo, California. Soil samples were collected at 5-foot intervals from borings SB-1 through -3, and at 2.5 feet bg and 5 feet bg from borings SB-4 and -5. Soil recovered during drilling consisted of fine to medium grained sand. Groundwater was not encountered. The samples were in the field using a flame-ionization detector (FID). Soil types

and FID readings were logged for each sampling location. Copies of the boring logs are included as Appendix B.

Following collection, samples were properly labeled, sealed, and stored on ice. Sample identification numbers included the location number, and depth recovered (in feet) (e.g. SB-1 @ 5'). Between sampling runs, new liners were installed within the Geoprobe rig.

6.3 Sample Analysis

A total of 14 soil samples were submitted to Del Mar Analytical, Irvine, California, following proper chain of custody protocol. Of these, seven samples (at least one from each boring) were initially selected for one or more of the following analyses:

- 17 California assessment metals (CAM) following EPA methods 6010/7000 series
- total extractable hydrocarbon (TEH) screen following EPA method 8015 (modified)
- Total Recoverable Petroleum Hydrocarbons (TRPH) following EPA method 418.1
- pH following EPA method 9045
- volatile organic compounds (VOCs) following EPA method 8240

Boring ID	Sample Depths	Analyses
SB-1 (Clarifier)	5', 10', 15', & 20'	20' sample: VOCs (EPA Method 8240), CA 17 metals (EPA 6010/7000 series), pH (EPA 9045), TRPH (EPA 418.1)
SB-2 (Pipe fitting area)	5', 10' & 15'	5', 10', & 15' samples: TEH screen (EPA 8015), VOCs
SB-3 (Paint shed)	5', 10' & 15'	5' sample: TEH screen, VOCs
SB-4 (Railroad)	2.5' & 5'	5' sample: TEH screen, VOCs, CA 17 metals
SB-5 (Railroad)	2.5' & 5'	5' sample: TEH screen, VOCs, CA 17 metals

Analytical results are summarized in Tables 4 and 5. Copies of laboratory reports and chain of custody are provided in Appendix C.

Results of the sample collected from SB-1 indicate that pH was neutral, detectable TRPH and VOCs were not present, and CAM were below levels of concern. Levels of concern for CAM are defined as the total threshold limit concentrations (TTLC) used for waste characterization, as well as the preliminary remediation goals (PRGs) set by the United States Environmental Protection Agency, Region IX. The PRGs include risk-based action levels for both residential and industrial properties.

Sample SB-2 @5' contained 380 milligrams per kilogram (mg/kg) TEH and 2.3 micrograms per kilogram (ug/kg) perchloroethylene (PCE). No other VOCs were present above detection limits. Based on these analytical results, samples SB-2 @10' and SB-2 @15' were also analyzed for TEH and VOCs. The samples were analyzed within the appropriate holding times. Neither sample contained TEH or VOCs above the detection limits.

The concentration of PCE in sample SB-2 @5' was below the Maximum Contaminant Level (MCL) for drinking water, and therefore may be left in place. Soil screening levels from the RWQCB *Guidance for Remediation of Petroleum Impacted Soil* was used to evaluate TEH levels at the site. "Level D" screening levels for TEH (with carbon chain lengths of C13 - C22) is 10,000 mg/kg. Hence, the TEH level of 380 mg/kg may be left in place. This soil may be excavated and used as backfill at the site without raising environmental concern.

Sample SB-3 @5' contained 7.1 mg/kg TEH, but did not contain VOCs above detection limits. Samples SB-4 @5' and SB-5 @5' did not contain detectable VOCs or TEH, and CAM were below levels of concern as defined by the PRGs and TTLCs.

7.0 SUMMARY

Past Uses

Aerial photographs indicate that prior to 1938, no buildings were present within the study area. A chain-of-title search indicated that the six parcels within the study area changed ownership several times within the past 50 years. The absence of subsurface structures associated with Building No. 6 suggests that significant quantities of hazardous materials were not used in this building. Anecdotal information suggests that Building No. 3 may have been used for food processing operations; such operations typically do not involve large quantities of hazardous materials. In addition, International Rectifier's former parts assembly and print shop operations in Building No. 3 did not involve large quantities of hazardous materials. Because the concrete floor slab in the building is an impermeable barrier and no subsurface structures were associated with these operations, it is unlikely that potential spillage would have migrated to the

subsurface. Based on our review of the data presented in this report, Groundwater Technology believes that the risk of site contamination associated with former operations inside Building Nos. 3 and 6 is low to insignificant.

An oil well was located immediately north of the site. However, soil samples analyzed for TPH and TEH did not indicate the presence of crude oil. Hence, no significant environmental concerns have been identified in association with the former oil well operations.

A railroad line formerly ran through the southwest corner of the study area until the early 1980s. Results of soil samples collected in this area did not indicate the presence of detectable TEH or VOCs, and CAM were below levels of concern (*i.e.* below the PRGs and TTLCs). Hence, no significant environmental concerns have been identified in association with the former railroad operations.

Current Uses

International Rectifier currently uses Building No. 6 for offices and maintenance operations. Due to the small quantities of hazardous substances used in this building, these operations raise no environmental concerns. In addition, no visual indications of chemical releases were observed within the building. Hence, the risk of site contamination associated with current operations is low to insignificant.

Building No. 3 is currently used for offices and warehouse space. No hazardous materials associated with these operations have been identified, and no visual indications of chemical releases were observed within the buildings during the site visits. Hence, the risk of site contamination associated with current building use is low to insignificant.

The three-stage clarifier has historically been used for boiler water, cooling tower condensate, and blow down water. No records indicated that the clarifier was used for hazardous waste. Results of sample analysis confirm that clarifier operations have not impacted the subsurface. The soil pH was neutral, TRPH and VOCs were not detected, and CAM were below levels of concern (*i.e.* PRGs and TTLCs).

Because oils and degreasers are used in the pipe fitting area, Groundwater Technology collected soil samples in this area for TEH and VOC analysis. A soil sample collected at 5 feet bg contained 380 mg/kg TEH and 2.3 ug/kg PCE. However, samples collected at 10 and 15 feet bg did not contain detectable TEH or VOCs. These levels of TEH and PCE are below agency action levels. These soils may be left in place, or excavated and used for backfill on the site.

The paint storage shed stores paint thinners and solvents. A soil sample collected adjacent to this area contained 7.1 mg/kg TEH but did not contain detectable VOCs. This TEH level is well below the regulatory action level of 10,000 mg/kg of the RWQCB "Guidance for Remediation of Petroleum Impacted Soil". These analytical results confirm that this area raises no environmental concerns.

Based on the results of the limited Phase I and II investigations, Groundwater Technology believes that subsurface conditions at the 318 Kansas Street and 1521 E. Grand Avenue sites present very low environmental risk. TEH and PCE containing soils in the pipe fitting area may be left in place or used as backfill on the sites.

8.0 LIMITATIONS

The following limitation is derived from the American Society for Testing and Materials' (ASTM) *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*:

> No *environmental site assessment* can wholly eliminate uncertainty regarding the potential for *recognized environmental conditions* in connection with a *property*. Performance of this practice... is intended to reduce, but not eliminate, uncertainty regarding the potential for *recognized environmental conditions* in connection with a property and... recognize[s] reasonable limits of time and cost.

9.0 REFERENCES

United States Environmental Protection Agency. February 1, 1995. *Region IX Preliminary Remediation Goals (PRGs) First Half 1995.*

United States Geological Survey, 1964, Photorevised 1981. 7.5-Minute Quadrangle Series. Venice, California.

SOURCE: U.S.G.S. TOPOGRAPHIC QUADRANGLE
VENICE, CALIF.
7.5 MINUTE SERIES
1964/PHOTOREVISED 1981

SITE LOCATION

SCALE 1:24,000

0 2,000 4,000
SCALE FEET

GROUNDWATER TECHNOLOGY

SITE LOCATION MAP

CLIENT: INTERNATIONAL RECTIFIER	FILE: 0229-SL (1:1)	PROJECT NO.: 04250-0229	PM	PE/RG
LOCATION: 318 KANSAS ST. & 1521 E. GRAND AVE. EL SEGUNDO, CALIFORNIA	REV.		FIGURE: 1	
	DES. RAF	DET. EFK	DATE: 3-15-96	

LEGEND

- STUDY AREA
- FORMER OIL WELL
- SOIL BORING

WASHINGTON STREET

GROUNDWATER TECHNOLOGY

0 FEET 60
SCALE

SITE MAP

CLIENT: INTERNATIONAL RECTIFIER

LOCATION: 318 KANSAS ST. AND 1521 E. GRAND AVE. EL SEGUNDO, CALIFORNIA

FILE:	PROJECT NO.:
0229-SB (1:60)	04250-0229

REV.:

DES.:	DET.:	DATE:	FIGURE:
RAF	SP	4-2-96	2

PM: PE/RG:

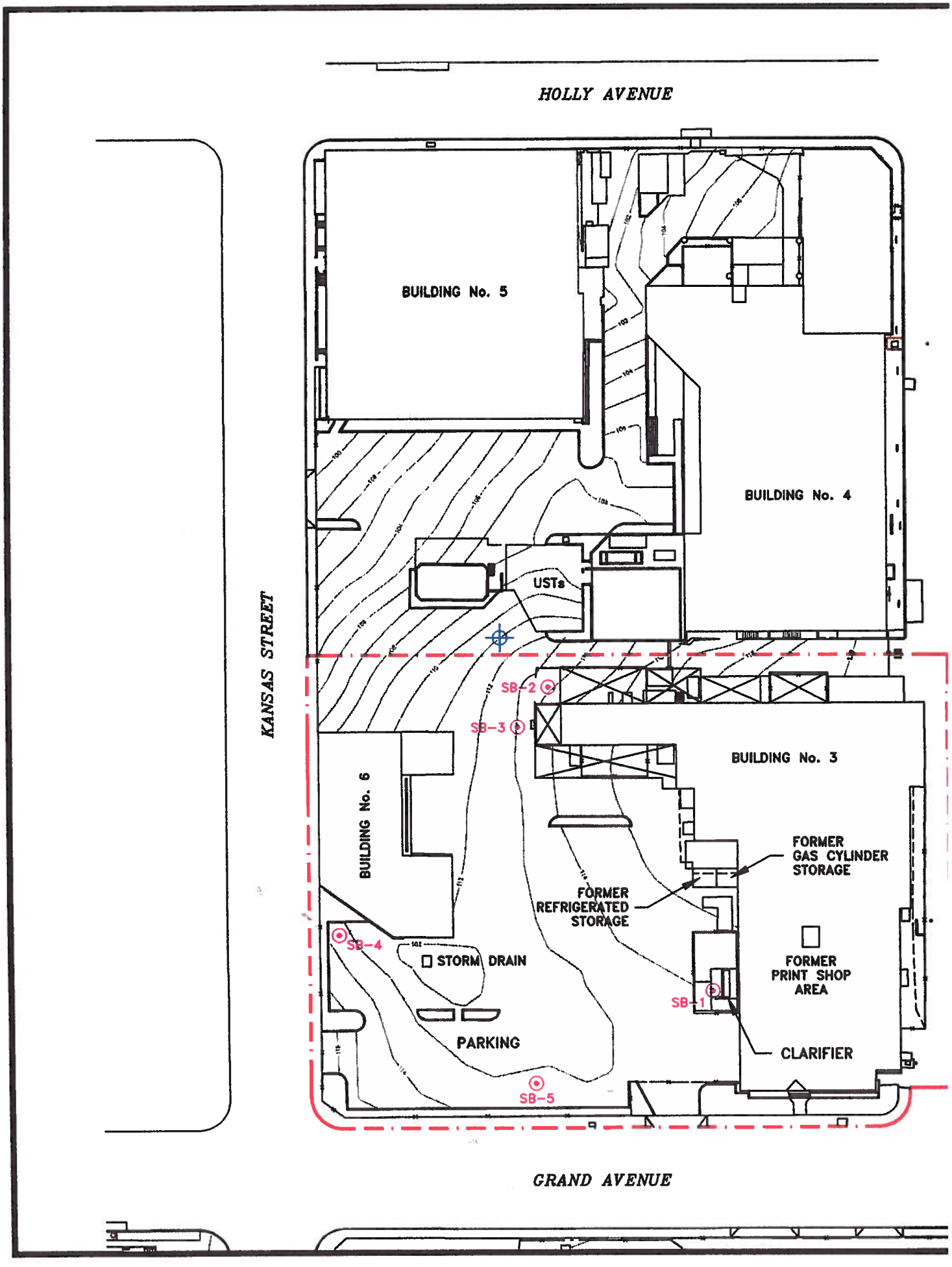

HOLLY AVENUE
KANSAS STREET
GRAND AVENUE
BUILDING No. 5
BUILDING No. 4
BUILDING No. 3
BUILDING No. 6
USTs
SB-1
SB-2
SB-3
SB-4
SB-5
STORM DRAIN
PARKING
FORMER GAS CYLINDER STORAGE
FORMER REFRIGERATED STORAGE
FORMER PRINT SHOP AREA
CLARIFIER

TABLE 1

Typical Inventories for Building No. 3
1521 Grand Avenue, El Segundo, California

Material	No. Units	Unit Size
Cold Storage		
Epoxy molding cmpd	6	45 pounds
HIPEL Semi-conductor Coating 1-4935	2	50 pounds
M-Pyrol	3	6 gallons
Polyamide coating	4	10 kilograms
Gas Cylinder Storage Area		
Acetylene	2	140 cubic feet (cf)
Argon	2	336 cf
Breathing Air	2	346 cf
Hydrogen	12	291 cf
Hydrogen Mix 82%	6	198 cf
Nitrogen	10	230 cf
Nitrogen Mix 80%	8	205 cf
Oxygen	12	251 cf

TABLE 2

Reviewed Aerial Photographs
318 Kansas Street and 1521 Grand Avenue, El Segundo, California

Photo ID	Date	Source
Unknown	1938	UCLA: Spence Aerial Photograph
110V-24	6-23-59	City of El Segundo: Pacific Air Industries
262V-104	1-6-66	City of El Segundo: Pacific Air Industries
7334-2	4-14-73	City of El Segundo: Unknown
2192-15	1973	City of El Segundo: Unknown
217	12-9-74	City of El Segundo: Robert J. Lung & Associates
217A	3-4-82	City of El Segundo: Robert J. Lung & Associates
Unknown	2-94	City of El Segundo: Air Photo Services, Inc.

TABLE 3

Chain of Title Summary
318 Kansas Street and 1521 Grand Avenue, El Segundo, California

Parcel ID	Owner					
230 & 264	F.L. Steele (?-1933)	Pearl E. Phelan (1933-1948)	Sam Block & Son (1948-1949)	Gennaro Iannini (1949-1951)	General Casualty of America (1951)	International Rectifier (1951-present)
231, 262, & 263	B.C. Metcalf (?-1927)	J.G. Kinsey et ux. (1927-1946)	W.T. & H.F. Anderson (1946-1949)	Gennaro Iannini (1949-1951)	General Casualty of America (1951)	International Rectifier (1951-present)
232	Pacific Southwest Bank (?-1926)	F.W. & J.F. Copinger (1926-1948)	J.F. Copinger (1948-1952)	Oberg Bros. Construction Co. (1952)	Oberg Bros. Inc. (1952-1957)	International Rectifier (1952-present)

TABLE 4

Summary of Soil Sample Analytical Results
318 Kansas Street and 1521 Grand Avenue, El Segundo, California

POTENTIAL SOURCE AREA	BORING ID	SAMPLE DEPTH (feet)	SAMPLE ID	Collection Date	8015M TEH (mg/kg)	418.1 TRPH (mg/kg)	8240 VOCs (ug/kg)	9045 pH	6010 7000 CAM
Clarifier	SB-1	20'	SB-1 @20'	3-28-96	--	ND	ND	7.1	<TTLC
Pipe Fitting Area	SB-2	5'	SB-2 @ 5'	3-28-96	380 (C9 - C40)	--	PCE 2.3	--	--
		10'	SB-2 @ 10'	3-28-96	ND	--	ND	--	--
		15'	SB-2 @ 15'	3-28-96	ND	--	ND	--	--
Paint Storage Shed	SB-3	5'	SB-3 @5'	3-28-96	7.1 (C8 - C38)	--	ND	--	--
Former Railroad Line	SB-4	5'	SB-4 @ 5'	3-28-96	ND	--	ND	--	<TTLC
	SB-5	5'	SB-5 @ 5'	3-28-96	ND	--	ND	--	<TTLC
Detection Limits	NA	NA	NA	NA	5.0	5.0	Varies	NA	Varies

Notes:
ND = Not detected
-- = Not analyzed
NA = Not applicable

TABLE 5

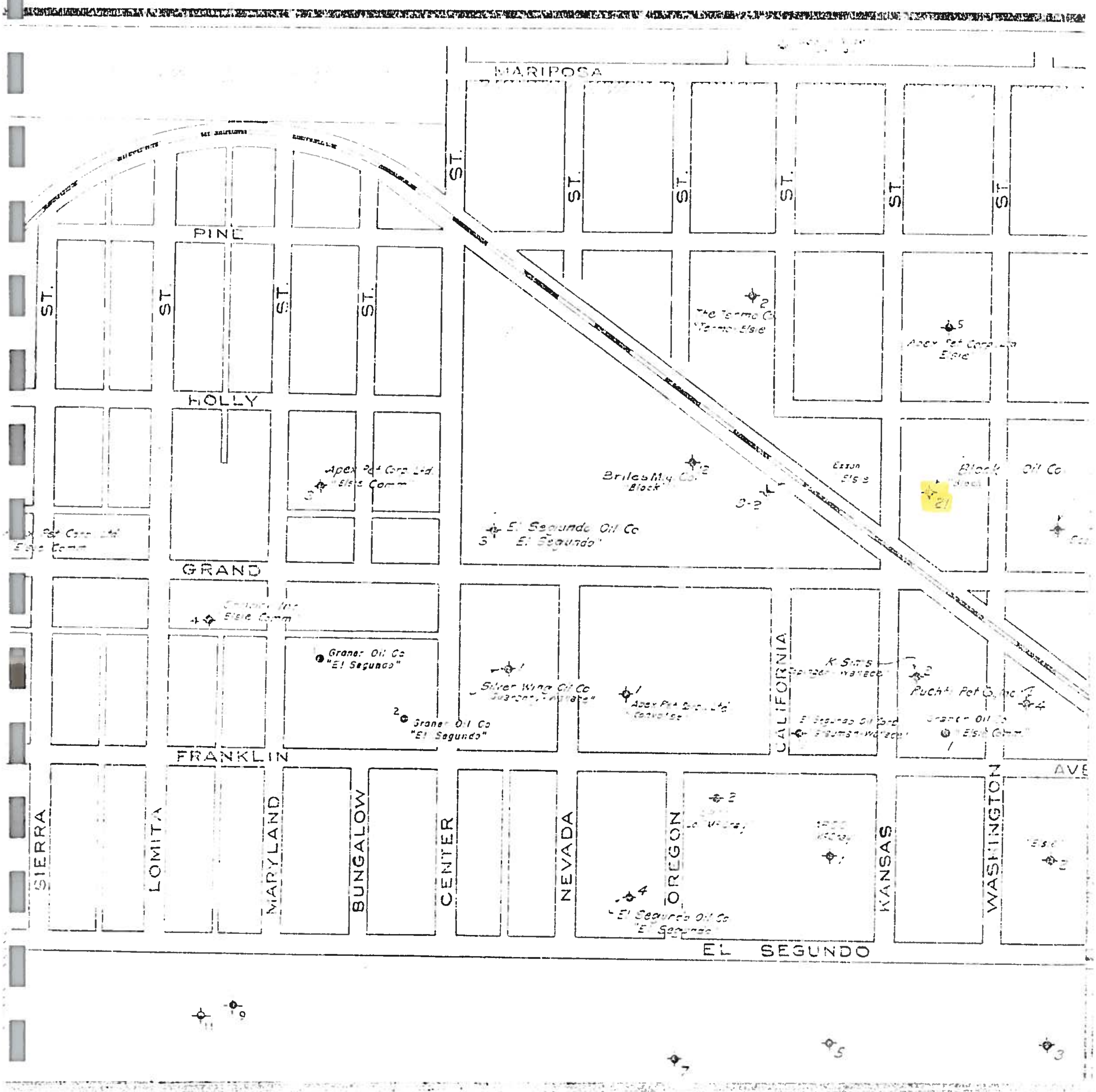
Metals Concentrations in Soil Samples
318 Kansas Street and 1521 E. Grand Avenue, El Segundo, CA

Sample	Collection Date	Sb	As	Ba	Be	Cd	Cr IV/ Cr total	Co	Cu	Pb	Hg	Mo	Ni	Se	Ag	Tl	V	Zn
SB-1 @20'	3-28-96	ND	ND	7.5	ND	ND	ND/ 7.0	ND	86	ND	ND	ND	27	ND	ND	ND	61	33
SB-4 @5	3-28-96	ND	ND	34	ND	ND	ND/ 6.1	1.7	8.3	ND	0.026	ND	2.2	ND	ND	ND	8.2	11
SB-5 @5'	3-28-96	ND	ND	29	ND	ND	ND/ 6.9	2.0	21	1.3	ND	ND	2.7	ND	ND	ND	10	16
Detection Limit	NA	5.0	1.0	0.50	0.10	0.10	0.25/ 0.50	0.50	0.50	1.0	0.020	0.50	0.50	1.0	0.50	5.0	0.50	0.50
TTLC Limit	NA	500	500	10,000	75	100	2,500 (total)	8,000	2,500	1,000	20	3,500	2,000	100	500	700	2,400	5,000
EPA Region IX PRGs (residential soils)	NA	31	0.32	5,300	0.14	9.0	210 (total)	NA	2,800	130	23	380	150	380	380	NA	540	23,000
EPA Region IX PRGs (industrial soils)	NA	680	2	10,000	1.1	850	1,600 (total)	NA	63,000	1,000	510	8,500	34,000	8,500	8,500	NA	12,000	100,000

Notes:
Results are reported in milligrams per kilogram (mg/kg), equivalent to parts per million (ppm).
ND = Not detected
Sb = Antimony As = Arsenic Ba = Barium Be = Beryllium Cd = Cadmium Cr = Chromium
Co = Cobalt Cu = Copper Pb = Lead Hg = Mercury Mo = Molybdenum Ni = Nickle
Se = Selenium Ag = Silver Tl = Thallium V = Vanadium Zn = Zinc

APPENDIX A

DOG OIL WELL RECORDS


MARIPOSA
PINE
HOLLY
GRAND
FRANKLIN
EL SEGUNDO
AVE
ST.
SIERRA
LOMITA
MARYLAND
BUNGALOW
CENTER
NEVADA
OREGON
CALIFORNIA
KANSAS
WASHINGTON
Apex Pet Corp Ltd
"Elsie Comm"
Briles Mfg Co.
"Block"
El Segundo Oil Co
"El Segundo"
Graner Oil Co
"El Segundo"
Silver King Oil Co
Black Oil Co
Puckett Pet Co Inc
K Sims
21

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

DIVISION OF OIL AND GAS
RECEIVED
19
LOS ANGELES, CALIFORNIA

Notice of Intention to Abandon Well

This notice must be given at least five days before work is to begin

Beverly Hills Calif. June 11, 19 48

DIVISION OF OIL AND GAS

Los Angeles Calif.

In compliance with Secs. 3228, 3229, 3230, 3231 and 3232, Ch. 93, Stat. 1939, notice is hereby given that it is our intention to abandon well No. 21

Sec. 12, T. 3 S., R. 15 W., S. B. B. & M. El Segundo Field,

Los Angeles County, commencing work on the 15th day of June, 19 48.

The present condition of the well is as follows:

1. Complete casing record.
   16" cem. 190'
   11-3/4" cem. 1289'
   6-5/8" cem. 6997', W. S. O.
   4-3/4" ld. 6970'-7208', perf. 7000'-7208'.
   T. D. 7208'.

2. Last produced. January, 1948 (Date) 4 B/D (Net oil) ____ (Gravity) 50% (Cut)

The proposed work is as follows:

1. Clean out to 7208'
2. Plug with cement 7208'-6950'
3. Pull 6-5/8" casing from as deep as possible.
4. Cap stub of 6-5/8" casing with 20' cement plug.
5. Plug with cement 1309'-1269'.
6. Cap well at surface and abandon.
7. Division of Oil & Gas to witness the placing of and the location and hardness of each cement plug.

	MAP	CARDS	BOND	FORMS	
				114	121

BLOCK OIL COMPANY
(Name of Operator)
By [signature]

ADDRESS NOTICE TO DIVISION OF OIL AND GAS IN DISTRICT WHERE WELL IS LOCATED

FORM 111
CALIFORNIA STATE PRINTING OFFICE

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

Report on Proposed Operations

No. P 1-45132

Los Angeles 15, Calif. June 16, 1948

Mr. H. G. Curtis
Venice, Calif.
Agent for BLOCK OIL COMPANY

DEAR SIR:

Your proposal to abandon Well No. 21,
Section 12, T. 3 S., R. 15 W., S. B. B. & M., El Segundo Field, Los Angeles County,
dated June 11, 1948, received June 14, 1948, has been examined in conjunction with records filed in this office.

Present conditions as shown by the records and the proposal are as follows:

RECORDS: The condition of the well is as stated in the notice.

THE NOTICE STATES:

"The present condition of the well is as follows:

1. Complete casing record.
   16" cem. 190'
   11-3/4" cem. 1089'
   6-5/8" cem. 6997', W. S. O.
   4-3/4" lr. 6970'-7208', perf. 7000'-7208'.
   T. D. 7208'.

2. Last produced. January, 1948 (Date) 4 B/D (Net oil) ____ (Gravity) 50% (Cut)

PROPOSAL:

"The proposed work is as follows:

1. Clean out to 7208'
2. Plug with cement 7208'-6950'
3. Pull 6-5/8" casing from as deep as possible.
4. Cap stub of 6-5/8" casing with 20' cement plug.
5. Plug with cement 1309'-1169'.
6. Cap well at surface and abandon.
7. Division of Oil & Gas to witness the placing of and the location and hardness of each cement plug."

DECISION:

THE PROPOSAL IS APPROVED PROVIDED THAT

1. The hole shall be kept full of heavy mud fluid at all times during the abandonment operations.
2. THIS DIVISION SHALL BE NOTIFIED AS FOLLOWS:
   (a) To witness the placing of and the location and hardness of each cement plug.
   (b) To inspect the completed surface cap or plug.

NOTE: A complete report in duplicate on the enclosed forms should be filed with this division after the completion of the above work.

GLB:GB

R. D. BUSH
State Oil and Gas Supervisor

By _____ Deputy

cc- Company

STATE OF CALIFORNIA

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

Special Report on Operations Witnessed

No. T 1-[illegible]

Los Angeles 15, Calif. July 2[illegible], 1948

Mr. [illegible]

[illegible], Calif.

Agent for [illegible] OIL COMPANY

Dear Sir:

Operations at your well No. 21, Sec. 12, T. [illegible], R. 1[illegible], [illegible] B. & M., [illegible] Field, in Los Angeles County, were witnessed by [illegible] White, Inspector, representative of the supervisor, on July 15, 1948. There was also present Jack Rogers, Contractor; John [illegible], Driller

Casing Record 15" cem. 19[illegible]'; 11-3/4" ce. 12[illegible]'; 6-5/8" [illegible] [illegible]97', [illegible]; 4-3/4" ld. 6970'-7208', perf. 7[illegible]-72[illegible]'. T. [illegible] 7208', plugged with cement from 7[illegible]-6955'

Junk None

The operations were performed for the purpose of testing the location and hardness of a cement [illegible] reported to be placed from 7208' to 6950', in the process of abandonment.

The inspector arrived at the well at xxxxxxxxxxxxx and Mr. xxxxxxxxxxxxxxxxxxxx reported:

[illegible] PAUL [illegible] VISITED THE WELL FROM 2:00 P.M. - 3:00 P.M. ON JULY 10, 1948, AND MR. ROGERS REPORTED that the well was cleaned out to 7206'.
THE INSPECTOR NOTED that plugging operations were started by dumping cement in the hole at 7206'.

[illegible] ARRIVED AT THE WELL AT 10:00 A.M. ON JULY 16, 1948, AND MR. [illegible] REPORTED that on July 10, 11, 14, and 15, 1948, 41 sacks of cement was dumped in the hole at and above 7206'.
THE INSPECTOR NOTED that the bailer could not be sounded below 6955' and brought up a sample of set cement.

The test was completed at 11:00 a.m.

[illegible] AND HARDNESS [illegible] CEMENT PLUG AT 6955' ARE APPROVED.

cc - [illegible]

[illegible]

R. D. BUSH

State Oil and Gas Supervisor

By [illegible] Deputy

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

Special Report on Operations Witnessed

No. T 1-4351g

Los Angeles 15, Calif. July 28, 19 48

Mr. E. G. Curtis
Venice, Calif.
Agent for BLOCK OIL COMPANY

DEAR SIR:

Operations at your well No. 21 Sec. 12, T. 3 S., R. 15 W., S. B. B. & M., El Segundo Field, in Los Angeles County, were witnessed by Paul Betts, Inspector, representative of the supervisor, on July 21, 19 48. There was also present John Mock, Driller
Clyde Spear, Helper

Casing Record	Junk
16" cem. 190'; 11-3/4" cem. 1289'; 6-5/8" cem. 6997', W.S.C., shot 1727' and pulled up to 1692'; 4-3/4" ld. 6970'-7208', perf. 7000'-7208'; T.D. 7208', plugged with cement from 7206'-6955' and 1727'-1677'±	None

The operations were performed for the purpose of witnessing the placing of a cement plug from 1727'-1677'± in the process of abandonment.

The inspector arrived at the well at 11:00 a.m. and Mr. Mock reported:

1. The 6-5/8" casing was shot at 1727' and was pulled from that depth.
2. The 6-5/8" casing was then pulled up to 1692'.
3. The hole caved and bridged at 1727'.

THE INSPECTOR NOTED that 10 sacks of cement was dumped into the hole beginning at 1727', calculated to fill to 1677'.

The operations were completed at 12:30 p.m.

THE PLUGGING OPERATIONS AS WITNESSED AND REPORTED ARE APPROVED.

cc - Company

PB:EC

R. D. BUSH
State Oil and Gas Supervisor

By [signature] Deputy

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

Special Report on Operations Witnessed

No. T 1-48547

Los Angeles 15, Calif. August 5, 1948

Mr. E. G. Curtis
Venice, Calif.
Agent for BLOCK OIL COMPANY

DEAR SIR:

Operations at your well No. 21 Sec. 12, T. 3 S., R. 15 W., S. B. B. & M., El Segundo Field, in Los Angeles County, were witnessed by Paul Betts, Inspector, representative of the supervisor, on July 26, 1948. There was also present J. Rogers, Contractor; J. Mock, Driller.

Casing Record 16" cem. 190'; 11-3/4" cem. 1289'; 6-5/8" cem. 6997'; W.S.O., shot 1805', and 1727', and pulled up to 1692', shot 1608', 1522', 1400', 1283', 1160', and pulled from 1070'; 4-3/4" ld. 6970'-7208', perf. 7000'-7208'; T. D. 7208', plugged with cement from 7205'-6955', 1727'-1677'±, and 960'-941'.

Junk None

The operations were performed for the purpose of testing the location and hardness of a cement plug placed from 960' to 941' in the process of abandonment.

~~The inspection [illegible] reported~~

INSPECTOR BETTS VISITED THE WELL AT 1:00 P. M., JULY 24, 1948, AND MR. ROGERS REPORTED:
1. The 6-5/8" casing was shot at 1805', 1727', 1608', 1522', 1400', 1283', 1160', and 1070', and was pulled from the latter depth.
2. The hole could not be cleaned out below 960' due to heaving sand.

THE INSPECTOR NOTED THAT plugging operations were started by dumping cement in the hole at 960'.

THE INSPECTOR ARRIVED AT THE WELL AT 11:00 A. M., JULY 26, 1948, AND MR. ROGERS REPORTED THAT on July 24, 1948, 12 sacks of cement was dumped in the hole beginning at 960'.

THE INSPECTOR NOTED THAT the bailer could not be spudded below 941' and brought up a sample of set cement.

The test was completed at 11:30 a.m.

THE LOCATION AND HARDNESS OF THE CEMENT PLUG AT 941' ARE APPROVED.

[illegible]

cc- Company

R. D. BUSH
State Oil and Gas Supervisor

By [illegible] Deputy

1115 West Olympic Boulevard
Los Angeles 15, California
October 6, 1948

Mr. E. G. Curtis
121 Avenue 34
Venice, California

Agent for Block Oil Company

Dear Sir:

Your report of abandonment of well No. 21, Sec. 12, T. 3 S., R. 15 W., S. B. B. & M., El Segundo oil field, Los Angeles County, dated September 7, 1948, and submitted to this division on our form No. 103, has been examined in conjunction with records filed in this office.

A review of the reports and records shows that the requirements of this division, which are based on all information filed with it, have been fulfilled.

Yours truly,

R. D. BUSH
State Oil and Gas Supervisor

By E. H. Maurer
Deputy Supervisor

cc - Mr. R. D. Bush
Germany

es

MAP			BOND	FORMS 114	121
52 JLW	JLW				

B

APPENDIX B

DRILLING LOGS

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-1

Project IRC PHASE II EL SEGUNDO Owner INTERNATIONAL RECTIFIER
Location 318 KANSAS ST. / 1521 E. GRAND AVE Proj. No. 04250.229
Surface Elev. NA ft. Total Hole Depth 21 ft. Diameter 2" in.
Top of Casing NA ft. Water Level Initial NA ft. Static -- ft.
Screen: Dia NA in. Length NA ft. Type/Size NA in.
Casing: Dia NA in. Length NA ft. Type NA
Fill Material Bentonite Rig/Core GEOPROBE 5400 2" dia.
Drill Co. VIRONEX Method Geoprobe
Driller Mason Levine Log By Grant Williams Date 3/28/96 Permit # NA
Checked By Larry Higinbotham License No. RG No. 5497 Larry Higinbotham

See Site Map For Boring Location

COMMENTS:

Depth (ft.)	FID (ppm)	Sample ID	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
0				Con	2.5" Concrete Drilled.
4	0	SB-1 -5			Poorly Graded SAND: Light olive-brown, 100% fine sand; moist, no odor.
10	0	SB-1 -10		SP	Poorly Graded SAND: Light brown, 70% very fine sand, 30% fine sand; moist, no odor.
16	0	SB-1 -15			Poorly Graded SAND: Yellowish-brown, 50% very fine sand, 50% fine sand; moist, no odor.
20	0	SB-1 -20			Poorly Graded SAND: Light brown, 100% very fine sand; moist, no odor.
					Drilled to 19 feet. Sampled to 21 feet. No groundwater encountered. Boring backfilled with bentonite chips and topped with readymix cement. All percentages are approximate.

03/29/96 fithlog-mar93

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-2

Project IRC PHASE II EL SEGUNDO Owner INTERNATIONAL RECTIFIER
Location 318 KANSAS ST. / 1521 E. GRAND AVE Proj. No. 04250029
Surface Elev. NA ft. Total Hole Depth 16 ft. Diameter 2" in.
Top of Casing NA ft. Water Level Initial NA ft. Static -- ft.
Screen: Dia NA in. Length NA ft. Type/Size NA in.
Casing: Dia NA in. Length NA ft. Type NA
Fill Material Bentonite Rig/Core GEOPROBE 5400 2" dia.
Drill Co. VIRONEX Method Geoprobe
Driller Mason Levine Log By Grant Williams Date 3/28/96 Permit # NA
Checked By Larry Higinbotham License No. RG No. 5497 Larry Higinbotham

See Site Map For Boring Location

COMMENTS:

Depth (ft.)	FID (ppm)	Sample ID	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
0				ASP	1.5" Asphalt Drilled.
4	0	SB-2 -5			Poorly Graded SAND: Dark brown, 100% very fine sand; moist, no odor.
8				SP	
10	0	SB-2 -10			Poorly Graded SAND: Brown, 100% very fine sand; moist, no odor.
14	0	SB-2 -15			Poorly Graded SAND: Reddish-brown, 95% very fine sand, 5% silt; moist, no odor.
16					Drilled to 14 feet. Sampled to 16 feet. No groundwater encountered. Boring backfilled with bentonite chips and topped with readymix cement. All percentages are approximate.

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-3

See Site Map For Boring Location

COMMENTS:

Project IRC PHASE II EL SEGUNDO Owner INTERNATIONAL RECTIFIER
Location 318 KANSAS ST. / 1521 E. GRAND AVE Proj. No. 042500229
Surface Elev. NA ft. Total Hole Depth 16 ft. Diameter 2" in.
Top of Casing NA ft. Water Level Initial NA ft. Static -- ft.
Screen: Dia NA in. Length NA ft. Type/Size NA in.
Casing: Dia NA in. Length NA ft. Type NA
Fill Material Bentonite Rig/Core GEOPROBE 5400 2" dia.
Drill Co. VIRONEX Method Geoprobe
Driller Mason Levine Log By Grant Williams Date 3/28/96 Permit # NA
Checked By Larry Higinbotham License No. RG No. 5497 [signature]

Depth (ft.)	FID (ppm)	Sample ID	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2					
0				ASP	1.5" Asphalt Drilled.
2					
4					
5	0	SB-3 -5			Poorly Graded SAND: Dark brown, 50% very fine sand, 50% fine sand; moist, no odor.
6					
8				SP	
10	0	SB-3 -10			Poorly Graded SAND: Light brown, 90% very fine sand, 10% fine sand; moist, no odor.
12					
14					
15	0	SB-3 -15			Poorly Graded SAND: Reddish-brown, 95% very fine sand, 5% silt; moist, no odor.
16					Drilled to 14 feet. Sampled to 16 feet. No groundwater encountered. Boring backfilled with bentonite chips and topped with readymix cement. All percentages are approximate.
18					
20					
22					
24					

03/29/1996 lithlog-mar93

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-4

Project IRC PHASE II EL SEGUNDO Owner INTERNATIONAL RECTIFIER
Location 318 KANSAS ST. / 1521 E. GRAND AVE Proj. No. 04-2500229
Surface Elev. NA ft. Total Hole Depth 6 ft. Diameter 2" in.
Top of Casing NA ft. Water Level Initial NA ft. Static -- ft.
Screen: Dia NA in. Length NA ft. Type/Size NA in.
Casing: Dia NA in. Length NA ft. Type NA
Fill Material Bentonite Rig/Core GEOPROBE 5400 2" dia.
Drill Co. VIRONEX Method Geoprobe
Driller Mason Levine Log By Grant Williams Date 3/28/96 Permit # NA
Checked By Larry Higinbotham License No. RG No. 5497 Larry Higinbotham

See Site Map For Boring Location

COMMENTS:

Depth (ft.)	FID (ppm)	Sample ID	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2					
0				ASD	4" Asphalt Drilled.
2	0	SB-4 -2.5		SP	Poorly Graded SAND: Dark brown to black, 100% fine sand; damp, no odor.
4					
6	0	SB-4 -6			Poorly Graded SAND: Dark brown, 100% very fine sand; moist, no odor.
8					Drilled to 4 feet. Sampled to 6 feet. No groundwater encountered. Boring backfilled with bentonite chips and topped with readymix cement. All percentages are approximate.
10					
12					
14					
16					
18					
20					
22					
24					

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-5

Project IRC PHASE II EL SEGUNDO Owner INTERNATIONAL RECTIFIER
Location 318 KANSAS ST. / 1521 E. GRAND AVE Proj. No. 0-12500.239
Surface Elev. NA ft. Total Hole Depth 6 ft. Diameter 2" in.
Top of Casing NA ft. Water Level Initial NA ft. Static -- ft.
Screen: Dia NA in. Length NA ft. Type/Size NA in.
Casing: Dia NA in. Length NA ft. Type NA
Fill Material Bentonite Rig/Core GEOPROBE 5400 2" dia.
Drill Co. VIRONEX Method Geoprobe
Driller Mason Levine Log By Grant Williams Date 3/28/96 Permit # NA
Checked By Larry Higinbotham License No. RG No. 5497 Larry Higinbotham

See Site Map For Boring Location

COMMENTS:

Depth (ft.)	FID (ppm)	Sample ID	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2					
0				ASP	4" Asphalt Drilled.
2	0	SB-5 -2.5		SP	Poorly Graded SAND: Brown, 100% very fine sand; dry, no odor.
4	0	SB-5 -6			Poorly Graded SAND: Dark brown, 100% very fine sand; dry, no odor.
6					Drilled to 4 feet. Sampled to 6 feet. No groundwater encountered. Boring backfilled with bentonite chips and topped with readymix cement. All percentages are approximate.
8					
10					
12					
14					
16					
18					
20					
22					
24					

APPENDIX C

LABORATORY REPORTS AND CHAIN OF CUSTODY DOCUMENTATION

Del Mar Analytical

2852 Alton Ave., Irvine, CA 92714 (714) 261-1022 FAX (714) 261-1228
1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (909) 370-1046
16525 Sherman Way, Suite C-11, Van Nuys, CA 91406 (818) 779-1844 FAX (818) 779-1843
2465 W. 12th St., Suite 1, Tempe, AZ 85281 (602) 968-8272 FAX (602) 968-1338

Groundwater Technology
20000/200 Mariner Ave.
Torrance, CA 90503-1670
Attention: Rachel Fischer

Client Project ID: IRC Phase II
318 Kansas St. & 1521 Grand
Sample Descript: Soil, SB-1 @ 20'
Lab Number: FC03988

Sampled: Mar 28, 1996
Received: Mar 28, 1996
Extracted: Apr 2, 1996
Analyzed: Apr 2, 1996
Reported: Apr 2, 1996

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/Kg (ppb)	Sample Result µg/Kg (ppb)
Acetone	10	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	5.0	N.D.
2-Butanone	10	N.D.
Carbon disulfide	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	5.0	N.D.
2-Chloroethyl vinyl ether	2.0	N.D.
Chloroform	2.0	N.D.
Chloromethane	5.0	N.D.
1,1-Dichloroethane	2.0	N.D.
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	5.0	N.D.
cis-1,2-Dichloroethene	2.0	N.D.
trans-1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis-1,3-Dichloropropene	2.0	N.D.
trans-1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10	N.D.
Methylene chloride	10	N.D.
4-Methyl-2-pentanone	5.0	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl acetate	5.0	N.D.
Vinyl chloride	5.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

DEL MAR ANALYTICAL, IRVINE (ELAP #1197)

Gary Steube
Laboratory Director

Surrogate Standard Recoveries (Accept. Limits):	
1,2-Dichloroethane-d4 (70-121)	97%
Toluene-d8 (81-117)	102%
4-Bromofluorobenzene (74-121)	97%

Del Mar Analytical

2852 Alton Ave., Irvine, CA 92714 (714) 261-1022 FAX (714) 261-1228
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2465 W. 12th St., Suite 1, Tempe, AZ 85281 (602) 968-8272 FAX (602) 968-1338

Groundwater Technology
20000/200 Mariner Ave.
Torrance, CA 90503-1670
Attention: Rachel Fischer

Client Project ID: IRC Phase II
318 Kansas St. & 1521 Grand
Sample Descript: Soil, SB-2 @ 5'
Lab Number: FC03989

Sampled: Mar 28, 1996
Received: Mar 28, 1996
Extracted: Apr 2, 1996
Analyzed: Apr 2, 1996
Reported: Apr 2, 1996

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/Kg (ppb)	Sample Result µg/Kg (ppb)
Acetone	10	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	5.0	N.D.
2-Butanone	10	N.D.
Carbon disulfide	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	5.0	N.D.
2-Chloroethyl vinyl ether	2.0	N.D.
Chloroform	2.0	N.D.
Chloromethane	5.0	N.D.
1,1-Dichloroethane	2.0	N.D.
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	5.0	N.D.
cis-1,2-Dichloroethene	2.0	N.D.
trans-1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis-1,3-Dichloropropene	2.0	N.D.
trans-1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10	N.D.
Methylene chloride	10	N.D.
4-Methyl-2-pentanone	5.0	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	**2.0**	**2.3**
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl acetate	5.0	N.D.
Vinyl chloride	5.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

DEL MAR ANALYTICAL, IRVINE (ELAP #1197)

Gary Steube
Laboratory Director

Surrogate Standard Recoveries (Accept. Limits):	
1,2-Dichloroethane-d4 (70-121)	99%
Toluene-d8 (81-117)	102%
4-Bromofluorobenzene (74-121)	107%

Del Mar Analytical

2852 Alton Ave., Irvine, CA 92714 (714) 261-1022 FAX (714) 261-1228
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2465 W. 12th St., Suite 1, Tempe, AZ 85281 (602) 968-8272 FAX (602) 968-1358

Groundwater Technology
20000/200 Mariner Ave
Torrance, CA 90503-1670
Attention: Rachel Fischer

Client Project ID: IRC Phase II
318 Kansas St & 1521 Grand
Sample Descript: Soil, SB-3 @ 5'
Lab Number: FC03990

Sampled: Mar 28, 1996
Received: Mar 28, 1996
Extracted: Apr 2, 1996
Analyzed: Apr 2, 1996
Reported: Apr 2, 1996

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/Kg (ppb)	Sample Result µg/Kg (ppb)
Acetone	10	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	5.0	N.D.
2-Butanone	10	N.D.
Carbon disulfide	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	5.0	N.D.
2-Chloroethyl vinyl ether	2.0	N.D.
Chloroform	2.0	N.D.
Chloromethane	5.0	N.D.
1,1-Dichloroethane	2.0	N.D.
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	5.0	N.D.
cis-1,2-Dichloroethene	2.0	N.D.
trans-1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis-1,3-Dichloropropene	2.0	N.D.
trans-1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10	N.D.
Methylene chloride	10	N.D.
4-Methyl-2-pentanone	5.0	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl acetate	5.0	N.D.
Vinyl chloride	5.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

DEL MAR ANALYTICAL, IRVINE (ELAP #1197)

Gary Steube
Laboratory Director

Surrogate Standard Recoveries (Accept. Limits):	
1,2-Dichloroethane-d4 (70-121)	98%
Toluene-d8 (81-117)	99%
4-Bromofluorobenzene (74-121)	97%

Del Mar Analytical

2852 Alton Ave., Irvine, CA 92714 (714) 261-1022 FAX (714) 261-1228
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2465 W. 12th St., Suite 1, Tempe, AZ 85281 (602) 968-8272 FAX (602) 968-1358

Groundwater Technology
20000/200 Mariner Ave.
Torrance, CA 90503-1670
Attention: Rachel Fischer

Client Project ID: IRC Phase II
318 Kansas St. & 1521 Grand
Sample Descript: Soil, SB-4 @ 5'
Lab Number: FC03991

Sampled: Mar 28, 1996
Received: Mar 28, 1996
Extracted: Apr 2, 1996
Analyzed: Apr 2, 1996
Reported: Apr 2, 1996

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/Kg (ppb)	Sample Result µg/Kg (ppb)
Acetone	10	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	5.0	N.D.
2-Butanone	10	N.D.
Carbon disulfide	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	5.0	N.D.
2-Chloroethyl vinyl ether	2.0	N.D.
Chloroform	2.0	N.D.
Chloromethane	5.0	N.D.
1,1-Dichloroethane	2.0	N.D.
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	5.0	N.D.
cis-1,2-Dichloroethene	2.0	N.D.
trans-1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis-1,3-Dichloropropene	2.0	N.D.
trans-1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10	N.D.
Methylene chloride	10	N.D.
4-Methyl-2-pentanone	5.0	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl acetate	5.0	N.D.
Vinyl chloride	5.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

DEL MAR ANALYTICAL, IRVINE (ELAP #1197)

Gary Steube
Laboratory Director

Surrogate Standard Recoveries (Accept. Limits):	
1,2-Dichloroethane-d4 (70-121)	98%
Toluene-d8 (81-117)	103%
4-Bromofluorobenzene (74-121)	97%

Del Mar Analytical

2852 Alton Ave., Irvine, CA 92714 (714) 261-1022 FAX (714) 261-1228
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2465 W. 12th St., Suite 1, Tempe, AZ 85281 (602) 968-8272 FAX (602) 968-1338

Groundwater Technology
20000/200 Mariner Ave.
Torrance, CA 90503-1670
Attention: Rachel Fischer

Client Project ID: IRC Phase II
318 Kansas St. & 1521 Grand
Sample Descript: SB-5 @ 5'
Lab Number: FC03992

Sampled: Mar 28, 1996
Received: Mar 28, 1996
Extracted: Apr 2, 1996
Analyzed: Apr 2, 1996
Reported: Apr 2, 1996

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/Kg (ppb)	Sample Result µg/Kg (ppb)
Acetone	10	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	5.0	N.D.
2-Butanone	10	N.D.
Carbon disulfide	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	5.0	N.D.
2-Chloroethyl vinyl ether	2.0	N.D.
Chloroform	2.0	N.D.
Chloromethane	5.0	N.D.
1,1-Dichloroethane	2.0	N.D.
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	5.0	N.D.
cis-1,2-Dichloroethene	2.0	N.D.
trans-1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis-1,3-Dichloropropene	2.0	N.D.
trans-1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10	N.D.
Methylene chloride	10	N.D.
4-Methyl-2-pentanone	5.0	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl acetate	5.0	N.D.
Vinyl chloride	5.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

DEL MAR ANALYTICAL, IRVINE (ELAP #1197)

Gary Steube
Laboratory Director

Surrogate Standard Recoveries (Accept. Limits):	
1,2-Dichloroethane-d4 (70-121)	96%
Toluene-d8 (81-117)	102%
4-Bromofluorobenzene (74-121)	93%

Del Mar Analytical

2852 Alton Ave., Irvine, CA 92714 (714) 261-1022 FAX (714) 261-1228
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2465 W. 12th St., Suite 1, Tempe, AZ 85281 (602) 968-8272 FAX (602) 968-1338

Groundwater Technology
20000/200 Mariner Ave.
Torrance, CA 90503-1670
Attention: Rachel Fischer

Client Project ID: IRC Phase II
318 Kansas St. & 1521 Grand
Sample Descript: Soil, SB-1 @ 20'
Lab Number: FC03988

Sampled: Mar 28, 1996
Received: Mar 28, 1996
Extracted: 3/29-4/2, 1996
Analyzed: 3/29-4/2, 1996
Reported: Apr 2, 1996

CALIFORNIA CODE OF REGULATIONS, TITLE 22 METALS

Analyte	EPA Method	STLC Max. Limit mg/L (ppm)	TTLC Max. Limit mg/Kg (ppm)	Detection Limit mg/Kg (ppm)		TTLC Sample Result mg/Kg (ppm)
Antimony	6010	15	500	5.0		N.D.
Arsenic	6010	5.0	500	1.0		N.D.
Barium	6010	100	10000	0.50		7.5
Beryllium	6010	0.75	75	0.10		N.D.
Cadmium	6010	1.0	100	0.10		N.D.
Chromium, VI	7196	5.0	500	0.25		N.D.
Chromium, total	6010	5.0	2500	0.50		7.0
Cobalt	6010	80	8000	0.50		N.D.
Copper	6010	25	2500	0.50		86
Lead	6010	5.0	1000	1.0		N.D.
Mercury	7471	0.20	20	0.020		N.D.
Molybdenum	6010	350	3500	0.50		N.D.
Nickel	6010	20	2000	0.50		2.7
Selenium	6010	1.0	100	1.0		N.D.
Silver	6010	5.0	500	0.50		N.D.
Thallium	6010	7.0	700	5.0		N.D.
Vanadium	6010	24	2400	0.50		6.1
Zinc	6010	250	5000	0.50		33

Analytes reported as N.D. were not present above the stated limit of detection.

DEL MAR ANALYTICAL, IRVINE (ELAP #1197)

Gary Steube
Laboratory Director

Del Mar Analytical

2852 Alton Ave., Irvine, CA 92714 (714) 261-1022 FAX (714) 261-1228
1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (909) 370-1046
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2465 W. 12th St., Suite 1, Tempe, AZ 85281 (602) 968-8272 FAX (602) 968-1338

Groundwater Technology
20000/200 Mariner Ave.
Torrance, CA 90503-1670
Attention: Rachel Fischer

Client Project ID: IRC Phase II
318 Kansas St. & 1521 Grand
Sample Descript: Soil, SB-4 @ 5'
Lab Number: FC03991

Sampled: Mar 28, 1996
Received: Mar 28, 1996
Extracted: 3/29-4/2, 1996
Analyzed: 3/29-4/2, 1996
Reported: Apr 2, 1996

CALIFORNIA CODE OF REGULATIONS, TITLE 22 METALS

Analyte	EPA Method	STLC Max. Limit mg/L (ppm)	TTLC Max. Limit mg/Kg (ppm)	Detection Limit mg/Kg (ppm)		TTLC Sample Result mg/Kg (ppm)
Antimony	6010	15	500	5.0		N.D.
Arsenic	6010	5.0	500	1.0		N.D.
Barium	6010	100	10000	0.50		34
Beryllium	6010	0.75	75	0.10		N.D.
Cadmium	6010	1.0	100	0.10		N.D.
Chromium, VI	7196	5.0	500	0.25		N.D.
Chromium, total	6010	5.0	2500	0.50		6.1
Cobalt	6010	80	8000	0.50		1.7
Copper	6010	25	2500	0.50		8.3
Lead	6010	5.0	1000	1.0		N.D.
Mercury	7471	0.20	20	0.020		0.026
Molybdenum	6010	350	3500	0.50		N.D.
Nickel	6010	20	2000	0.50		2.2
Selenium	6010	1.0	100	1.0		N.D.
Silver	6010	5.0	500	0.50		N.D.
Thallium	6010	7.0	700	5.0		N.D.
Vanadium	6010	24	2400	0.50		8.2
Zinc	6010	250	5000	0.50		11

Analytes reported as N.D. were not present above the stated limit of detection.

DEL MAR ANALYTICAL, IRVINE (ELAP #1197)

Gary Steube
Laboratory Director

Del Mar Analytical

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Groundwater Technology
20000/200 Mariner Ave
Torrance, CA 90503-1670
Attention: Rachel Fischer

Client Project ID: IRC Phase II
318 Kansas St. & 1521 Grand
Sample Descript: Soil, SB-5 @ 5'
Lab Number: FC03992

Sampled: Mar 28, 1996
Received: Mar 28, 1996
Extracted: 3/29-4/2, 1996
Analyzed: 3/29-4/2, 1996
Reported: Apr 2, 1996

CALIFORNIA CODE OF REGULATIONS, TITLE 22 METALS

Analyte	EPA Method	STLC Max. Limit mg/L (ppm)	TTLC Max. Limit mg/Kg (ppm)	Detection Limit mg/Kg (ppm)		TTLC Sample Result mg/Kg (ppm)
Antimony	6010	15	500	5.0		N.D.
Arsenic	6010	5.0	500	1.0		N.D.
Barium	6010	100	10000	0.50		29
Beryllium	6010	0.75	75	0.10		N.D.
Cadmium	6010	1.0	100	0.10		N.D.
Chromium, VI	7196	5.0	500	0.25		N.D.
Chromium, total	6010	5.0	2500	0.50		6.9
Cobalt	6010	80	8000	0.50		2.0
Copper	6010	25	2500	0.50		21
Lead	6010	5.0	1000	1.0		1.3
Mercury	7471	0.20	20	0.020		N.D.
Molybdenum	6010	350	3500	0.50		N.D.
Nickel	6010	20	2000	0.50		2.7
Selenium	6010	1.0	100	1.0		N.D.
Silver	6010	5.0	500	0.50		N.D.
Thallium	6010	7.0	700	5.0		N.D.
Vanadium	6010	24	2400	0.50		10
Zinc	6010	250	5000	0.50		16

Analytes reported as N.D. were not present above the stated limit of detection.

DEL MAR ANALYTICAL, IRVINE (ELAP #1197)

Gary Steube
Laboratory Director

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Groundwater Technology
20000/200 Mariner Ave.
Torrance, CA 90503-1670
Attention: Rachel Fischer

Client Project ID: IRC Phase II
318 Kansas St. & 1521 Grand
Analysis Method: EPA 418.1 (I.R. with clean-up)
First Sample #: FC03988

Sampled	Mar 28, 1996
Received	Mar 28, 1996
Extracted	Mar 29, 1996
Analyzed	Mar 29, 1996
Reported	Apr 2, 1996

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS (EPA 418.1)

Laboratory Number	Sample Description Soil	Petroleum Hydrocarbons mg/Kg (ppm)
FC03988	SB-1 @ 20'	N.D.

Detection Limit:	5.0

Analytes reported as N.D. were not present above the stated limit of detection.

DEL MAR ANALYTICAL, IRVINE (ELAP #1197)

Gary Stelbe
Laboratory Director

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Groundwater Technology
20000/200 Mariner Ave.
Torrance, CA 90503-1670
Attention: Rachel Fischer

Client Project ID: IRC Phase II
318 Kansas St. & 1521 Grand
Sample Descript: Soil
First Sample #: FC03988

Sampled: Mar 28, 1996
Received: Mar 28, 1996
Extracted: Mar 28, 1996
Analyzed: Mar 28, 1996
Reported: Apr 2, 1996

pH (EPA 9045)

Laboratory Number	Sample Description	Sample Result
FC03988	SB-1 @ 20'	7.1

DEL MAR ANALYTICAL, IRVINE (ELAP #1197)

Gary Steuce
Laboratory Director

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Groundwater Technology
20000/200 Mariner Ave.
Torrance, CA 90503-1670
Attention: Rachel Fischer

Client Project ID: IRC Phase II
318 Kansas St. & 1521 Grand
Analysis Method: EPA 3550/CA DHS Mod. 8015
First Sample #: FC03989

Sampled: Mar 28, 1996
Received: Mar 28, 1996
Extracted: Apr 2, 1996
Analyzed: Apr 2, 1996
Reported: Apr 2, 1996

EXTRACTABLE FUEL HYDROCARBONS (CA DHS Mod. EPA 8015)

Laboratory Number	Sample Description Soil	Extractable Hydrocarbons mg/Kg (ppm)	Hydrocarbon Type
FC03989	SB-2 @ 5'	380	C16-C40
FC03990	SB-3 @ 5'	7.1	C8-C38
FC03991	SB-4 @ 5'	N.D.	N.A.
FC03992	SB-5 @ 5'	N.D.	N.A.

Detection Limit:	5.0

Extractable Hydrocarbons are quantitated against a diesel fuel standard. Hydrocarbons detected by this method range from C8 to C40.

Analytes reported as N.D. were not present above the stated limit of detection.

DEL MAR ANALYTICAL, IRVINE (ELAP #1197)

Gary Steube
Laboratory Director

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Groundwater Technology
20000/200 Mariner Ave.
Torrance, CA 90503-1670
Attention: Rachel Fischer

Method Blank

Extracted: Apr 2, 1996
Analyzed: Apr 2, 1996
Reported: Apr 2, 1996
Matrix: Soil

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/Kg (ppb)	Sample Result µg/Kg (ppb)
Acetone	10	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	5.0	N.D.
2-Butanone	10	N.D.
Carbon disulfide	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	5.0	N.D.
2-Chloroethyl vinyl ether	2.0	N.D.
Chloroform	2.0	N.D.
Chloromethane	5.0	N.D.
1,1-Dichloroethane	2.0	N.D.
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	5.0	N.D.
cis-1,2-Dichloroethene	2.0	N.D.
trans-1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis-1,3-Dichloropropene	2.0	N.D.
trans-1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10	N.D.
Methylene chloride	10	N.D.
4-Methyl-2-pentanone	5.0	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl acetate	5.0	N.D.
Vinyl chloride	5.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

DEL MAR ANALYTICAL, IRVINE (ELAP #1197)

Gary Steube
Laboratory Director

Surrogate Standard Recoveries (Accept. Limits):	
1,2-Dichloroethane-d4 (70-121)	98%
Toluene-d8 (81-117)	107%
4-Bromofluorobenzene (74-121)	96%

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Groundwater Technology
20000/200 Mariner Ave.
Torrance, CA 90503-1670
Attention: Rachel Fischer

Method Blank

Extracted: 3/29-4/2, 1996
Analyzed: 3/29-4/2, 1996
Reported: Apr 2, 1996
Matrix: Soil

CALIFORNIA CODE OF REGULATIONS, TITLE 22 METALS

Analyte	EPA Method	STLC Max. Limit mg/L (ppm)	TTLC Max. Limit mg/Kg (ppm)	Detection Limit mg/Kg (ppm)		TTLC Sample Result mg/Kg (ppm)
Antimony	6010	15	500	5.0		N.D.
Arsenic	6010	5.0	500	1.0		N.D.
Barium	6010	100	10000	0.50		N.D.
Beryllium	6010	0.75	75	0.10		N.D.
Cadmium	6010	1.0	100	0.10		N.D.
Chromium, VI	7196	5.0	500	0.25		N.D.
Chromium, total	6010	5.0	2500	0.50		N.D.
Cobalt	6010	80	8000	0.50		N.D.
Copper	6010	25	2500	0.50		N.D.
Lead	6010	5.0	1000	1.0		N.D.
Mercury	7471	0.20	20	0.020		N.D.
Molybdenum	6010	350	3500	0.50		N.D.
Nickel	6010	20	2000	0.50		N.D.
Selenium	6010	1.0	100	1.0		N.D.
Silver	6010	5.0	500	0.50		N.D.
Thallium	6010	7.0	700	5.0		N.D.
Vanadium	6010	24	2400	0.50		N.D.
Zinc	6010	250	5000	0.50		N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

DEL MAR ANALYTICAL, IRVINE (ELAP #1197)

Gary Steube
Laboratory Director

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Groundwater Technology
20000/200 Mariner Ave.
Torrance, CA 90503-1670
Attention: Rachel Fischer

Method Blank

Extracted: Mar 29, 1996
Analyzed: Mar 29, 1996
Reported: Apr 2, 1996
Matrix: Soil

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS (EPA 418.1)

Laboratory Description	Petroleum Hydrocarbons mg/Kg (ppm)
Method Blank	N.D.

Detection Limit:	**5.0**

Analytes reported as N.D. were not present above the stated limit of detection.

DEL MAR ANALYTICAL, IRVINE (ELAP #1197)

Gary Steube
Laboratory Director

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Groundwater Technology
20000/200 Mariner Ave
Torrance, CA 90503-1670
Attention: Rachel Fischer

Method Blank

Extracted: Apr 2, 1996
Analyzed: Apr 2, 1996
Reported: Apr 2, 1996
Matrix: Soil

EXTRACTABLE FUEL HYDROCARBONS (CA DHS Mod. EPA 8015)

Laboratory Description	Extractable Hydrocarbons mg/Kg (ppm)	Hydrocarbon Type
Method Blank	N.D.	N.A.

Detection Limit:	5.0

Extractable Hydrocarbons are quantitated against a diesel fuel standard. Hydrocarbons detected by this method range from C8 to C40.

Analytes reported as N.D. were not present above the stated limit of detection.

DEL MAR ANALYTICAL, IRVINE (ELAP #1197)

Gary Steube
Laboratory Director

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2465 W. 12th St., Suite 1, Tempe, AZ 85281 (602) 968-8272 FAX (602) 968-1338

MS/MSD DATA REPORT

EPA METHOD: **8015 by extraction**
Matrix: Soil

DATE: 4/2/96

SAMPLE #: Blank

Analyte	R1	Sp	MS	MSD	PR1	PR2	RPD	MEAN PR
	ppm	ppm	ppm	ppm	%	%	%	%
Hydrocarbons	0	50	40	42	80%	84%	4.9%	82%

Definition of Terms:

R1..... Result of Sample Analysis

Sp..... Spike Concentration Added to Sample

MS..... Matrix Spike Result

MSD..... Matrix Spike Duplicate Result

PR1..... Percent Recovery of MS; ((MS-R1) / SP) X 100

PR2..... Percent Recovery of MSD; ((MSD-R1) / SP) X 100

RPD..... Relative Percent Difference; ((MS-MSD)/(MS+MSD)/2)) X 100

Del Mar Analytical

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MS/MSD DATA REPORT

EPA METHOD: **3060/7196**
Matrix: Soil

DATE: 4/2/96

SAMPLE #: Blank

Analyte	R1	Sp	MS	MSD	PR1	PR2	RPD	MEAN PR
	ppb	ppb	ppb	ppb	%	%	%	%
Chromium (VI)	0	0.20	0.16	0.17	82%	83%	1.2%	83%

Definition of Terms:

R1..... Result of Sample Analysis

Sp..... Spike Concentration Added to Sample

MS..... Matrix Spike Result

MSD..... Matrix Spike Duplicate Result

PR1..... Percent Recovery of MS; ((MS-R1) / SP) X 100

PR2..... Percent Recovery of MSD; ((MSD-R1) / SP) X 100

RPD..... Relative Percent Difference; ((MS-MSD)/(MS+MSD)/2)) X 100

Del Mar Analytical

Del Mar Analytical

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2465 W. 12th St., Suite 1, Tempe, AZ 85281 (602) 968-8272 FAX (602) 968-1338

MS/MSD DATA REPORT

EPA METHOD: **7471**
Matrix: Soil

DATE: 3/29/96

SAMPLE #: Blank

Analyte	R1	Sp	MS	MSD	PR1	PR2	RPD	MEAN PR
	ppb	ppb	ppb	ppb	%	%	%	%
Mercury	0	8.0	8.2	8.1	103%	101%	1.2%	102%

Definition of Terms:

R1..... Result of Sample Analysis

Sp..... Spike Concentration Added to Sample

MS..... Matrix Spike Result

MSD..... Matrix Spike Duplicate Result

PR1..... Percent Recovery of MS; ((MS-R1) / SP) X 100

PR2..... Percent Recovery of MSD; ((MSD-R1) / SP) X 100

RPD..... Relative Percent Difference; ((MS-MSD)/(MS+MSD)/2)) X 100

Del Mar Analytical

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2465 W. 12th St., Suite 1, Tempe, AZ 85281 (602) 968-8272 FAX (602) 968-1338

MS/MSD DATA REPORT

EPA METHOD: **418.1**
Matrix: Soil

DATE: 3/29/96

SAMPLE #: FC03988

Analyte	R1	Sp	MS	MSD	PR1	PR2	RPD	MEAN PR
	ppm	ppm	ppm	ppm	%	%	%	%
Hydrocarbons	0	60	55	55	92%	92%	0.0%	92%

Definition of Terms:

R1..... Result of Sample Analysis

Sp..... Spike Concentration Added to Sample

MS..... Matrix Spike Result

MSD..... Matrix Spike Duplicate Result

PR1..... Percent Recovery of MS; ((MS-R1) / SP) X 100

PR2..... Percent Recovery of MSD; ((MSD-R1) / SP) X 100

RPD..... Relative Percent Difference; ((MS-MSD)/(MS+MSD)/2)) X 100

Del Mar Analytical

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MS/MSD DATA REPORT

METHOD: **Metals**
Instrument: ICP
Matrix: SOIL

Date: 4/1/96

Sample #: FC03727

Analyte	R1	SP	MS	MSD	PR1	PR2	RPD	MEAN PR
	ppb	ppb	ppb	ppb	%	%	%	%
Aluminum	0	1000	1089	986	109%	99%	9.9%	104%
Antimony	0	1000	1060	975	106%	98%	8.4%	102%
Arsenic	0	1000	990	913	99%	91%	8.1%	95%
Barium	0	1000	1045	998	105%	100%	4.6%	102%
Beryllium	0	1000	1024	966	102%	97%	5.8%	100%
Cadmium	0	1000	928	928	93%	93%	0.0%	93%
Chromium	0	1000	1054	1014	105%	101%	3.9%	103%
Cobalt	0	1000	978	959	98%	96%	2.0%	97%
Copper	0	1000	1150	1096	115%	110%	4.8%	112%
Iron	157	1000	1248	1172	109%	102%	6.3%	105%
Lead	0	1000	1016	987	102%	99%	2.9%	100%
Molybdenum	0	1000	1063	1040	106%	104%	2.2%	105%
Nickel	0	1000	1020	963	102%	96%	5.7%	99%
Selenium	0	1000	1018	947	102%	95%	7.2%	98%
Silver	0	1000	1002	928	100%	93%	7.7%	97%
Thallium	98	1000	917	1014	82%	92%	10.0%	87%
Vanadium	0	1000	1085	1026	109%	103%	5.6%	106%
Zinc	103	1000	1093	1059	99%	96%	3.2%	97%

R1..... Result of Sample Analysis
Sp..... Spike Concentration Added to Sample
MS..... Matrix Spike Result
MSD..... Matrix Spike Duplicate Result
PR1..... Percent Recovery of MS; ((MS-R1) / SP) X 100
PR2..... Percent Recovery of MSD; ((MSD-R1) / SP) X 100
RPD..... Relative Percent Difference; ((MS-MSD)/(MS+MSD)/2)) X 100

Del Mar Analytical

2852 Alton Ave., Irvine, CA 92714 (714) 261-1022 FAX (714) 261-1228
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MS/MSD DATA REPORT

EPA METHOD: 8240
Matrix: Soil

DATE: 4/2/96

SAMPLE #: FC03988

Analyte	R1	Sp	MS	MSD	PR1	PR2	RPD	MEAN PR
	ppb	ppb	ppb	ppb	%	%	%	%
Benzene	0	50	43	44	86%	88%	2.3%	87%
Chlorobenzene	0	50	47	45	94%	90%	4.3%	92%
1,1-Dichloroethane	0	50	40	39	80%	78%	2.5%	79%
1,2-Dichlororethane	0	50	39	39	78%	78%	0.0%	78%
1,1-Dichloroethene	0	50	43	41	86%	82%	4.8%	84%
Chloroform	0	50	42	39	84%	78%	7.4%	81%
Tetrachloroethene	0	50	46	45	92%	90%	2.2%	91%
Toluene	0	50	52	46	104%	92%	12.2%	98%
Trichloroethene	0	50	43	42	86%	84%	2.4%	85%
Vinyl Chloride	0	50	54	51	108%	102%	5.7%	105%

Definition of Terms:

R1..... Result of Sample Analysis

Sp..... Spike Concentration Added to Sample

MS..... Matrix Spike Result

MSD..... Matrix Spike Duplicate Result

PR1..... Percent Recovery of MS; ((MS-R1) / SP) X 100

PR2..... Percent Recovery of MSD; ((MSD-R1) / SP) X 100

RPD..... Relative Percent Difference; ((MS-MSD)/(MS+MSD)/2)) X 100

Del Mar Analytical

Del Mar Analytical

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20392

CHAIN OF CUSTODY/REQUEST FOR ANALYSIS

Client Name/Address: Groundwater Tech. Inc. 2001/200 Mariner Ave Torrance, CA 90503

Project: IEC Phase II. 318 Kansas St. @ 1521 Grand

Project Manager: Richal Fischer

Sampler: Grant Williams

	Sample Description	Sample Matrix	Container Type	# of Cont	Sampling Date/Time	Preservatives	CAM/Title 22 Metals 17 Metals	EPA 8015 Mod. Diesel	EPA 8240 VOC	pH	EPA 418.1 TRPH				Special Instructions
✓	SB-4 @2.5'	Soil	Brass Tube	1	3-28-96 9:25										
✓	SB-4 @5'	Soil	↓	↓	3-28-96 9:31		✓	✓	✓						
✓	SB-5 @2.5'	Soil	↓	↓	3-28-96 8:39										
✓	SB-5 @5'	Soil	↓	↓	3-28-96 8:46		✓	✓	✓						

Relinquished By	Date/Time	Received By	Date/Time
Grant W Williams	3-28-96 15:17	[signature]	3/28/96 3:17
[signature]	3/28/96 5:10		
		Received in Lab By: [signature]	[illegible]

Turnaround Time: (check)
- same day ____
- 72 hours X
- 24 hours ____
- 5 days ____
- 48 hours ____
- normal ____

Sample Integrity: (check)
- intact [initials]
- on ice: [initials]

Note: Samples will be disposed [illegible] after 30 [illegible]

Appendix A-5

Del Mar Analytical

2852 Alton Ave
Irvine CA 92714
(714) 261 1022
FAX (714) 261 1228

1014 E Cooley Dr . Suite A
Colton, CA 92324
(909) 370-4667
FAX (909) 370-1046

16525 Sherman Way Suite C 11
Van Nuys, CA 91406
(818) 779-1844
FAX (818) 779 1843

943 South 48th St., Suite 114
Tempe, AZ 85281
(602) 968-8272
FAX (602) 968-1338

20391

CHAIN OF CUSTODY/REQUEST FOR ANALYSIS

Client Name Address
Groundwater Tech. Inc.
20000 / 20 Mariner Ave
Torrance, CA 90503

Project
IRC Phase II
318 Kansas St. 94151 Grant

Project Manager
Rachel Fischer X-119

Sampler
Grant Williams

Analysis Required

Sample Description	Sample Matrix	Container Type	# of Cont	Sampling Date/Time	Preservatives	CAM/Title 22 Metals 17 metals	EPA 8015 Mod. Diesel	EPA 8240 VOC	PH	EPA 418.1 TRPH				Special Instructions
SB-1 @5'	Soil	Brass Tube	1	3/25/96 12:10										
SB-1 @10'				3-25-96 12:27										
SB-1 @15'				3-25-96 12:42										
SB-1 @20'				3-25-96 12:55		✓		✓	✓	✓				
SB-2 @5'				3-25-96 11:06			✓	✓						
SB-2 @10'				3-25-96 11:15										
SB-2 @15'				3-25-96 11:23										
SB-3 @5'				3-25-96 10:04			✓	✓						
SB-3 @10'				3-25-96 10:13										
SB-3 @15'				3-25-96 10:26										

Relinquished By: Grant Williams	Date/Time: 3-25-96 15:17	Received By:	Date/Time: 3:17P 3/28/96
Relinquished By:	Date/Time: 3/28/96 5:10	Received By:	Date/Time:
Relinquished By:	Date/Time	Received in Lab By	Date/Time

Turnaround Time: (check)
same day ____ 72 hours X
24 hours ____ 5 days ____
48 hours ____ normal ____

Sample Integrity: (check)
intact ✓ on ice ✓

Note: Samples will be disposed of after 30 days

Del Mar Analytical

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16525 Sherman Way, Suite C-11, Van Nuys, CA 91406 (818) 779-1844 FAX (818) 779-1843
2465 W. 12th St., Suite 1, Tempe, AZ 85281 (602) 968-8272 FAX (602) 968-1338

Groundwater Technology
20000/200 Mariner Ave
Torrance, CA 90503-1670
Attention: Rachel Fischer

Client Project ID: IRC Phase II
318 Kanas St. & 1521 Grand
Sample Descript: Soil, SB-2 @ 10'
Lab Number: FD00351

Sampled: Mar 28, 1996
Received: Mar 28, 1996
Extracted: Apr 3, 1996
Analyzed: Apr 3, 1996
Reported: Apr 4, 1996

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/Kg (ppb)	Sample Result µg/Kg (ppb)
Acetone	10	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	5.0	N.D.
2-Butanone	10	N.D.
Carbon disulfide	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	5.0	N.D.
2-Chloroethyl vinyl ether	2.0	N.D.
Chloroform	2.0	N.D.
Chloromethane	5.0	N.D.
1,1-Dichloroethane	2.0	N.D.
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	5.0	N.D.
cis-1,2-Dichloroethene	2.0	N.D.
trans-1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis-1,3-Dichloropropene	2.0	N.D.
trans-1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10	N.D.
Methylene chloride	10	N.D.
4-Methyl-2-pentanone	5.0	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl acetate	5.0	N.D.
Vinyl chloride	5.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

DEL MAR ANALYTICAL, IRVINE (ELAP #1197)

Gary Steube
Laboratory Director

Surrogate Standard Recoveries (Accept. Limits):	
1,2-Dichloroethane-d4 (70-121)	95%
Toluene-d8 (81-117)	91%
4-Bromofluorobenzene (74-121)	96%

Del Mar Analytical

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2465 W. 12th St., Suite 1, Tempe, AZ 85281 (602) 968-8272 FAX (602) 968-1558

Groundwater Technology
20000/200 Mariner Ave.
Torrance, CA 90503-1670
Attention: Rachel Fischer

Client Project ID: IRC Phase II
318 Kanas St. & 1521 Grand
Sample Descript: Soil, SB-2 @ 15'
Lab Number: FD00352

Sampled: Mar 28, 1996
Received: Mar 28, 1996
Extracted: Apr 3, 1996
Analyzed: Apr 3, 1996
Reported: Apr 4, 1996

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/Kg (ppb)	Sample Result µg/Kg (ppb)
Acetone	10	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	5.0	N.D.
2-Butanone	10	N.D.
Carbon disulfide	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	5.0	N.D.
2-Chloroethyl vinyl ether	2.0	N.D.
Chloroform	2.0	N.D.
Chloromethane	5.0	N.D.
1,1-Dichloroethane	2.0	N.D.
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	5.0	N.D.
cis-1,2-Dichloroethene	2.0	N.D.
trans-1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis-1,3-Dichloropropene	2.0	N.D.
trans-1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10	N.D.
Methylene chloride	10	N.D.
4-Methyl-2-pentanone	5.0	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl acetate	5.0	N.D.
Vinyl chloride	5.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

DEL MAR ANALYTICAL, IRVINE (ELAP #1197)

Gary Steube
Laboratory Director

Surrogate Standard Recoveries (Accept. Limits):	
1,2-Dichloroethane-d4 (70-121)	97%
Toluene-d8 (81-117)	102%
4-Bromofluorobenzene (74-121)	99%

Del Mar Analytical

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2465 W. 12th St., Suite 1, Tempe, AZ 85281 (602) 968-8272 FAX (602) 968-1338

Groundwater Technology
20000/200 Mariner Ave.
Torrance, CA 90503-1670
Attention: Rachel Fischer

Client Project ID: IRC Phase II
318 Kanas St. & 1521 Grand
Analysis Method: EPA 3550/CA DHS Mod. 8015
First Sample #: FD00351

Sampled: Mar 28, 1996
Received: Mar 28, 1996
Extracted: Apr 4, 1996
Analyzed: Apr 4, 1996
Reported: Apr 4, 1996

EXTRACTABLE FUEL HYDROCARBONS (CA DHS Mod. EPA 8015)

Laboratory Number	Sample Description Soil	Extractable Hydrocarbons mg/Kg (ppm)	Hydrocarbon Type
FD00351	SB-2 @ 10	N.D.	N.A.
FD00352	SB-2 @ 15	N.D.	N.A.

Detection Limit:	5.0

Extractable Hydrocarbons are quantitated against a diesel fuel standard. Hydrocarbons detected by this method range from C8 to C40.

Analytes reported as N.D. were not present above the stated limit of detection.

DEL MAR ANALYTICAL, IRVINE (ELAP #1197)

Gary Steube
Laboratory Director

Del Mar Analytical

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Groundwater Technology
20000/200 Mariner Ave.
Torrance, CA 90503-1670
Attention: Rachel Fischer

Method Blank

Extracted: Apr 3, 1996
Analyzed: Apr 3, 1996
Reported: Apr 4, 1996
Matrix: Soil

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/Kg (ppb)	Sample Result µg/Kg (ppb)
Acetone	10	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	5.0	N.D.
2-Butanone	10	N.D.
Carbon disulfide	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	5.0	N.D.
2-Chloroethyl vinyl ether	2.0	N.D.
Chloroform	2.0	N.D.
Chloromethane	5.0	N.D.
1,1-Dichloroethane	2.0	N.D.
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	5.0	N.D.
cis-1,2-Dichloroethene	2.0	N.D.
trans-1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis-1,3-Dichloropropene	2.0	N.D.
trans-1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10	N.D.
Methylene chloride	10	N.D.
4-Methyl-2-pentanone	5.0	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl acetate	5.0	N.D.
Vinyl chloride	5.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

DEL MAR ANALYTICAL, IRVINE (ELAP #1197)

Gary Steube
Laboratory Director

Surrogate Standard Recoveries (Accept. Limits)	
1,2-Dichloroethane-d4 (70-121)	98%
Toluene-d8 (81-117)	104%
4-Bromofluorobenzene (74-121)	93%

Del Mar Analytical

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Groundwater Technology
20000/200 Mariner Ave.
Torrance, CA 90503-1670
Attention: Rachel Fischer

Method Blank

Extracted: Apr 4, 1996
Analyzed: Apr 4, 1996
Reported: Apr 4, 1996
Matrix: Soil

EXTRACTABLE FUEL HYDROCARBONS (CA DHS Mod. EPA 8015)

Laboratory Description	Extractable Hydrocarbons mg/Kg (ppm)	Hydrocarbon Type
Method Blank	N.D.	N.A.

Detection Limit:	**5.0**

Extractable Hydrocarbons are quantitated against a diesel fuel standard. Hydrocarbons detected by this method range from C8 to C40.

Analytes reported as N.D. were not present above the stated limit of detection.

DEL MAR ANALYTICAL, IRVINE (ELAP #1197)

Gary Steube
Laboratory Director

Del Mar Analytical

2852 Alton Ave., Irvine, CA 92714 (714) 261-1022 FAX (714) 261-1228
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MS/MSD DATA REPORT

EPA METHOD: 8240
Matrix: Soil

DATE: 4/3/96

SAMPLE #: FD00277

Analyte	R1	Sp	MS	MSD	PR1	PR2	RPD	MEAN PR
	ppb	ppb	ppb	ppb	%	%	%	%
Benzene	0	50	47	47	94%	94%	0.0%	94%
Chlorobenzene	0	50	48	47	96%	94%	2.1%	95%
1,1-Dichloroethane	0	50	42	41	84%	82%	2.4%	83%
1,2-Dichlororethane	0	50	43	42	86%	84%	2.4%	85%
1,1-Dichloroethene	0	50	40	40	80%	80%	0.0%	80%
Chloroform	0	50	44	41	88%	82%	7.1%	85%
Tetrachloroethene	0	50	47	46	94%	92%	2.2%	93%
Toluene	0	50	49	49	98%	98%	0.0%	98%
Trichloroethene	0	50	45	44	90%	88%	2.2%	89%
Vinyl Chloride	0	50	48	50	96%	100%	4.1%	98%

Definition of Terms:

R1..... Result of Sample Analysis

Sp..... Spike Concentration Added to Sample

MS..... Matrix Spike Result

MSD..... Matrix Spike Duplicate Result

PR1..... Percent Recovery of MS; ((MS-R1) / SP) X 100

PR2..... Percent Recovery of MSD; ((MSD-R1) / SP) X 100

RPD..... Relative Percent Difference; ((MS-MSD)/(MS+MSD)/2)) X 100

Del Mar Analytical

Del Mar Analytical

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2465 W. 12th St., Suite 1, Tempe, AZ 85281 (602) 968-8272 FAX (602) 968-1358

MS/MSD DATA REPORT

EPA METHOD: **8015 by extraction**
Matrix: Soil

DATE: 4/4/96

SAMPLE #: FD00232

Analyte	R1	Sp	MS	MSD	PR1	PR2	RPD	MEAN PR
	ppm	ppm	ppm	ppm	%	%	%	%
Hydrocarbons	1.2	50	43	46	84%	90%	6.7%	87%

Definition of Terms:

R1..... Result of Sample Analysis

Sp..... Spike Concentration Added to Sample

MS..... Matrix Spike Result

MSD..... Matrix Spike Duplicate Result

PR1..... Percent Recovery of MS; ((MS-R1) / SP) X 100

PR2..... Percent Recovery of MSD; ((MSD-R1) / SP) X 100

RPD..... Relative Percent Difference; ((MS-MSD)/(MS+MSD)/2)) X 100

Del Mar Analytical

SECOR
International Incorporated

JN J0106-001-01

TANK REMOVAL REPORT

INTERNATIONAL RECTIFIER
330 KANSAS STREET
EL SEGUNDO, CALIFORNIA

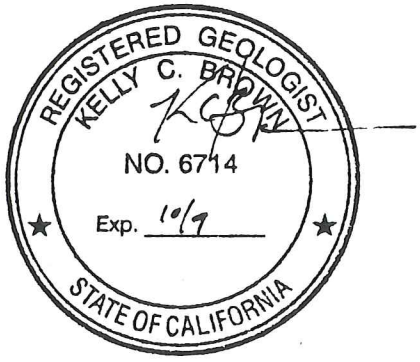
Prepared for:

International Rectifier Corporation
233 Kansas Street
El Segundo, California 90245

Prepared by:

SECOR International Incorporated
5882 Bolsa Avenue, Suite 200
Huntington Beach, California 92649

November 4, 1998



Prepared by:

Don Pratt
Associate Scientist

Reviewed by:

Kelly C. Brown, R.G. 6714
Associate Geologist

Mark Bierei
Account Manager

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TABLES

Table 1 - Soil Analytical Results (8260)
Table 2 - Soil Analytical Results (8015M)
Table 3 - Soil Analytical Results (8010)
Table 4 - Soil Analytical Results (Cam Metals)

FIGURES

Figure 1 - Site Location Map
Figure 2 - Site Map

APPENDICES

APPENDIX A - Rule 1166 Contaminated Soil Mitigation Monitoring Forms
APPENDIX B - Permits
APPENDIX C - Tank Rinseate Manifest
APPENDIX D - Tank Disposal Documentation
APPENDIX E - Laboratory Reports and Chain-of-Custody Documentation

1.0 INTRODUCTION

On behalf of International Rectifier (IR), SECOR International Incorporated (SECOR) has prepared the following report documenting the removal of three underground storage tanks (USTs) at 330 Kansas Street in El Segundo, California (Figure 1). All UST excavation and removal activities were conducted by Excel Excavating Incorporated (Excel) under contract to SECOR. Soil sampling activities were conducted by SECOR.

2.0 GEOLOGIC AND HYDROGEOLOGIC SETTING

The site is located within the El Segundo Sand Hills of the Los Angeles Coastal Plain, at elevations ranging from 105 to 116 feet above mean sea level. Ground surface in the area slopes to the northwest. The Pacific Ocean lies approximately 1.5 miles to the west. The Coastal Plain consists of unconsolidated sediments of Plio-Pleistocene age. Crude-oil-bearing deposits lie deeper than 1,000 feet beneath the site within the El Segundo Oil Field. The site is underlain by inactive dune sands of the El Segundo Sand Hills. Shallow sediments encountered during excavation activities consisted of well-sorted to silty sands.

Groundwater in the vicinity is reported to be deeper than 80 feet below ground surface (bgs). Seawater intrusion and off-site hydrocarbon sources affect regional groundwater quality. The West Coast Basin Barrier Project, designed to control seawater intrusion by creation of an artificial seaward gradient using water injection, is located east of the site. Because of this, groundwater beneath the site is not designated by the Regional Water Quality Control Board (RWQCB) for beneficial use.

3.0 SUMMARY OF EXCAVATION AND UST REMOVAL ACTIVITIES

Between July 27 and August 14, 1998, three underground storage tanks (USTs) were excavated and removed from the site. Inspector James Carver with the El Segundo Fire Department (EFD) was on site to observe and document the UST removal activities. Permits were obtained by Excel prior to the commencement of excavation activities.

3.1 Rule 1166 Contaminated Soil Mitigation Monitoring

In accordance with the South Coast Air Quality Management District (SCAQMD) Rule 1166 Contaminated Soil Mitigation Plan, VOC levels were monitored during excavation operations. SECOR personnel monitored VOC concentrations 3-inches above the excavated soil with a photo-ionization detector (PID) calibrated to hexane (50 parts per million by volume [ppmv]) in order to segregate and stockpile potentially impacted soil from non-impacted soil during excavation activities. The PID readings measured during excavation activities are included on the 1166 monitoring records included within Appendix A.

3.2 UST Removal

On July 28 and 29, 1998, a shoring system was installed along the north and east walls of the tank cavity. Prior to removal, all three USTs were triple rinsed by Hazardous Waste Transportation Services, Inc. (HTS) of Santa Fe Springs, California, under direct contract to IR. The collected water within each UST was removed during the tank rinsing operation.

On July 31, 1998, one 10,000-gallon diesel UST, one 6,000-gallon waste water UST, and one 6,000- gallon waste solvent UST were uncovered and removed from the tank cavity. All of the removed USTs were constructed of single-walled steel with fiber glass coating. A copy of the permit is included in Appendix B. The locations of the former USTs are shown on Figure 2. The tanks were identified in the field as follows:

- Tank # 1 - 10,000 gallon diesel UST (no identifiable UL number)
- Tank # 2 - 6,000 gallon waste water UST (UL# 5754)
- Tank # 3 - 6,000 gallon waste solvent UST (UL# 5755)

Prior to removal, the USTs were rinsed and pumped dry by HTS. The USTs were rendered inert by adding dry ice in accordance with EFD guidelines and SCAQMD Rule 1149. All three USTs were certified non-hazardous for transport by Mr. Charles E. Young, a certified marine chemist, of CTL Environmental Services. All rinseate water removed from the USTs was transported by HTS under hazardous waste manifest no. 98584834, to Demenno-Kerdoon for recycling. A copy of the tank rinseate manifest is included in Appendix C.

Upon removal, the USTs were inspected for structural integrity and were determined to be in good condition with no evidence of holes, cracks, pits, leaks, or stains. The USTs were removed from the excavation using a crane operated by CBI and subsequently loaded onto flatbed trucks for off-site transportation. A copy of the tank disposal document is included in Appendix D.

3.3 Soil Sampling

Following the removal of the USTs, a three foot reinforced concrete anchor pad was encountered which hindered the collection of soil samples from beneath the USTs. A decision was made, based on the recomendation of Inspector Carver to collect soil samples from beneath the former USTs at a later date.

On September 15, 1998, SECOR collected soil samples from beneath the concrete anchor pad, at each end of the former USTs using a CME-61 hollow stem auger drill rig. Soil samples were collected within 2-inch diameter brass sleeves, sealed with Teflon™ and covered with plastic end caps. The sample sleeves were then labeled and placed in a chilled cooler with ice and transported under chain-of-custody protocol to American Analytics of Chatsworth, California, a California Department of Health Services (DHS)-certified hazardous waste laboratory. Sample analytical methods and results are presented in Tables 1 through 4. Sample locations are shown on Figure 2. The samples were labeled using the following scheme:

- T-1 = East end of diesel UST
- T-2 = West end of diesel UST
- T-3 = East end of waste water UST
- T-4 = West end of waste water UST
- T-5 = East end of waste solvent UST
- T-6 = West end of waste solvent UST

4.0 SOIL SAMPLE ANALYTICAL RESULTS

A total of 6 soil samples were collected from beneath the former USTs. Sample locations are shown on Figure 2.

Selected soil samples were analyzed for total petroleum hydrocarbons as diesel (TPHd), halogenated volatile organic compounds, priority polutant metals, and methyl-tert-butyl-ether (MTBE). Analytical results from soil samples collected from the UST excavation were below minimum laboratory detection limits for all target constituents, with the exception of trace metal constituents detected within soil samples T-3 and T-4. Trace levels of arsenic, chromium, nickel, and zinc were detected within soil samples T-3 and T-4. All of the detected metal constituents were below the respective California TTLC levels. Laboratory analytical results are presented in Tables 1 through 4.

5.0 SUMMARY

- Three USTs were removed on July 31, 1998 which included, one 10,000-gallon diesel UST, one 6,000-gallon waste water UST, and one 6,000-gallon waste solvent UST.
- On September 15, 1998, a total of 6 soil samples were obtained from beneath the former USTs using a CME-61 hollow stem auger drill rig under the direction and supervision of Mr. James Carver of the EFD.
- Trace (background) concentrations of arsenic, chromium, nickel, and zinc were detected within soil samples T-3 and T-4. All detected metal constituents were below the respective California TTLC levels.
- All of the soil samples were below the laboratories minimum detection limits for all target constituents with the exception of the aforementioned metals.

6.0 LIMITATIONS

This report has been prepared for the exclusive use of International Rectifier and its representatives as it pertains to the property located at 330 Kansas Street in El Segundo, California. Evaluations of the geologic conditions at the site for the purpose of this investigation are inherently limited due to the number of observation points. There may be variations in the subsurface conditions in areas away from the sample points. There are no representations, warranties, or guarantees that the points selected for sampling are representative of the entire site. Data from this report reflects the conditions at specific locations at a specific point in time. No other interpretations, warranties, guarantees, expressed or implied, are included or intended in the report findings.

7.0 REFERENCES

Groundwater Technology Incorporated, April 5, 1996, *Phase I and Phase II Environmental Investigations*, International Rectifier Sites, 318 Kansas Street and 1521 East Grand Avenue, El Segundo, California.

SECOR International Incorporated, October 6, 1997, *Proposal for Underground Storage Tank Removal*, 330 Kansas Street, El Segundo, California.

TABLES

TABLE 1

SOIL ANALYTICAL RESULTS (8260)
330 KANSAS STREET
EL SEGUNDO, CALIFORNIA

Parameter	Units	09/15/98 T-1	09/15/98 T-2	09/15/98 T-5	09/15/98 T-6
Benzene	ug/Kg	<5	<5	<5	<5
Bromobenzene	ug/Kg	<5	<5	<5	<5
Bromochloromethane	ug/Kg	<5	<5	<5	<5
Bromodichloromethane	ug/Kg	<5	<5	<5	<5
Bromoform	ug/Kg	<5	<5	<5	<5
Bromomethane	ug/Kg	<5	<5	<5	<5
Butylbenzene	ug/Kg	<5	<5	<5	<5
Carbon tetrachloride	ug/Kg	<5	<5	<5	<5
Chlorobenzene	ug/Kg	<5	<5	<5	<5
Chloroethane	ug/Kg	<5	<5	<5	<5
Chloroform	ug/Kg	<5	<5	<5	<5
Chloromethane	ug/Kg	<5	<5	<5	<5
2-Chlorotoluene	ug/Kg	<5	<5	<5	<5
4-Chlorotoluene	ug/Kg	<5	<5	<5	<5
1,2-Dibromo-3-chloropropane	ug/Kg	<10	<10	<10	<10
Dibromochloromethane	ug/Kg	<5	<5	<5	<5
1,2-Dibromoethane	ug/Kg	<5	<5	<5	<5
Dibromomethane	ug/Kg	<5	<5	<5	<5
1,2-Dichlorobenzene	ug/Kg	<5	<5	<5	<5
1,3-Dichlorobenzene	ug/Kg	<5	<5	<5	<5
1,4-Dichlorobenzene	ug/Kg	<5	<5	<5	<5
Dichlorodifluoromethane	ug/Kg	<5	<5	<5	<5
1,1-Dichloroethane	ug/Kg	<5	<5	<5	<5
1,2-Dichloroethane	ug/Kg	<5	<5	<5	<5
1,2-Dischloroethene-(cis)	ug/Kg	<5	<5	<5	<5
1,2-Dichloroethene-(trans)	ug/Kg	<5	<5	<5	<5
1,1-Dichloroethene	ug/Kg	<5	<5	<5	<5
1,2-Dichloropropane	ug/Kg	<5	<5	<5	<5
1,3-Dichloropropane	ug/Kg	<5	<5	<5	<5
2,2-Dichloropropane	ug/Kg	<5	<5	<5	<5
1,3-Dichloroporpene-(cis)	ug/Kg	<5	<5	<5	<5
1,3-Dichloropropene-(trans)	ug/Kg	<5	<5	<5	<5
1,1-Dichloropropene	ug/Kg	<5	<5	<5	<5
Ethylbenzene	ug/Kg	<5	<5	<5	<5
Hexachlorobutadiene	ug/Kg	<10	<10	<10	<10
Isopropylbenzene	ug/Kg	<5	<5	<5	<5
Isopropyltoluene	ug/Kg	<10	<10	<10	<10
Methylene chloride	ug/Kg	<50	<50	<50	<50
Naphthalene	ug/Kg	<10	<10	<10	<10

Notes:

MRL - Method Reporting Limit
ug/L - Micrograms per Liter

TABLE 1

SOIL ANALYTICAL RESULTS (8260)
330 KANSAS STREET
EL SEGUNDO, CALIFORNIA

Parameter	Units	09/15/98 T-1	09/15/98 T-2	09/15/98 T-5	09/15/98 T-6
Propylbenzene	ug/Kg	<5	<5	<5	<5
Styrene	ug/Kg	<5	<5	<5	<5
1,1,1,2-Tetrachloroethane	ug/Kg	<5	<5	<5	<5
1,1,2,2-Tetrachloroethane	ug/Kg	<5	<5	<5	<5
Tetrachloroethene	ug/Kg	<5	<5	<5	<5
Toluene	ug/Kg	<5	<5	<5	<5
1,2,3-Trichlorobenzene	ug/Kg	<5	<5	<5	<5
1,2,4-Trichlorobenzene	ug/Kg	<5	<5	<5	<5
1,1,1-Trichloroethane	ug/Kg	<5	<5	<5	<5
1,1,2-Trichloroethane	ug/Kg	<5	<5	<5	<5
Trichloroethene	ug/Kg	<5	<5	<5	<5
Trichlorofluoromethane	ug/Kg	<5	<5	<5	<5
1,2,3-Trichloropropane	ug/Kg	<5	<5	<5	<5
1,2,4-Trimethylbenzene	ug/Kg	<5	<5	<5	<5
1,3,5-Trimethylbenzene	ug/Kg	<5	<5	<5	<5
Vinyl chloride	ug/Kg	<5	<5	<5	<5
m,p-Xylenes	ug/Kg	<5	<5	<5	<5
o-Xylene	ug/Kg	<5	<5	<5	<5
sec-Butylbenzene	ug/Kg	<5	<5	<5	<5
tert-Butylbenzene	ug/Kg	<5	<5	<5	<5
Methyl-tert-butyl-ether	ug/Kg	<20	<20	<20	<20

Notes:

MRL - Method Reporting Limit
ug/L - Micrograms per Liter

TABLE 2

SOIL ANALYTICAL RESULTS (8015M)
INTERNATIONAL RECTIFIER CORPORATION
330 KANSAS STREET
EL SEGUNDO, CALIFORNIA

Parameter	Units	09/15/98 T-1	09/15/98 T-2
Diesel	mg/Kg	<10	<10

MRL - Method Reporting Limit
mg/Kg - milligrams per kilograms

TABLE 3

SOIL ANALYTICAL RESULTS (8010)
INTERNATIONAL RECTIFIER CORPORATION
330 KANSAS STREET
EL SEGUNDO, CALIFORNIA

Parameter	Units	09/15/98 T-3	09/15/98 T-4
Bromodichloromethane	ug/Kg	<5	<5
Bromoform	ug/Kg	<5	<5
Bromomethane	ug/Kg	<5	<5
Carbon tetrachloride	ug/Kg	<5	<5
Chlorobenzene	ug/Kg	<5	<5
Chloroethane	ug/Kg	<5	<5
Chloroform	ug/Kg	<5	<5
Chloromethane	ug/Kg	<5	<5
Dibromochloromethane	ug/Kg	<5	<5
1,2-Dichlorobenzene	ug/Kg	<5	<5
1,3-Dichlorobenzene	ug/Kg	<5	<5
1,4-Dichlorobenzene	ug/Kg	<5	<5
Dichlorodifluoromethane	ug/Kg	<5	<5
1,1-Dichloroethane	ug/Kg	<5	<5
1,2-Dichloroethane	ug/Kg	<5	<5
1,2-Dichloroethene-(trans)	ug/Kg	<5	<5
1,1-Dichloroethene	ug/Kg	<5	<5
1,2-Dichloropropane	ug/Kg	<5	<5
1,3-Dichloropropene-(cis)	ug/Kg	<5	<5
1,3-Dichloropropene-(trans)	ug/Kg	<5	<5
Methylene chloride	ug/Kg	<50	<50
1,1,2,2-Tetrachloroethane	ug/Kg	<5	<5
Tetrachloroethene	ug/Kg	<5	<5
1,1,1-Trichloroethane	ug/Kg	<5	<5
1,1,2-Trichloroethane	ug/Kg	<5	<5
Trichloroethene	ug/Kg	<5	<5
Trichlorofluoromethane	ug/Kg	<5	<5
Vinyl Chloride	ug/Kg	<5	<5

MRL - Method Reporting Limit
ug/Kg - micrograms per kilogram

H:\c\e\irc\8010.xls

TABLE 4

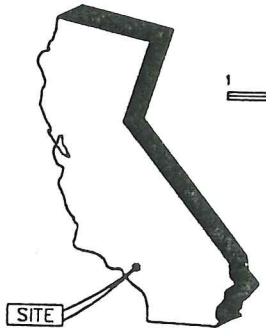
SOIL ANALYTICAL RESULTS (CAM Metals)
INTERNATIONAL RECTIFIER CORPORATION
330 KANSAS STREET
EL SEGUNDO, CALIFORNIA

Compounds	Units	09/15/98 T-3	09/15/98 T-4
Antimony	mg/Kg	<10	<10
Arsenic	mg/Kg	1.2	1.3
Beryllium	mg/Kg	<1	<1
Cadmium	mg/Kg	<1	<1
Chromium	mg/Kg	7.0	8.7
Copper	mg/Kg	<3	<3
Lead	mg/Kg	<3	<3
Mercury	mg/Kg	<0.05	<0.05
Nickel	mg/Kg	4.2	5.6
Selenium	mg/Kg	<0.5	<0.5
Silver	mg/Kg	<1	<1
Thallium	mg/Kg	<5	<5
Zinc	mg/Kg	8.0	8.4

MRL - Method Reporting Limit
mg/Kg - milligrams per kilogram

H:\c\a\irc\metals.xls

FIGURES



SCALE 1:24000

1 1/2 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETER

CONTOUR INTERVAL 20 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

N

SOURCE: USGS 7.5 minute topo map, Venice quadrangle 1964, revised 1981

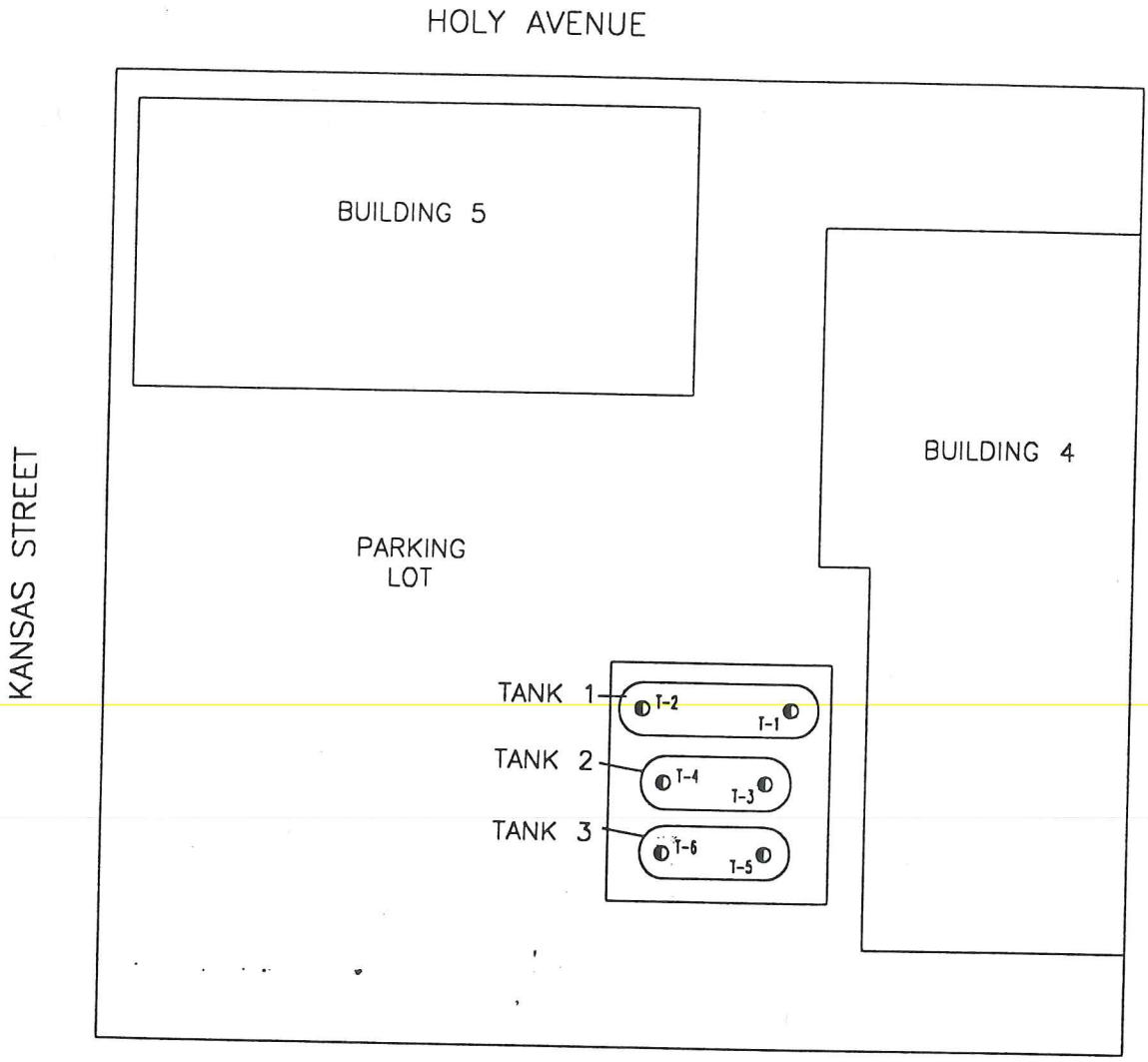
SECOR INTERNATIONAL INCORPORATED
5882 BOLSA AVENUE, SUITE 200
HUNTINGTON BEACH, CALIFORNIA 92649
PHONE: (714) 379-3366 FAX: (714) 379-3375

SITE LOCATION MAP

INTERNATIONAL RECTIFIER
330 KANSAS STREET
EL SEGUNDO, CALIFORNIA

FIGURE: 1

PROJECT NO: J0106-001-01



LEGEND:
T-1 SAMPLE LOCATIONS

ASSUMED NORTH

NOT TO SCALE

SECOR INTERNATIONAL INCORPORATED
5862 BOLSA AVENUE, SUITE 200
HUNTINGTON BEACH, CALIFORNIA 92649
PHONE: (714) 379-3366 FAX: (714) 379-3375

SITE MAP

INTERNATIONAL RECTIFIER
330 KANSAS STREET
EL SEGUNDO, CALIFORNIA

PROJECT:	J0106-001-01
DATE:	10/12/98
SCALE:	NOT TO SCALE
DWG NO:	J106001S

FIGURE: 2

APPENDIX A

RULE 1166 CONTAMINATED SOIL MITIGATION MONITORING FORMS

International Rectifier Corporation
***SECOR* Project No.** J0106-001-01

(ATTACHMENT 7)

SECOR

AIR MONITORING EQUIPMENT CALIBRATION/CHECK LOG*

DATE	INSTRUMENT/ MODEL NO.	SERIAL NO.	BATTERY CHECK OK?	ZERO ADJUST OK?	CALIBRATION GAS (PPM)	READING (PPM)	LEAK CHECK	PERFORMED BY	COMMENTS
7/29/98	MINI-RAE PGM-76	201188	OK	OK	100	100	OK	ENVIRO SUPPLY	CALIBRATED WHEN RENTED

* Submit copies of logs to Corporate Health and Safety within 24 hoursof expiration date of Plan, if a PEL is exceeded, or personal protective equipment leve is upgraded.

(ATTACHMENT 8)

SECOR

AIR MONITORING LOG*

DATE	TIME	LOCATION	SOURCE/AREA/ BREATHING ZONE	INSTRUMENT	CONCENTRATION/UNITS	SAMPLED BY
7·30·98	0735	NORTH WALL TANK PIT	SOURCE	MINI-RAE	0 PPM	McLAIN
	0740	"	"	"	0	
	0745	ABOVE DIESEL TANK	"	"	0	
	0800	"	"	"	0	
	0810	ABOVE DIESEL TANK E SIDE	"	"	0	
	0820	"	"	"	0	
	0830	INBETWEEN DIESEL & WW TANKS	"	"	0	
	0830	WEST OF TANK PIT	BREATHING ZONE	"	0	
	0840	BETWEEN DIESEL & WASTE WTR TKS	SOURCE	"	0	
	0855	NORTH WALL 10 FT	"	"	17 PPM	
	0900	BETWEEN DIESEL & WASTE WTR TKS	"	"	13 PPM	
	0910	"	"	"	10 PPM	
		BREAK				
	0950	BETWEEN TANKS DIESEL & WASTE WTR	"	"	0 PPM	

* Submit copies of logs to Corporate Health and Safety within 24 hoursof expiration date of Plan, if a PEL is exceeded, or personal protective equipment level is upgraded.

International Resource Corporation
SECOR Project No. 10106-001E-01

(ATTACHMENT 8)

SECOR

AIR MONITORING LOG*

DATE	TIME	LOCATION	SOURCE/AREA/ BREATHING ZONE	INSTRUMENT	CONCENTRATION/UNITS	SAMPLED BY
7-30-98	1000	BETWEEN TANKS DIESEL & WASTE WTR	SOURCE	MINI-RAE	5 PPM	MC LAIN
	1005	"	"	"	6 PPM	
	1010	"	"	"	0 PPM	
	1025	SOUTH WALL	"	"	0 PPM	
	1035	"	"	"	0 PPM	
	1045	BETWEEN SOL. & WASTE WTR TK	"	"	0 PPM	
	1100	PIT AREA	BREATHING ZONE	"	0 PPM	
	1100	SOUTH WALL	SOURCE	"	0 PPM	
	1110	"	"	"	0 PPM	
	1120	"	"	"	0 PPM	
	1135	"	"	"	0 PPM	
	1150	"	"	"	0 PPM	
	1200	BETWEEN SOL. & WASTE WTR TK	"	"	0 PPM	
	1215	NORTH WALL	"	"	0 PPM	

* Submit copies of logs to Corporate Health and Safety within 24 hoursof expiration date of Plan, if a PEL is exceeded, or personal protective equipment le is upgraded.

[illegible] Corporation
[illegible] Project No.: 1006-001-01

(ATTACHMENT 8)

SECOR

AIR MONITORING LOG*

DATE	TIME	LOCATION	SOURCE/AREA/ BREATHING ZONE	INSTRUMENT	CONCENTRATION/UNITS	SAMPLED BY
7-30-98	1225	NORTHWALL	SOURCE	MINI-RAE	0 PPM	MCLAIN
	1240	"	"	"	0 PPM	
	1300	BETWEEN DIESEL AND SOLVENT TKS	"	"	0 PPM	
	1310	WEST END OF DIESEL TK	"	"	0 PPM	
	1320	WEST END OF MIDDLE TK	"	"	0 PPM	
	1330	WEST END OF SOLVENT TK	"	"	0 PPM	
		BREAK				
	1430	WEST END OF PIT	"	"	0 PPM	
	1445	"	"	"	0 PPM	

* Submit copies of logs to Corporate Health and Safety within 24 hoursof expiration date of Plan, if a PEL is exceeded, or personal protective equipment le is upgraded.

APPENDIX B

PERMITS

BUILDING PERMIT

City of El Segundo

DEPARTMENT OF BUILDING SAFETY

APPLICANT: [illegible]
ADDRESS: [illegible] Lexington
P.O. Box [illegible] ZIP 46607
CITY [illegible] PHONE (714) 249-2225

OWNER
NAME [illegible] c/o Don
ADDRESS [illegible] Kansas PHONE (714) 379-3366
CITY [illegible] STATE/ZIP CA 90245

ENGINEER-ARCHITECT
NAME
ADDRESS PHONE
CITY STATE/ZIP

NAME [illegible]
ADDRESS [illegible] PHONE (714) 374-3366
CITY [illegible] Beach STATE/ZIP CA

CONTRACTOR
NAME [illegible] Excavating
MAILING ADDRESS P.O. Box [illegible]
CITY [illegible] TELEPHONE (714) 249-2225
STATE [illegible] CITY LIC NO. MR 37215

I hereby affirm under penalty of perjury that I am licensed under provisions of Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code, and my license is in full force and effect.
License Class [illegible] Lic No. 659332
Date [illegible] Contr. Signature [illegible]

PLAN CHECK NO. 606-98 | DRAWING NO.
BUILDING ADDRESS 330 Kansas St El Segundo
TRACT | BLOCK/PAGE | LOT/PARCEL

CONST.

TYPE OF CONST		GROUP	
USE ZONE		REQ'D YARDS	
NO STORIES		SIZE OF CONST.	
USE OF BUILDING			UBC ED 94
SPRINKLERED		YES	NO
WET STANDPIPES		YES	NO

DESCRIPTION OR REMARKS: | NEW | ADDITION | ALTERATION X

Removal of 3 underground storage tanks
1 diesel 1 solvent, 1 waste water

APPLICANT
I certify that I have read this application and state that the above information is correct. I agree to comply with all city and county ordinances and state laws relating to building construction, and hereby authorize representatives of this city to enter upon the above mentioned property for inspection purposes.
[signature] 6-5-98
Signature of Applicant or Agent Date

WORKER'S COMPENSATION DECLARATION

I hereby affirm under penalty of perjury one of the following declarations:
☐ I have and will maintain a certificate of consent to self insure for workers' compensation, as provided for by Section 3700 of the Labor Code, for the performance of the work for which this permit is issued.
☒ I have and will maintain workers' compensation insurance, as required by Section 3700 of the Labor Code, for the performance of the work for which this permit is issued. My workers' compensation insurance carrier and policy number are:
Carrier [illegible] Policy Number 227-98 0017075
(This section need not be completed if the permit is for one hundred dollars ($100) or less.)
☐ I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the workers' compensation Laws of California, and agree that if I should become subject to the workers' compensation provisions of Section 3700 of the Labor Code, I shall forthwith comply with those provisions.
Date 6-5-98 Signature [signature]
WARNING: Failure to secure workers' compensation coverage is unlawful, and shall subject an employer to criminal penalties and civil fines up to one hundred thousand dollars ($100,000), in addition to the cost of compensation, damages as provided for in Section 3706 of the Labor Code, interest and attorney's fees.

FOR DEPT. USE ONLY

APPL REC BY E Gossett DATE 6/5/98

APPROVALS

BLDG. SAFETY	FIRE DEPT
PLANNING	PARKS/REC
PUBLIC WORKS	

ZONING

CMP USE	BLDG. AREA
CMP USE	BLDG. AREA
CMP USE	BLDG. AREA

OWNER/BUILDER
I hereby affirm under penalty of perjury that I am exempt from the Contractors License Law for the following reason (Sec. 7031.5 Business and Professions Code). Any city or county which requires a permit to construct, alter, improve, demolish, or repair any structure, prior to its issuance, also requires the applicant for such permit to file a signed statement that he or she is licensed pursuant to the provisions of the Contractors License Law (Chap 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code) or that he or she is exempt therefrom and the basis for the alleged exemption. Any violation of Section 7031.5 by any applicant for a permit subjects the applicant to a civil penalty of not more than five hundred dollars ($500).)
☐ I, as owner of the property, or my employees with wages as their sole compensation will do the work, and the structure is not intended or offered for sale (Sec. 7044 Business and Professions Code). The Contractors License Law does not apply to an owner of a property who builds or improves thereon, and who does such work himself or through his or her own employees, provided that such improvements are not intended or offered for sale. If, however, the building or improvement is sold within one year of completion, the owner-builder will have the burden of proving that he or she did not build or improve for the purpose of sale.
☐ I, as owner of the property, am exclusively contracting with licensed contractors to construct the project (Section 7044 Business and Professions Code: The Contractors License Law does not apply to an owner of property who builds or improves thereon, and who contracts for such projects with a contractor(s) licensed pursuant to the Contractors License Law).
☐ I am exempt under Sec. [illegible] B & PC for this reason [illegible]
Date [illegible] Owner [illegible]

[redacted] ations set forth in [redacted] te of California in [redacted] regard to such work, and all amendments thereto.

This permit becomes null and void if work is not commenced within one hundred eighty (180) days from date of issuance or if work is suspended at any time during construction for the same period of time, or if any work is done in violation of the City Ordinance or State laws governing same.

CONSTRUCTION LENDING AGENCY

I hereby affirm under penalty of perjury that there is a construction lending agency for the performance of the work for which this permit is issued (Sec. 3097 Civ C).
Lender's Name
Lender's Address

VALIDATION

[illegible] BLDG FORM B-102 Rev. [illegible]

RECEIVED
JUN - 5 1993
BUILDING SAFETY DEPT.

REV - 3/93

El Segundo Fire Department
Certified Unified Program Agency

Underground Tank Closure Application

Owner:

Name GREG TAKAGI Phone C/O DON (714) 379-3366
Mailing Address 237 KANSAS City EL SEGUNDO State CA Zip 90245

Facility:

Occupant Name INTERNATIONAL RECTIFIER CORP. Phone C/O DON (714) 379-3366
Site Address 330 KANSAS ST. City El Segundo State CA Zip 90245
Mailing Address 330 KANSAS ST. City EL SEGUNDO State CA Zip 90245
Contact Person DON PRATT Title CONSULTANT

Contractor [X] complete below: Owner/Operator as Contractor [ ]
Name EXCELL EXCAVATING INC. Phone (714) 249-2225
State License No. 659332 Class A, C12, C21, HAZ

Closure Requested:

[X] Permanent, Tank Removal (See conditions A and C on reverse side)
How many underground tanks will remain after this closure? NONE IN THE AREA
[ ] Permanent, Closure In Place (See Conditions A and D on reverse side)
[ ] Temporary (See Conditions A and B on reverse side)

Tank Description: Plot Plan Attached [ ] Existing HMUSP No.

Tank No.	Tank Material	Age	Capacity	Material Stored (Past/Present)
1	STEEL	UNK.	10,000	DIESEL
2	STEEL	UNK.	6,000	WASTE WATER
3	STEEL	UNK.	6,000	SOLVENT

Complete The Following:	Yes	No
Has an unauthorized release ever occurred at this site:	[ ]	[X]
Have structural repairs ever been made to these tanks?	[ ]	[X]
Will new underground tanks be installed after closure?	[ ]	[X]
Will any wells, including monitoring wells, be abandoned?	[ ]	[X]

NOTICE: CONTAMINATED TANKS AND RESIDUES THAT MAY BE LEFT IN TANKS TO BE CLOSED MAY BE A HAZARDOUS WASTE WHICH MUST BE TRANSPORTED ANDDISPOSED OF PURSUANT TO CHAPTER 6.5, CALIFORNIA HEALTH AND SAFETY CODE. FAILURE TO COMPLY MAY BE PROSECUTED AS A FELONY VIOLATION.

By signature below the applicant certifies that all statements and disclosures above are true and correct and that they have read and agree to abide by this permit and all conditions and limitations attached.

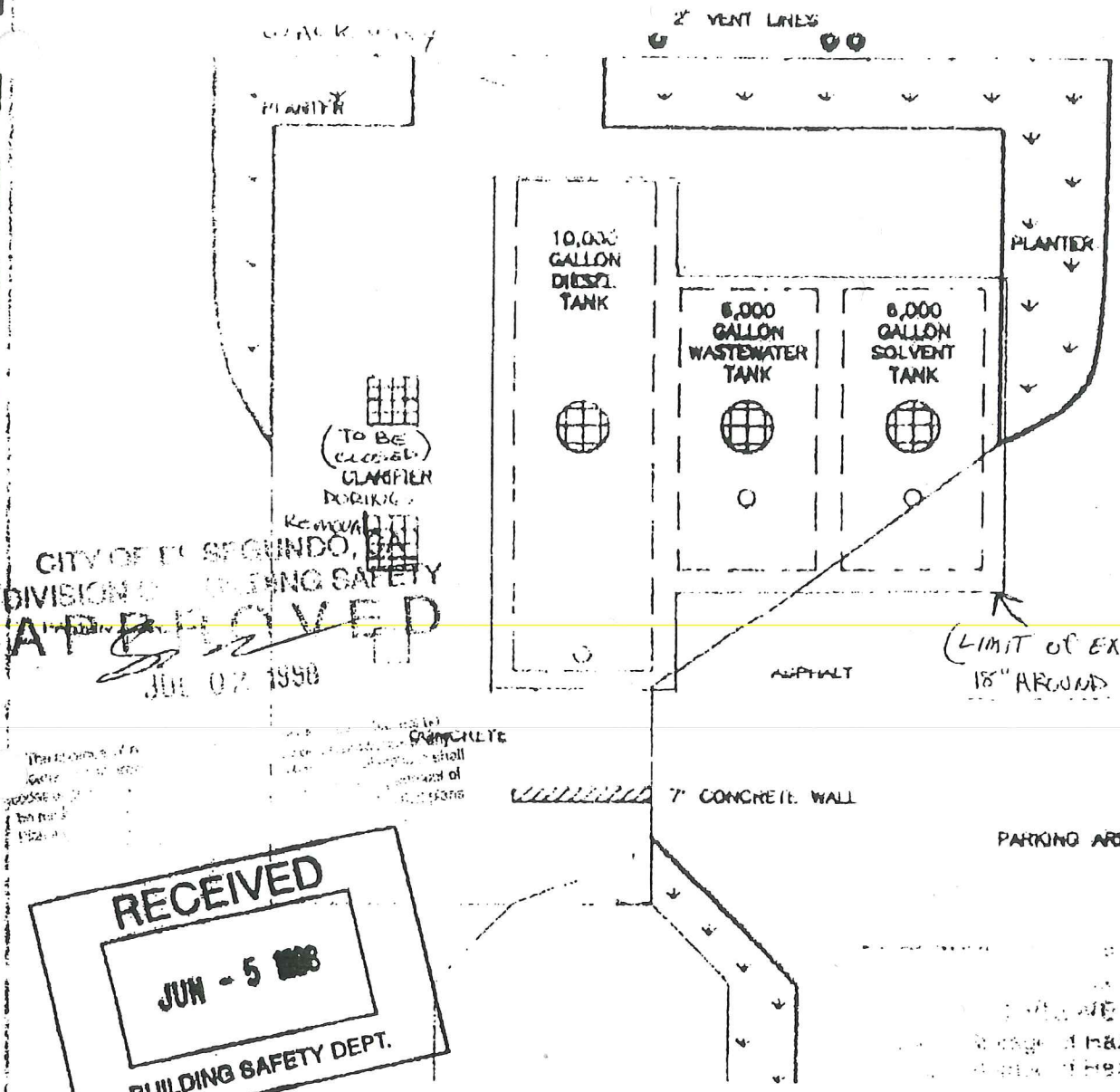
Applicant's Signature [signature] Date 6-3-93
Print Name MARK TEMPLETON Phone (714) 249-2225
Owner [ ] Operator [ ] Contractor [X]

To be completed by ESFD

Pursuant to section 6.22.010 of the City of El Segundo Municipal Code, permission is hereby granted to proceed with the closure described above subject to the conditions and limitation on the reverse side. This permit expires 180 days from the date below.

John W. Gilbert
Acting Fire Chief

By [signature] Date 6/2/93



CITY OF EL SEGUNDO, CA
DIVISION OF BUILDING SAFETY
APPROVED
JUL 07 1998

RECEIVED
JUN - 5 1998
BUILDING SAFETY DEPT.

Hazardous Materials
Hazardous Materials

monitoring devices, vents or
shall be installed as shown on
in compliance with the Uniform Fire Code,
Uniform Mechanical Code, National Electrical
Code and other applicable laws and ordinances.
No additions or alterations shall be made without the
written permission of the El Segundo Fire Department.

Date 7/2/98

UNDERGROUND STORAGE TANK
ABANDONMENT PROJECT
330 KANSAS STREET
EL SEGUNDO, CALIFORNIA 90245

APPENDIX C

TANK RINSEATE MANIFEST

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. CAD0983003[illegible]	Manifest Document No. 84834	2. Page 1 of 1	Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address International Rectifier, 233 Kansas Street, El Segundo CA 90245	A. State Manifest Document Number 98584834
4. Generator's Phone (310) 322-3331	B. State Generator's ID [illegible]
5. Transporter 1 Company Name Hazardous Waste Transportation Services, Inc. — 6. US EPA ID Number CAD981460156	C. State Transporter's ID
	D. Transporter's Phone (562) 906-0588
7. Transporter 2 Company Name — 8. US EPA ID Number	E. State Transporter's ID
	F. Transporter's Phone
9. Designated Facility Name and Site Address DeMenno/Kerdoon, 2000 North Alameda Street, Compton CA 90222 — 10. US EPA ID Number CAT080013352	G. State Facility's ID CAT080013352
	H. Facility's Phone (310) 537-7100

11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste Number
a. NON-RCRA Hazardous Waste Liquid (Tank Rinseate) (California Regulated)	001	TT	02200	G	State 134; EPA/Other NONE
b.					State; EPA/Other
c.					State; EPA/Other
d.					State; EPA/Other

J. Additional Descriptions for Materials Listed Above

11a) Tank Rinseate

K. Handling Codes for Wastes Listed Above

a. 12 b. c. d.

15. Special Handling Instructions and Additional Information

USE PROPER SAFETY EQUIPMENT
DOT Emergency Guidebook
a) none

BILL TO: HTS
Emergency Response Contact
(562)906-0588 or (310)322-3331

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

		Month	Day	Year
Printed/Typed Name [illegible]	Signature [illegible]	07	31	98

17. Transporter 1 Acknowledgement of Receipt of Materials

		Month	Day	Year
Printed/Typed Name BRAD BUTLER	Signature [illegible]	07	31	98

18. Transporter 2 Acknowledgement of Receipt of Materials

		Month	Day	Year
Printed/Typed Name	Signature			

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

		Month	Day	Year
Printed/Typed Name [illegible]	Signature [illegible]	08	03	98

DO NOT WRITE BELOW THIS LINE.

DTSC 8022A (4/97)
EPA 8700—22

Green TRANSPORTER RETAINS

IN CASE OF EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA, CALL 1-800-852-7550

APPENDIX D

TANK DISPOSAL DOCUMENTATION

Appendix A-6

Post-it® Fax Note | Date 10-2-98 | # of pages 2
To Don Ram
Fax # 379-5315
From Maria / Excell
Phone # 249-7225

[redacted]
METAL
RECYCLING, INC.

2202 South Milliken Avenue
Ontario, CA 91761
(714) 988-8000

No 41 31

TANK DISPOSAL FORM

Date: 9 28 ,19 98
Job # brought in
P.O. # 8/17/98

CONTRACTOR: Excell Excavating
ADDRESS:
JOB SITE: International Rectifier
ADDRESS: 330 KANSAS St - El Segundo
DESTINATION: A.M.R. 2202 S. Milliken Ave, Ontario, CA 91761

DATE	TIME	PROJECTED TANKS	ORDERED BY	I.D. NO

SPECIAL INSTRUCTIONS: C/O Nieto & Sons

TIME IN:
TIME OUT:

1-10K
1-6K (S)

✓	Services Rendered	Cost
	Disposal Fee	200.00
	Extensive Loading Time	150.00
	Disposal Fee with Permit	300.00
	Fiberglass Tank Disposal Fee Per Tank	400.00
	Fiberglass Tank Delivered	200.00
	Doblall Disposal Fee	250.00
	Cancellation Fee	250.00
	TOTAL CHARGES	$

All fees incurred are per load unless specified. Terms are net 30 days from date of invoice. Contractor's signature represents acceptance of terms for payment, and confirms that tank removal complies with State laws.

CONTRACTOR'S SIGNATURE

TANKS RECEIVED

QTY	GALLONS	TYPE F*	TYPE S*	NET TONS	TOTAL
	250	☐	☐	.14	
	500	☐	☐	.21	
	550	☐	☐	.24	
	1000 - 12 ft.	☐	☐	.44	
	1000 - 6 ft.	☐	☐	.61	
	1500	☐	☐	.87	
	2000	☐	☐	.97	
	2500	☐	☐	1.14	
	3000	☐	☐	1.32	
	4000	☐	☐	1.84	
	5000	☐	☐	2.42	
1	6000	☐	X	2.84	
	7500	☐	☐	3.28	
	8000	☐	☐	3.44	
	9000	☐	☐	3.82	
1	10000	☐	X	4.33	
	12000	☐	☐	4.93	

NO. OF TANKS: 2 | TOTAL | NET TONS

*F — FIBERGLASS (*S) STEEL 105

CERTIFICATE OF TANK DISPOSAL / DESTRUCTION

THIS IS TO CERTIFY THE RECEIPT AND ACCEPTANCE OF THE TANK(S) AS SPECIFIED ABOVE. ALL MATERIALS SPECIFIED HAVE BEEN COMPLETELY DESTROYED FOR SCRAP PURPOSES ONLY.

AUTHORIZED REP. | 9/28/98 DATE

P.01 | Sep-28-98 02:12P

8-05-1998 10:18AM FROM ADAMS STEEL 7146305836 Excel Excav. P. 1

CERTIFICATE OF DESTRUCTION

COMPANY NAME International Rectifier

ADDRESS 330 Kansas Street
El Segundo

ADAMS STEEL CERTIFIES THAT 1 10K F/C tank

HAS/HAVE BEEN SCRAPPED, CRUSHED AND TOTALLY DESTROYED ON: 8/3/98

SIGNATURE Cheryl Hartman

TITLE weighmaster

DATE 8/3/98

Adams Steel
3200 E. Frontera Street
Anaheim, California 92806
(714) 630-6523
FAX (714) 630-5836

APPENDIX E

LABORATORY REPORTS
AND CHAIN OF CUSTODY DOCUMENTATION

AMERICAN ANALYTICS

LABORATORY ANALYSIS RESULTS

Client: Secor International, Inc. (HB)
Project No.: J0106-001-01
Project Name: IRC
Sample Matrix: Soil
Method: Priority Pollutant Metals

AA Project No.: A28281
Date Received: 09/15/98
Date Reported: 09/24/98
Units: mg/Kg

Date Sampled:	09/15/98	09/15/98	
Date Analyzed:	09/18/98	09/18/98	
AA ID No.:	76490	76491	
Client ID No.:	T-3	T-4	MRL
Compounds:			
Antimony	<10	<10	10
Arsenic	1.2	1.3	0.5
Beryllium	<1	<1	1
Cadmium	<1	<1	1
Chromium	7.0	8.7	3
Copper	<3	<3	3
Lead	<3	<3	3
Mercury	<0.05	<0.05	0.05
Nickel	4.2	5.6	3
Selenium	<0.5	<0.5	0.5
Silver	<1	<1	1
Thallium	<5	<5	5
Zinc	8.0	8.4	3

MRL: Method Reporting Limit

George Havalias
Laboratory Director

AMERICAN ANALYTICS

LABORATORY QA/QC REPORT

Client: Secor International, Inc. (HB)
Project Name: IRC
Method: Priority Pollutant Metals
Sample ID: Matrix Spike
Concentration: 50 mg/Kg

AA ID No.: 76490
Project No.: J0106-001-01
AA Project No.: A28281
Date Analyzed: 09/18/98
Date Reported: 09/24/98

Compounds	Result (mg/Kg)	Spike Recovery (%)	Dup. Result (mg/Kg)	Spike/Dup. Recovery (%)	RPD (%)	Accept.Rec. Range (%)
Antimony	25.0	50	23.4	47	6	25 - 175
Arsenic	51.4	103	50.4	101	2	50 - 150
Beryllium	42.7	85	42.0	84	1	50 - 150
Cadmium	44.5	89	43.8	88	1	50 - 150
Chromium	45.0	90	44.5	89	1	50 - 150
Copper	47.8	96	45.7	91	5	50 - 150
Lead	47.9	96	47.6	95	1	50 - 150
Mercury	49.9	100	55.0	110	10	50 - 150
Nickel	42.9	86	40.0	80	7	50 - 150
Selenium	54.7	109	53.6	107	2	50 - 150
Silver	51.0	102	50.2	100	2	25 - 175
Thallium	41.8	84	40.8	82	2	50 - 150
Zinc	37.9	76	38.0	76	0	50 - 150

George Havalias
Laboratory Director

AMERICAN ANALYTICS

LABORATORY ANALYSIS RESULTS

Client: Secor International, Inc. (HB)
Project No.: J0106-001-01
Project Name: IRC
Sample Matrix: Soil
Method: EPA 8010

AA Project No.: A28281
Date Received: 09/15/98
Date Reported: 09/24/98
Units: ug/Kg

Date Sampled:	09/15/98	09/15/98	
Date Analyzed:	09/21/98	09/21/98	
AA ID No.:	76490	76491	
Client ID No.:	T-3	T-4	MRL
Compounds:			
Bromodichloromethane	<5	<5	5
Bromoform	<5	<5	5
Bromomethane	<5	<5	5
Carbon tetrachloride	<5	<5	5
Chlorobenzene	<5	<5	5
Chloroethane	<5	<5	5
Chloroform	<5	<5	5
Chloromethane	<5	<5	5
Dibromochloromethane	<5	<5	5
1,2-Dichlorobenzene	<5	<5	5
1,3-Dichlorobenzene	<5	<5	5
1,4-Dichlorobenzene	<5	<5	5
Dichlorodifluoromethane	<5	<5	5
1,1-Dichloroethane	<5	<5	5
1,2-Dichloroethane	<5	<5	5
1,2-Dichloroethene-(trans)	<5	<5	5
1,1-Dichloroethene	<5	<5	5
1,2-Dichloropropane	<5	<5	5
1,3-Dichloropropene-(cis)	<5	<5	5
1,3-Dichloropropene-(trans)	<5	<5	5
Methylene chloride	<50	<50	50
1,1,2,2-Tetrachloroethane	<5	<5	5
Tetrachloroethene	<5	<5	5
1,1,1-Trichloroethane	<5	<5	5
1,1,2-Trichloroethane	<5	<5	5

George Havalias
Laboratory Director

AMERICAN ANALYTICS

LABORATORY ANALYSIS RESULTS

Client: Secor International, Inc. (HB)
Project No.: J0106-001-01
Project Name: IRC
Sample Matrix: Soil
Method: EPA 8010

AA Project No.: A28281
Date Received: 09/15/98
Date Reported: 09/24/98
Units: ug/Kg

Date Sampled:	09/15/98	09/15/98	
Date Analyzed:	09/21/98	09/21/98	
AA ID No.:	76490	76491	
Client ID No.:	T-3	T-4	MRL
Compounds:			
Trichloroethene	<5	<5	5
Trichlorofluoromethane	<5	<5	5
Vinyl chloride	<5	<5	5

MRL: Method Reporting Limit

George Havalias
Laboratory Director

AMERICAN ANALYTICS

LABORATORY QA/QC REPORT

Client: Secor International, Inc. (HB)
Project Name: IRC
Method: EPA 8010
Sample ID: Matrix Spike
Concentration: 40 ug/Kg

AA ID No.: 76490
Project No.: J0106-001-01
AA Project No.: A28281
Date Analyzed: 09/21/98
Date Reported: 09/24/98

Compounds	Result (ug/Kg)	Spike Recovery (%)	Dup. Result (ug/Kg)	Spike/Dup. Recovery (%)	RPD (%)	Accept.Rec. Range (%)
Chlorobenzene	22.8	57	24.4	61	7	38 - 150
Chloroform	38.4	96	39.6	99	3	49 - 133
1,3-Dichlorobenzene	23.6	59	25.2	63	7	7 - 187
Methylene chloride	42.8	107	48.4	121	12	25 - 162
Tetrachloroethene	23.2	58	26.8	67	14	26 - 162
Trichloroethene	25.2	63	21.6	54	15	35 - 146

George Havalias
Laboratory Director

AMERICAN ANALYTICS

LABORATORY ANALYSIS RESULTS

Client: Secor International, Inc. (HB)
Project No.: J0106-001-01
Project Name: IRC
Sample Matrix: Soil
Method: EPA 8015M (Diesel)

AA Project No.: A28281
Date Received: 09/15/98
Date Reported: 09/24/98
Units: mg/Kg

AA I.D. No.	Client I.D. No.	Date Sampled	Date Extracted	Date Analyzed	Results	MRL
76488	T-1	09/15/98	09/22/98	09/23/98	<10	10
76489	T-2	09/15/98	09/22/98	09/23/98	<10	10

MRL: Method Reporting Limit

George Havalias
Laboratory Director

AMERICAN ANALYTICS

LABORATORY QA/QC REPORT

Client: Secor International, Inc. (HB)
Project Name: IRC
Method: EPA 8015M (Diesel)
Sample ID: Matrix Spike
Concentration: 200 mg/Kg

AA ID No.: 76489
Project No.: J0106-001-01
AA Project No.: A28281
Date Analyzed: 09/23/98
Date Reported: 09/24/98

Compounds	Result (mg/Kg)	Spike Recovery (%)	Dup. Result (mg/Kg)	Spike/Dup. Recovery (%)	RPD (%)	Accept.Rec. Range (%)
Diesel Range Organics	240	120	245	123	2	19 - 181

George Havalias
Laboratory Director

AMERICAN ANALYTICS

LABORATORY ANALYSIS RESULTS

Client: Secor International, Inc. (HB)
Project No.: J0106-001-01
Project Name: IRC
Sample Matrix: Soil
Method: EPA 8260

AA Project No.: A28281
Date Received: 09/15/98
Date Reported: 09/24/98
Units: ug/Kg

Date Sampled:	09/15/98	09/15/98	09/15/98	09/15/98	
Date Analyzed:	09/18/98	09/18/98	09/18/98	09/18/98	
AA ID No.:	76488	76489	76492	76493	
Client ID No.:	T-1	T-2	T-5	T-6	MRL
Compounds:					
Benzene	<5	<5	<5	<5	5
Bromobenzene	<5	<5	<5	<5	5
Bromochloromethane	<5	<5	<5	<5	5
Bromodichloromethane	<5	<5	<5	<5	5
Bromoform	<5	<5	<5	<5	5
Bromomethane	<5	<5	<5	<5	5
Butylbenzene	<5	<5	<5	<5	5
Carbon tetrachloride	<5	<5	<5	<5	5
Chlorobenzene	<5	<5	<5	<5	5
Chloroethane	<5	<5	<5	<5	5
Chloroform	<5	<5	<5	<5	5
Chloromethane	<5	<5	<5	<5	5
2-Chlorotoluene	<5	<5	<5	<5	5
4-Chlorotoluene	<5	<5	<5	<5	5
1,2-Dibromo-3-chloropropane	<10	<10	<10	<10	10
Dibromochloromethane	<5	<5	<5	<5	5
1,2-Dibromoethane	<5	<5	<5	<5	5
Dibromomethane	<5	<5	<5	<5	5
1,2-Dichlorobenzene	<5	<5	<5	<5	5
1,3-Dichlorobenzene	<5	<5	<5	<5	5
1,4-Dichlorobenzene	<5	<5	<5	<5	5
Dichlorodifluoromethane	<5	<5	<5	<5	5
1,1-Dichloroethane	<5	<5	<5	<5	5
1,2-Dichloroethane	<5	<5	<5	<5	5
1,2-Dichloroethene-(cis)	<5	<5	<5	<5	5

George Havalias
Laboratory Director

AMERICAN ANALYTICS

LABORATORY ANALYSIS RESULTS

Client: Secor International, Inc. (HB)
Project No.: J0106-001-01
Project Name: IRC
Sample Matrix: Soil
Method: EPA 8260

AA Project No.: A28281
Date Received: 09/15/98
Date Reported: 09/24/98
Units: ug/Kg

Date Sampled:	09/15/98	09/15/98	09/15/98	09/15/98	
Date Analyzed:	09/18/98	09/18/98	09/18/98	09/18/98	
AA ID No.:	76488	76489	76492	76493	
Client ID No.:	T-1	T-2	T-5	T-6	MRL
Compounds:					
1,2-Dichloroethene-(trans)	<5	<5	<5	<5	5
1,1-Dichloroethene	<5	<5	<5	<5	5
1,2-Dichloropropane	<5	<5	<5	<5	5
1,3-Dichloropropane	<5	<5	<5	<5	5
2,2-Dichloropropane	<5	<5	<5	<5	5
1,3-Dichloropropene-(cis)	<5	<5	<5	<5	5
1,3-Dichloropropene-(trans)	<5	<5	<5	<5	5
1,1-Dichloropropene	<5	<5	<5	<5	5
Ethylbenzene	<5	<5	<5	<5	5
Hexachlorobutadiene	<10	<10	<10	<10	10
Isopropylbenzene	<5	<5	<5	<5	5
Isopropyltoluene	<10	<10	<10	<10	10
Methylene chloride	<50	<50	<50	<50	50
Naphthalene	<10	<10	<10	<10	10
Propylbenzene	<5	<5	<5	<5	5
Styrene	<5	<5	<5	<5	5
1,1,1,2-Tetrachloroethane	<5	<5	<5	<5	5
1,1,2,2-Tetrachloroethane	<5	<5	<5	<5	5
Tetrachloroethene	<5	<5	<5	<5	5
Toluene	<5	<5	<5	<5	5
1,2,3-Trichlorobenzene	<5	<5	<5	<5	5
1,2,4-Trichlorobenzene	<5	<5	<5	<5	5
1,1,1-Trichloroethane	<5	<5	<5	<5	5
1,1,2-Trichloroethane	<5	<5	<5	<5	5
Trichloroethene	<5	<5	<5	<5	5

George Havalias
Laboratory Director

AMERICAN ANALYTICS

LABORATORY ANALYSIS RESULTS

Client: Secor International, Inc. (HB)
Project No.: J0106-001-01
Project Name: IRC
Sample Matrix: Soil
Method: EPA 8260

AA Project No.: A28281
Date Received: 09/15/98
Date Reported: 09/24/98
Units: ug/Kg

Date Sampled:	09/15/98	09/15/98	09/15/98	09/15/98	
Date Analyzed:	09/18/98	09/18/98	09/18/98	09/18/98	
AA ID No.:	76488	76489	76492	76493	
Client ID No.:	T-1	T-2	T-5	T-6	MRL
Compounds:					
Trichlorofluoromethane	<5	<5	<5	<5	5
1,2,3-Trichloropropane	<5	<5	<5	<5	5
1,2,4-Trimethylbenzene	<5	<5	<5	<5	5
1,3,5-Trimethylbenzene	<5	<5	<5	<5	5
Vinyl chloride	<5	<5	<5	<5	5
m,p-Xylenes	<5	<5	<5	<5	5
o-Xylene	<5	<5	<5	<5	5
sec-Butylbenzene	<5	<5	<5	<5	5
tert-Butylbenzene	<5	<5	<5	<5	5

MRL: Method Reporting Limit

George Havalias
Laboratory Director

AMERICAN ANALYTICS

LABORATORY QA/QC REPORT

Client: Secor International, Inc. (HB)
Project Name: IRC
Method: EPA 8260
Sample ID: Matrix Spike
Concentration: 40 ug/Kg

AA ID No.: 76463
Project No.: J0106-001-01
AA Project No.: A28281
Date Analyzed: 09/18/98
Date Reported: 09/24/98

Compounds	Result (ug/Kg)	Spike Recovery (%)	Dup. Result (ug/Kg)	Spike/Dup. Recovery (%)	RPD (%)	Accept.Rec. Range (%)
Bromoform	26.0	65	25.6	64	2	45 - 169
Chlorobenzene	36.3	91	36.8	92	1	37 - 160
Chloroform	45.4	114	43.2	108	5	51 - 138
1,1-Dichloroethane	37.0	93	34.7	87	7	54 - 155
1,1-Dichloroethene	36.1	90	33.6	84	7	2 - 234
Isopropylbenzene	42.0	105	42.4	106	1	50 - 150
Propylbenzene	26.1	65	28.1	70	7	50 - 150
1,1,2,2-Tetrachloroethane	28.5	71	31.7	79	11	35 - 157
Toluene	31.6	79	33.5	84	6	47 - 150
1,3,5-Trimethylbenzene	40.8	102	41.2	103	1	50 - 150
Vinyl chloride	26.8	67	24.3	61	9	2 - 251

George Havalias
Laboratory Director

AMERICAN ANALYTICS

LABORATORY ANALYSIS RESULTS

Client: Secor International, Inc. (HB)
Project No.: J0106-001-01
Project Name: IRC
Sample Matrix: Soil
Method: MTBE (EPA 8260)

AA Project No.: A28281
Date Received: 09/15/98
Date Reported: 09/24/98
Units: ug/Kg

AA I.D. No.	Client I.D. No.	Date Sampled	Date Analyzed	Results	MRL
76488	T-1	09/15/98	09/18/98	<20	20
76489	T-2	09/15/98	09/18/98	<20	20
76492	T-5	09/15/98	09/18/98	<20	20
76493	T-6	09/15/98	09/18/98	<20	20

MRL: Method Reporting Limit

George Havalias
Laboratory Director

Appendix A-6

Chain-of Custody Number:

SECOR Chain-of Custody Record

Field Office: SECOR

Address: 5882 BOLSA AVE #200
HUNTINGTON BEACH, CA 92649

☐ Additional documents are attached, and are a part of this Record.

Job Name: IRC

Location: 330 KANSAS ST.
EL SEGUNDO, CA

Project # J0106-001-01 Task # 00
Project Manager DON PRATT
Laboratory AMERICAN ANALYTICS
Turnaround Time NORMAL

Sampler's Name DON PRATT
Sampler's Signature

Analysis Request

Sample ID	Date	Time	Matrix	HCID	TPHg/BTEX/WTPH-G 8015 (modified)/8020	TPHd/WTPH-D 8015 (modified)	TPH 418.1/WTPH 418.1	Aromatic Volatiles 602/8020	Volatile Organics 624/8240 (GC/MS)	Halogenated Volatiles 601/8010	Semi-volatile Organics 625/8270 (GC/MS)	Pesticides/PCBs 608/8080	Total Lead 7421	Priority Pollutant Metals (13)	TCLP Metals	8260 + MTBE		Comments/ Instructions	Number of Containers
76488 T-1	9-15		SOIL			X										X			1
76489 T-2	↓		↓			X										X			1
76490 T-3										X				X					1
76491 T-4										X				X					1
76492 T-5																X			1
76493 T-6																X			1

Special Instructions/Comments:

A28281

Relinquished by:
Sign
Print DON PRATT
Company SECOR
Time 1430 Date 9-16-98

Received by: Courier
Sign
Print Vernon Grant
Company American Analytics
Time 1430 Date 9/16/98

Relinquished by:
Sign
Print
Company
Time Date

Received by:
Sign
Print
Company
Time Date

Sample Receipt
Total no. of containers: 6
Chain of custody seals:
Rec'd. in good condition/cold:
Conforms to record:

Client:
Client Contact:
Client Phone:

SECOR CUSTREC Rev. 1/95

Date: 9/15/98 Page 1

City of El Segundo

Craig S. Pedego, *Fire Chief*

March 25, 1999

Troy Schulze, Environmental Health and Safety Engineer
International Rectifier
233 Kansas Street
El Segundo, CA 90245
Certified Mail: Z 435 533 676

Hazardous Materials Underground Storage Tank Closure Certification - 330 Kansas Street, El Segundo (010118)

Dear Mr. Schulze:

The El Segundo Fire Department has reviewed the final closure report for the underground storage tanks dated November 4, 1998. Based on the information submitted, we find that all closure requirements have been completed. With the provision that the information provided to this agency was accurate and representative of existing conditions, it is our position that no further action is required at this time.

Please be advised that this letter does not relieve you of any liability under the California Health and Safety Code or Water Code for past, present, or future operations at this site. In addition, it does not relieve you of the responsibility to clean up existing, additional, or previously unidentified conditions at the site, which may cause or threaten to cause pollution or otherwise pose a threat to water quality.

Additionally, be advised that changes in the present or proposed use of the site may require further site characterization and mitigation activity. It is the property owner's responsibility to notify this agency of any changes in report content, future contamination findings or site usage.

If you have any questions regarding this matter, please contact Fire Inspector James Carver at jcarver@elsegundo.org, or, by telephone at (310) 607-2239.

Sincerely,

CRAIG S. PEDEGO
FIRE CHIEF

James J. Carver
Fire Inspector

cc: Don Pratt, SECOR International, Inc.
314 Main Street
El Segundo, CA 90245
Phone (310) 322-4311 Fax (310) 414-0929

A. Amar International
Civil & Environmental Engineering Consultants
5 Marysville, Irvine, CA 92602-1063

Revised & Updated Health-Risk Assessment for Olson Property

1415 East Grand Avenue
El Segundo, CA 90245

Prepared for:

PACSAN Management Corporation
and
City of El Segundo Fire Department

Prepared by:

Abnish C. Amar, Ph.D., PE
California Registered Civil Engineer
Registration No. C28906

Date Prepared:	December 30, 2003
Revised & Expanded:	February 08, 2006
Revised:	April 14, 2006
Final Revision:	June 01, 2006

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SECTION 1 - INTRODUCTION AND PURPOSE

This report was prepared by **A. Amar International** pursuant to a request and authorization from Mr. John R. Talbot, Project Manager of Cornerstone Technologies, Inc. The purpose of this study was to provide an evaluation of Health Risk Assessment (HRA) for the Olson Property, located at 1415 East Grand Avenue, El Segundo, California. This study entails a site-specific, health-based risk assessment for soils impacted with Volatile Organic Compounds (VOCs) and possibly metals at the subject site. It should be noted that due to considerable depth to groundwater beneath the site, groundwater contamination is unlikely. Consequently, this study is confined to an evaluation of HRA pertaining to on-site soil and air contamination only. The risk assessment is used to identify the Chemicals of Potential Concern (COPC) and their hazards, exposure routes of entry to humans, and potential fate transport to the surrounding air and soil including vapor intrusion to indoor air that could affect human health and the environment at the subject site. The results of analysis and assessment will be used to ascertain the criteria for a "No Further Action (NFA)" letter for on-site soils containing VOCs and possibly metals as well as for the design and implementation of mitigation measures, if needed, for the proposed residential development.

Following review of a draft document of this report, City of El Segundo's Consultant, SCS Engineers raised concern about the potential for subsurface contamination in soil adversely impacting indoor air quality of proposed residential buildings at the subject site. Accordingly, an estimate of air concentration and associated health risks from subsurface vapor intrusion into on-site buildings using Johnson and Ettinger Model (JEM) is presented in Section 4.2. This first tier screening level modeling assessment was performed to estimate vapor intrusion into buildings based on measured soil gas data. Additionally, we have also addressed other comments provided by SCS Engineers pertaining to our HRA; these responses are provided in the text at appropriate places for immediate clarity. See summary of Major Revisions - Section 1.2.

This final document also addresses SCS review comments dated March 09, 2006. Concerted efforts have been made to respond to various concerns expressed by SCS personnel and resolve the outstanding issues in an objective manner via e-mail correspondence and telephonic discussions.

1.1 Itemized Scope of Work

In accordance with instructions from Cornerstone Technologies, Inc. (CORNERSTONE), the following itemized Scope of Work (SOW) tasks were originally anticipated in this study:

- Perform background research and assessment. Retrieval and review of pertinent site information such as regulatory status, physical and environmental characteristics, current and historical land uses, facility operations, hazardous substances spills and practices etc. will also be performed. Additionally, determine whether the available sampling analytical data is of sufficient quality and quantity and meets regulatory agency's (City of El Segundo Fire Department) Protocols. We have also discussed our overall assessment approach with Agency's Representative (SCS Engineers) to make sure that our assessment approach is commensurate with the Agency's requirements;

- Following a site reconnaissance for gaining overall familiarity with on-site conditions and vicinity, develop an appropriate Conceptual Site Model (CSM) to make sure that exposure pathways and parameters of concern and other conditions at the site reasonably match those taken into account by the mathematical/statistical model(s) for VOCs contamination beneath the site; clearly delineate underlying model assumptions and approximations, if any;

- Perform a Quantitative Assessment, including detailed information on the model input values and calculations, based on the selected CSM; depending upon the availability of data and Agency's preference, we will use USEPA's computational methodology or an equivalent procedure;

- As indicated above, perform a first-tier screening level estimate of indoor air concentration and associated health risks from subsurface vapor intrusion into on-site residential building using Johnson-Ettinger Model (JEM); and

- Prepare a report of findings and recommendations, including rationale and supporting calculations.

1.2 Summary of Major Revisions

Our previous document entitled "Updated Health-Risk Assessment for Olson Property" dated April 16, 2004 was prepared in accordance with our workplan which was approved by the client. SCS, however, instigated several comments upon review and discussion of the document. This section presents a Summary of Major Revisions in response to those comments, discussions and correspondence.

1. Designations of samples CB-1 and CB2 have been corrected to read CV1 and CV2, respectively.

2.a Consistent units of measurements are employed throughout the report; discrepancies, if any, have been removed.

2.b Analyses have been performed for all relevant contaminants for both maximum detected concentrations as well as computed 95% Upper Confidence Limits (UCLs).

3. In order to render the report self-contained and self-explanatory, chronologic summaries of previous soil matrix sampling, soil gas surveys and associated analytical testing conducted by both SECOR and CORNERSTONE are included in the revised HRA document. See Section 2.3. It should, however be noted that copies of all previous reports have already been made available to the appropriate agency as well as SCS; thus none of these reports will be included as attachments to the HRA. A schematic showing locations of all CORNERSTONE as well as SECOR field exploration date is also included in the revised HRA document.

4.a The concept of soil screening levels (SSLs) as a context relative to protection of groundwater in accordance with RWQCB and DTSC's Preliminary Endangerment Assessment (PEA) requirements was employed in our previous report. However, since groundwater contamination is no longer an issue for the subject site, SSLs have been completely eliminated from the HRA report as recommended by SCS in the July 23, 2004 meeting.

4.b Additionally as discussed at the July 23, 2004 meeting, Inspector Tsumura of the City of El Segundo promised to contact Ms. Rebecca Chou of LARWQCB to confirm that the agency does not consider groundwater contamination a potential threat beneath the subject site. As of today, no confirmation has been received from either the City or the regional agency. Groundwater data is not included in the revised HRA since none is currently available except that we have confirmed depth to groundwater in the Project vicinity based on historical records.

5. Generally speaking regarding summation of cancer risk, we have adopted the approach concerning the indoor air intrusion risk to be incremental, that is, the additional risk

which should be added to the existing risk from soil and outdoor air for all carcinogens. Similarly for hazard, we will sum the hazard quotients for each compound over all exposure media and for all chemicals to obtain the total hazard posed by the contaminants at the subject site. This conservative approach discussed at the meeting referenced above is consistent with both DTSC (Reference 5) as well as the Risk Assessment Guidance for Superfund Volume 1, Parts A & B (References 12 & 13, respectively).

6. Our previous HRA document employed soil matrix contaminant data for analysis and modeling. This approach was deemed consistent with traditional philosophy that generally Soil Gas Survey (SGS) is used to identify "hot spots" on a particular site followed by the analytical soil matrix sampling data providing the confirmatory method for determining closure requirements. The main reason for collecting soil gas data however, is because both DTSC and USEPA now prefer the use of soil gas data (rather than soil matrix concentrations) as the basis for indoor vapor intrusion risk assessment. Consequently, this revised, final HRA version will employ SGS data for outdoor ambient air and indoor vapor intrusion risk assessments. Additionally due to the uncertainty associated with conversion of soil gas concentrations into equivalent soil matrix concentrations, we will revert to the use of soil matrix concentrations for calculations of risk/hazard for soil.

7. It should be noted (as discussed with representatives of ESFD and SCS) that the third round of Cornerstone's SGS sampling data indicated results which were generally an order of magnitude higher than any of the results observed during the previous two (2) rounds of SGS and one (1) round of soil matrix efforts and were thus considered "outliers". We are cognizant that the variation in data between soil matrix and SGS can be often quite substantial. This is supported by CRWQCB research as well. Consequently, the client and CORNERSTONE have decided to re-sample SGS sampling locations CV-1 and CV-2 (which previously indicated the highest PCE concentrations) in order to confirm whether or not the earlier SGS measurements were indeed anomalous. SCS was amenable to this approach, allowing us to remove the 3rd. round of SGS data, should those anomalous values be absent in the re-sampling event. Further discussion of re-sampling event (performed on July 29, 2004) along with the analytical results and their utilization in HRA are presented later in this report.

8. Issues related to CAM metals, primarily Arsenic, Lead, Copper and Zinc, detected with nominal concentrations and documented by SECOR, have also been raised by SCS. These issues have been thoroughly reviewed and discussed in the context of their background concentrations embodied in the University of California Publication, dated March 1996 (Ref. 15) and California Human Health Screening Levels (CHHSLs).

   Additionally, CORNERSTONE's Sump & Piping Closure Investigation, dated September 08, 2004, provided supplemental, site specific CAM metals data for confirmation purposes. See Section 2.4.1.2 - CAM Metals for a discussion of Chemicals of Potential Concern (COPC). As discussed in Section 2.4.1.2, all of CAM Metals data reported by SECOR and CORNERSTONE are within their respective published threshold values and thus can be considered background.

9. Our previous report contained a discussion of off-site closure analyses conducted by other agencies for site(s) in the vicinity of subject site. This information had been provided as a context in which to assess the project site which we believe to be a standard practice in Southern California. However, as suggested by SCS, this comparative discussion regarding off-site closure analysis will be removed; thus all data and analysis in this document is site-specific.

10. We have utilized the most current version of the Johnson-Ettinger model that is available from the DTSC website. Please see Section 4.2.1, page 29 for additional details concerning the model used. Furthermore, since site specific data is not available and as earlier agreed to by SCS except for site-specific contaminant data we will input "default" values to obtain the HRA calculations.

11. Project Drawings of the footprints of proposed buildings of living spaces were also reviewed prior to preparing the model input data.

12. Discussion of the vapor barrier in the HRA will be limited to "a membrane will be installed". Detailed engineering of the membrane is not required at this stage. 60 mil membrane beneath the living spaces will be used regardless of the results of risk calculations.

13. As recommended by SCS, we have utilized the box model concept for predicting pollutant concentrations for (ambient) air pathway. The governing equation was referred to us by SCS, supplemented by additional appropriate literature search.

SECTION 2 - BACKGROUND RESEARCH AND ENVIRONMENTAL SETTING

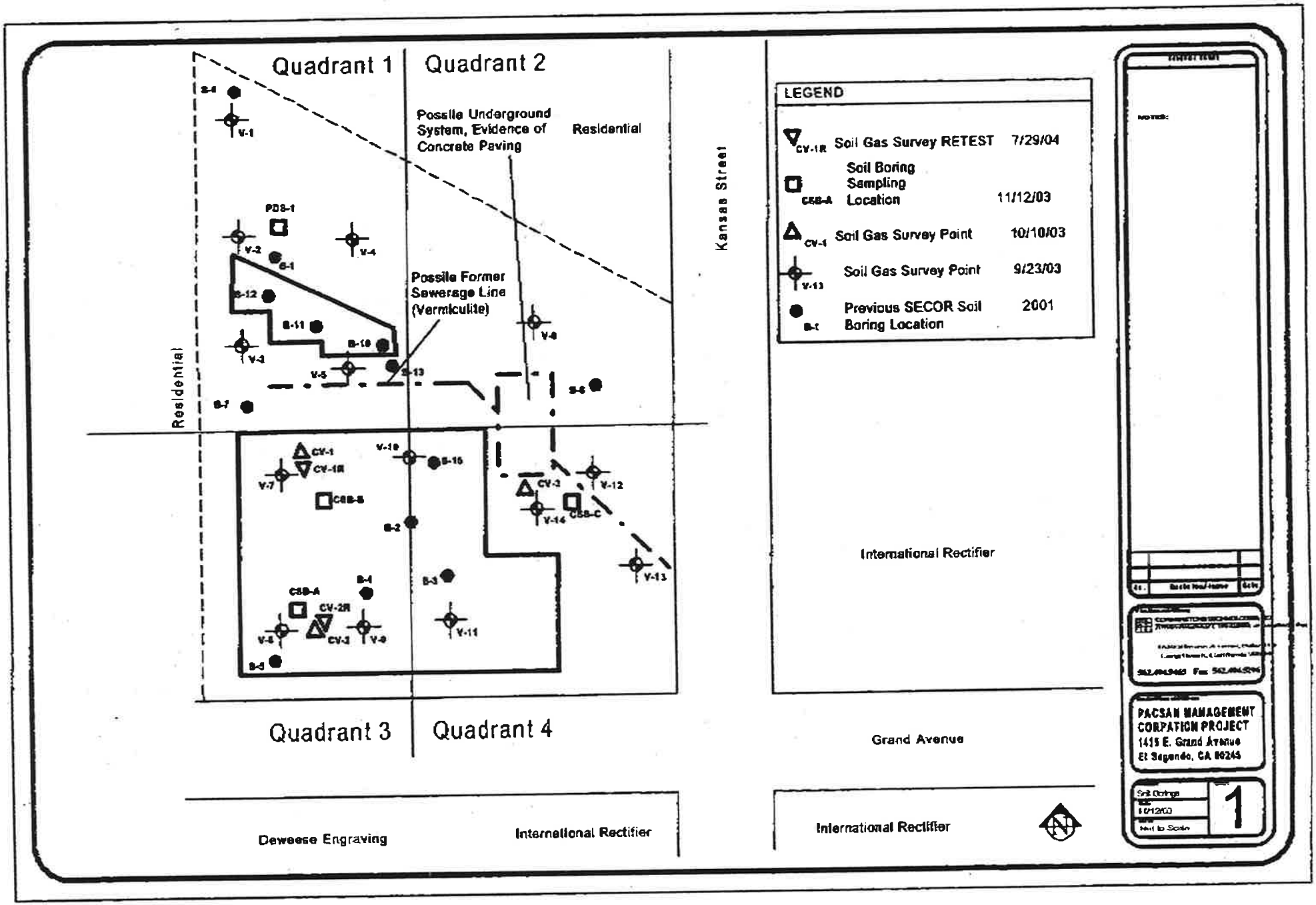
2.1 Objectives and Rationale

A primary objective in conducting an HRA involves retrieval and compilation of pertinent, site specific data and information pertaining to an appropriate analysis and evaluation; the latter is performed to determine whether current or past waste management practices at the subject site have resulted in the (suspected or actual) release of hazardous substances which pose a potential or actual threat to public health and/or the environment. This background information can then be advantageously used in delineating the extent of the contamination as well as in providing an indicator of relative risk associated with on-site waste management practices, past and/or present. Additionally, this information forms the foundation for the development of a scientific Conceptual Site Model (CSM); the screening evaluation based on CSM, for each Chemical of Potential Concern (COPC) then calculates a quantitative risk and/or hazard for soil, and air pathways including subsurface vapor intrusion into on-site residential buildings.

2.2 Field Reconnaissance and Setting

The property is located on the northwest corner of Grand Avenue and Kansas Street in the City of El Segundo, about 1.5 - 2.0 miles from the ocean. As noted during our recent field reconnaissance, the property is surrounded by residential properties on the northwest and developed industrial/commercial properties in all other directions.

Generally, the area is comprised of a rolling terrain and part of the property is located on an elevated pad. The ground slopes from West to East with surface drainage onto Kansas Street, with surface elevation of the Property being approximately 120 - 125 ft. above MSL. Active oil production facilities have been in operation in the general vicinity of the Site within the City limits; however, no oil wells are presently in production on the subject site and its immediate vicinity. As discussed in a later section, the property is located on the El Segundo Sand Hills, a Quaternary age deposit of active and inactive/old Dune Sands. The subject property and its surroundings are depicted on Exhibit 1 - Site Location Map; this Exhibit also shows locations of previous soil borings and soil gas survey points.


Quadrant 1
Quadrant 2
Quadrant 3
Quadrant 4
Possile Underground System, Evidence of Concrete Paving
Residential
Possile Former Sewerage Line (Vermiculite)
Residential
Kansas Street
PDS-1
V-1
V-2
V-3
V-4
V-5
V-6
V-7
V-8
V-9
V-10
V-11
V-12
V-13
S-1
S-2
S-3
S-4
S-5
S-6
S-7
S-10
S-11
S-12
S-13
S-15
CV-1
CV-1R
CV-2
CV-2R
CV-3
CSB-A
CSB-B
CSB-C
LEGEND
CV-1R Soil Gas Survey RETEST 7/29/04
CSB-A Soil Boring Sampling Location 11/12/03
CV-1 Soil Gas Survey Point 10/10/03
V-13 Soil Gas Survey Point 9/23/03
B-1 Previous SECOR Soil Boring Location 2001
International Rectifier
Grand Avenue
Deweese Engraving
International Rectifier
International Rectifier
PACSAN MANAGEMENT CORPATION PROJECT
1415 E. Grand Avenue
El Segundo, CA 90245
Soil Borings
Not to Scale
1

2.3 Chronologic Summaries of Previous On-Site Soil Matrix and Soil Surveys

As discussed in Section 1.2 - Summary of Major Revisions, this Section presents chronologic summaries of all relevant previous Soil Matrix and Soil Gas Surveys (SGS) sampling investigations and associated analytical testing activities conducted by both SECOR and CORNERSTONE. Various site assessments, their procedures and protocols as well as their results are summarized in the following paragraphs. As indicated earlier, Exhibit 1 shows locations of previous soil borings and SGS points.

2.3.1 SECOR's Phase - II Site Assessment (Reference 22)

Following approval of SECOR's proposed Scope of Work (SOW) on November 06, 2002, SECOR mobilized to the site on November 13 - 14, 2002 and completed the work in accordance with methodologies and protocols of DTSC. A total of 13 borings were advanced across the site upto a maximum depth of exploration of 20 ft bgs using a geoprobe drill rig. However, since work was halted prematurely, no report documenting the work was generated. According to the Los Angeles County Department of Public Works, depth to the groundwater was measured at 101.3 feet below ground surface (bgs) in a public water well located ½ mile north of the Site (Well #1297H) at the intersection of Walnut and California Streets. Groundwater flow is reported by EDR to flow in a general northwest direction. The following summary is available, based on analyses of selected samples for VOCs, TPH and Title-22 CAM Metals.

- With the exception of sample B10@2, TPH was not reported at or above laboratory reporting limits in analyzed samples. TPH, generally quantified as motor oil, was reported at a concentration of 440 mg/Kg in sample B10@2;
- Methane gas was detected at concentrations ranging from < 1% to a maximum concentration of 7% LEL in Boring B5;
- PCE and TCE were reported in samples at maximum concentrations of 0.034 and 0.031 mg/Kg respectively in samples B10@5, B10@10, B12@5, and B12@15. In addition, Cis 1, 2-dichloroethene (DCE) was reported in sample B12@5 at a concentration of 0.004 mg/Kg;
- Maximum concentrations of the following metals were detected during the investigation:
  Arsenic (AS) : 2.4 mg/Kg

Barium (Ba)	:	33 mg/Kg
Chromium (Cr)	:	23 mg/Kg
Cobalt (Co)	:	3.5 mg/Kg
Copper (Cu)	:	200 mg/Kg
Lead (Pb)	:	33 mg/Kg
Mercury (Hg)	:	0.037 mg/Kg
Nickel (Ni)	:	9.5 mg/Kg
Vanadium (V)	:	17 mg/Kg
Zinc (Zn)	:	74 mg/Kg

Although these concentrations are not considered significant, we will address the above detected metal concentrations as they might potentially affect Human Health in a later Section entitled Chemicals of Potential Concern (COPC), using published background concentrations for Southern California as well as USEPA's Region 9 Preliminary Remediation Goals (PRGs).

- Finally, to further evaluate the lateral and vertical extent of VOCs beneath the Site, SECOR proposed to advance twelve (12) soil vapor points at regularly spaced intervals across the subject property to establish a baseline distribution of VOC impact.

2.3.2 Cornerstone Technologies, Inc's (CORNERSTONE) First Round of Soil Gas Survey September 23, 2003 (Reference 1)

CORNERSTONE was retained by Pacsan Management Corp. to complete the SECOR workplan for "Continued Assessment of Soil Impact by VOC's" in accordance with the SECOR's workplan dated March 27, 2003. CORNERSTONE discussed the Project with the City of El Segundo and their Consultant, SCS Engineers and obtained their approval. Originally, these preliminary results of Soil Gas Survey (SGS) were to provide data to place two (2) soil borings to a depth of 40 ft bgs and collect soil samples at 5 ft interval's in two (2) suspected areas with the highest VOC Concentrations. However, SCS expressed a preference instead to Pneumatically advance three (3) deeper soil gas points to a depth of 40 ft bgs (or as achievable), the rationale being that due to coarse sandy strata underlying the Site (this is further discussed in a later Section entitled "Geological, Soils and Hydrogeologic Characteristics), deeper gas points would provide more accurate information than that provided by bulk sampling. Sampling would thus be consistent with previous VOC

analyses. A total of fourteen (14) soil gas points V-1 through V-14, as shown on Exhibit 1, were placed within four (4) Quadrants (1 through 4) encompassing the entire Site. The two (2) additional soil gas points, V-13 and V-14, were added in the general vicinity of V-12 to better characterize higher than average VOC Concentrations. Almost the most common detected halogenated VOCs in vapor/soil samples were TCE and PCE, a solvent and its breakdown bi-products commonly used by parts cleaning or degreasing agent.

Table - 1 below summarizes the data analyzed during this round of Site Assessment.

Table - 1
Soil Gas Survey Results (September 23, 2003)
VOCs by GC/MS
Results Reported in μg/L

Soil Point Location	VOCs 7' bgs	VOCs 14' bgs	Methane ppmv 7'/14'
V-1	All Compounds ND	4.0 Cis 12 6.2 DCE 2.1 TCA 4.0 TCE	
V-2	20 Cis 12 4.0 DCE 6.2 TCE	2.3 DCE	
V-3	1.2 DCE	1.2 Cis 12 2.5 DCE 1.7 TCE	
V-4	2.8 Cis 12 7.3 DCE 1.5 PCE 2.8 TCA 38 TCE	All Compounds ND	
V-5	2.3 Cis 12 5.5 DCE 8.2 PCE 2.8 TCA 99 TCE	3.2 DCE	

Soil Point Location	VOCs 7' bgs	VOCs 14' bgs	Methane ppmv 7'/14'
V-6	3.1 TCE (1 pv) 2.2 DCE (3 pv) 9.1 PCE (3 pv) 2.1 TCA (3 pv) 70 TCE (3 pv) 2.8 DCE (7 pv) 45 PCE (7 pv) 2.1 TCA (7 pv) 160 TCE (7 pv)	All Compounds ND	
V-7	11 Cis 12 11 DCE 630 PCE 630 TCE	680 PCE 610 TCE	ND/ND
V-8	4.2 Cis 12 6.3 DCE 490 PCE 4.4 TCA 450 TCE	6.6 Cis 12 9.3 DCE 85 PCE 7.8 TCA 370 TCE	ND/ND
V-9	3.2 Cis 12 4.8 DCE 180 PCE 3.0 TCA 360 TCE	2.3 TCE	ND/25
V-10	3.2 Cis 12 5.4 DCE 3.7 PCE 2.8 TCA 66 TCE 3.1 Cis 12 (dup) 6.1 DCE (dup) 3.7 PCE (dup) 3.0 TCA (dup) 68 TCE (dup)	2.8 Cis 12 6.7 DCE 1.4 PCE 3.4 TCA 28 TCE	

Soil Point Location	VOCs 7' bgs	VOCs 14' bgs	Methane ppmv 7'/14'
V-11	1.1 Cis 12 4.2 DCE 1.5 TCA 26 TCE	1.4 Cis 12 4.6 DCE 1.8 TCA 8.4 TCE	
V-12	4.5 DCE 2.4 PCE 1.2 TCA 74 TCE	All Compunds ND	
V-13	2.6 PCE 27 TCE	2.4 DCE 1.3 PCE 32 TCE	
V-14	1.3 Cis 12 4.0 DCE 210 PCE 1.5 TCA 240 TCE	1.4 Cis 12 7.2 DCE	

Notes:
DCE = 1.1 - Dichloroethene
Cis 12 = Cis 1, 2 - Dichloroethene
PCE = Tetrachloroethene
TCA = 1,1,1 - Trichloroethane
TCE = Trichloroethene
ND = All Compounds are "Non-Detect" below method detection limits
pv = Purge Volumes (per QA/QC requirements, 1, 3, or 7)
dup = Duplicate Sample (per QA/QC requirements)
Soil Point Locations 7,8 and 9 tested for Methane reported in ppmv

2.3.3 CORNERSTONE's Second Round of Soil Gas Survey -- November 05, 2003 (Reference 25)

In order to obtain additional preliminary soil gas data, three (3) 40' soil borings were advanced at the subject site at the locations shown on Exhibit 1. Samples CV-1, CV-2, and CV-3 at depths ranging between 10 ft and 40 ft were retrieved and analyzed for 25 target compounds. Table 2 presents a summary of analytical results for all compounds detected above their respective detection limits.

Table - 2

Soil Gas Survey Results (November 05, 2003)
VOCs by GC/MS
Results Reported in μg/L

Sample Point Depth	CV - 1	CV - 2	CV - 3
10'	PCE 2,900	2,500	310
	TCE 1,400	1,500	300
	1,2 - DCE 13	15	5.2
	Cis 12 - DCE 14	12	1.3
	1,1,1 TCA 11	12	2.2
	Freon 113 ND	5.8	ND
20'	PCE 3,500	3,600	1,000
	TCE 1,800	1,700	840
	1,1 DCE 20	ND	18
	Cis 1,2 - DCE ND	ND	3.6
	1, 1, 1 - TCA ND	ND	5.1
	Freon 113 ND	ND	5.8
30'	PCE 3,500	3,200	1,100
	TCE 2,100	1,800	930
	1,1 DCE 21	ND	14
	Cis 1,2 - DCE 21	ND	ND
	1,1,1 - TCA ND	ND	5.8
	Freon 113 ND	ND	4.2
40'	PCE 4,200	3,300	1,100
	TCE 2,300	1,800	910
	1,1 - DCE ND	ND	17
	Cis 1,2 - DCE 23	ND	ND
	1,1,1 TCA ND	ND	6.2
	Freon 113 ND	ND	5.2

Notes:

1,1 - DCE	=	1,1 - Dichloroethene
Cis 1,2 - DCE	=	Cis 1,2 - Dichloroethene
Freon 113	=	1,1,2 - Trichloroethane 1,2,2 - Trifluoroethane
1,1,1 - TCA	=	1,1,1 - Trichloroethane
PCE	=	Tetrachloroethene
TCE	=	Trichloroethene

We wish to reiterate that the most commonly detected halogenated VOCs in these vapor/soil samples were Trichloroethene (TCE) and Tetrachloroethane (PCE), a solvent and its breakdown by-products used by parts cleaning and degreasing agents.

As discussed in CORNERSTONE's Letter Report entitled "Raw Data - Soil Gas Survey Preliminary Results", maximum concentrations of PCE and TCE ranging up to 4,200 μg/L and 2,500 μg/L were encountered in CV-1 and CV-2, respectively in the South-West Quadrant (Quadrant 3) of the properly. Our review of the entire compiled database of the subject site indicates that these anomalous raw values are outliers, confined in an isolated area of the site. This issue is further addressed in CORNERSTONE's 4th. Round of SGS Retest - July 29, 2004 (Reference 23).

2.3.4 CORNERSTONE's 3rd. Round of Site Assessment for Three (3) Soil Borings -- November 12, 2003 (Reference 2)

In order to obtain the data necessary to determine on-site VOC levels following strict RWQCB Site Assessment Guidelines, Cornerstone attempted to pneumatically advance three (3) soil borings to a depth of 80' below ground surface (bgs). Due to Site Geological conditions CORNERSTONE was able to meet a maximum depth of 60' bgs. Soil analysis was conducted on-site by American Analytics, a State Certified Environmental Testing Laboratory following strict Method 5035 protocols for analysis by EPA Method 8260B VOCs.

The rationale for placement of the Soil Borings was based on the use of the Soil Gas Survey Data as a method for identifying the location(s) of the highest potential soil concentrations. Three (3) locations were chosen and agreed to by SCS, the locations were identified as Soil Borings CSB-A, B and C.

The highest PCE concentration detected was 110 μg/Kg in CSB-A-50' and in CSB-C-50' at 100 μg/Kg. The highest TCE concentration detected was 52 μg/Kg in CSB-A-50'. Table 3 Presents a summary of Soil Sampling Analytical Results for this round of site assessment.

Table - 3
Soil Sampling Results (November 12, 2003)
VOCs by GC/MS
Results Reported in μg/Kg

Soil Point Depth	CSB - A	CSB - B	CSB - C
5'	66 PCE 2.1 Toluene 50 TCE	All Compounds ND	12 PCE 5.1 TCE
10'	19 PCE 13 TCE	All Compounds ND	6.6 PCE 10 TCE
15'	21 PCE 14 TCE	11 PCE 7.0 TCE	8.5 TCE
20'	14 PCE 3.9 Toluene 19 TCE 3.4 m.p - Xylenes	21 PCE 11 TCE	All Compounds ND
25'	11 PCE 7.2 TCE	44 PCE 25 TCE	All Compounds ND
30'	83 PCE 27 TCE	72 PCE 37 TCE	5.4 PCE 5.9 TCE
35'	86 PCE 31 TCE	28 PCE 18 TCE	18 PCE 14 TCE
40'	71 PCE 27 TCE	8.0 PCE	8.0 PCE 9.4 TCE
45'	31 PCE 17 TCE	8.0 PCE	9.8 PCE 8.4 TCE
50'	110 PCE 52 TCE	17 PCE 12 TCE	100 PCE 22 TCE
55'	37 PCE 22 TCE	51' Refusal 65 PCE 37 TCE	55' Refusal 7.9 PCE
60'	60' Refusal 17 PCE 19.1 TCE		

Notes: PCE = Tetrachloroethene
TCE = Trichloroethene
ND = All Compounds are "Non-Detect" below method detection limits.

2.3.5 CORNERSTONE's 4th. Round of Soil Gas Survey Retest -- July 29, 2005 (Reference 23)

The previous round of SGS data indicated results that were an order of magnitude higher than any of the results observed during the earlier Soil Gas (and Soil Matrix) Sampling efforts and thus were suspected to be "outliers". According to RWQCB research and experience, variation between Soil Matrix and SGS data can be often substantial. Since SCS has expressed a preference for the use of SGS data for HRA, CORNERSTONE and the Client (with the consent of SCS and the City) have chosen to re-sample and re-analyze previous SGS survey locations CV-1 and CV-2 to confirm whether or not the earlier SGS readings were anomalous (the highest concentration of PCE being 4,200 μg/L at CV-1-40').

Accordingly, resampling was conducted on July 29, 2004 in the presence of representatives of the City and SCS. Upon the recommendation of SCS, Cornerstone used a third outside SGS laboratory (H&P Mobile Geochemistry) to perform the drilling and analysis.

The results revealed much lower concentrations and are summarized in Table - 4 below. It should be noted that optimum Purge Volume was determined to be P3. Thus P1 and P7 values for CV-2R-20' are not included in this Table since they were run as QA/QC calibration.

These values are used in the revised HRA with the previous values to be considered as "outliers".

Table - 4
Soil Gas Survey Results (July 29, 2004)
VOCs by GC/MS

(μg/L)				
SGS Point/Depth	TCE	PCE	1.1 - DCE	Other
CV-1R-10'	610	790	12	-
CV-1R-20'	990	1.300	19	-
CV-1R-30'	1,600	1,100	20	11 (Cis-1,2 - DCE)
CV-1R-40'	1,300	1,100	22	12 (Cis-1,2 - DCE) 11 (1,1,1 - TCA)
CV-2R-10'	360	280	11	
CV-2R-20'	930	780	24	1.1 (DCDFM 1.7 (TCFM) 8.8 (Freon 113) 14 (Cis-1,2 - DCE)
CV-2R-30'	540	440	16	18 (1,1,1 - TCA)
CV-2R-38'	750	890	15	

Notes: Max. Depth 38' Due to Probe Refusal

1, 1 - DCE	=	1, 1 - Dichloroethene
Cis 1, 2 - DCE	=	Cis 1, 2 - Dichloroehene
1, 1 DCDFM	=	Dichlorodifluoromethane
TCFM	=	Trichlorofluoromethane (99016)
Freon 113	=	1, 1, 2 - Trichloro; 1, 2, 2 - Trifluoroethane
1, 1, 1 - TCA	=	1, 1, 1 - Trichloroethane
PCE	=	Tetrachloroethane
TCE	=	Trichloroethene

All sampling and analytical procedures complied with the American Society for Testing and Materials Standard Guide for Soil Gas Monitoring in the Vadose Zone (ASTMD5314 - 93) and the LA-RWQCB Soil Gas Guidelines (February 1997 Version). For further details, see Reference 27.

2.3.6 CORNERSTONE's Sump & Piping Closure Investigation -- September 08, 2004 (Reference 3)

In compliance with its grading sampling contingency plan, CORNERSTONE retrieved a solid sample PDS-1, among others, on August 05, 2004 from stained soil at the sump

location, as shown on Exhibit 1.

All soil samples were collected in accordance with procedures specified in California Code of Regulations (CCR) Title 22, Division 4.5, Chapter 11 Article 3. Section 66261.20(c). On account of Health and Safety Precautions, each sample that was obtained during the investigation was screened using a photo-ionizing detector (PID). Soil samples were obtained using a split-barrel modified California sampler, manually driven into the soil for sample retrieval. The soil samples were then transported under chain of custody documentation to a California State-certified Lab Associated Laboratories, in Orange, California for analysis. Once the soil was removed, the cavity was backfilled as part of the site grading operation.

Sample PDS-1 showed nominal concentrations of metals.

Summary of test results is presented in Table 5 below.

Table - 5
Summary of Test Results for CAM Metals (Sample PDS-1)
(September 08, 2004)

6010B ICP CAM Metals Only	Test Results (mg/Kg)
Antimony	ND
Arsenic	ND
Barium	45.4
Beryllium	ND
Cadmium	0.94
Chromium	15.5
Cobalt	4.73
Copper	12.6
Lead	ND
Molybdenum	ND
Nickel	7.32
Selenium	ND
Silver	ND
Thallium	ND
Vanadium	28.8
Zinc	22.6

2.4 Summary of Site Assessment Results and Potential Impact to Groundwater

Following completion of the Preliminary Soil Gas Survey, CORNERSTONE contacted Ms. Rebecca Chou of the Regional Water Quality Control Board (RWQCB) concerning the criteria for NFA for on-site soils containing relatively low levels of VOCs as well as for determining the need for performing an HRA and design of any necessary mitigation measures for the project site. Following review of the results of recent soil gas survey and related documents, Ms. Chou indicated that this case was not considered a "threat to groundwater" at this point, and directed Cornerstone to continue with implementation of closure requirements through The Lead Agency ESFD for the soils at the subject site, ensuring that all assessments are conducted in accordance with the guidelines of RWQCB.

As indicated in the SECOR Report, historical depth to the groundwater according to the Los Angeles County Department of Public Works (LACDPW), was measured at 101.3 ft below ground surface (bgs) in a public water well (Well No. 1297H) located 0.5 mile North of the Site at the intersection of Walnut and California Streets.

Based on the results of environmental site assessment, coupled with considerable depth to groundwater (>100 ft. bgs) it is the author's opinion that there is a low probability of impact to the water bearing zone.

Consequently, the risk/hazard from water exposure need not be calculated for the subject site. No definitive confirmation of groundwater impact has, however, been received from LARWQCB or ESFD.

We agree with SCS Engineers that since the ground-water issue is no longer relevant for the subject site, the computed soil screening levels (SSLs) may not be appropriate for the City's objectives; SSLs developed using RWQCB's Guidelines, March 1996, presented earlier in our draft report were intended for the protection of ground-water and have been eliminated. Analytical and modeling assessments pertaining to soil, ambient air and vapor intrusion to indoor air are discussed in Section 4.

SECOR's Workplan is the beginning point at which CORNERSTONE and AAI began working on the project. The Workplan clearly demonstrates that the City's focus is on VOCs, primarily PCE and TCE. Analyses and Modeling have, however, been performed

for all constituents, including metals, if encountered above the threshold values. See Subsections 2.4.1 & 2.4.2 below.

2.4.1 Chemicals of Potential Concern (COPC)

2.4.1.1 VOCs: As indicated earlier, the SECOR Workplan, which constituted the beginning point at which CORNERSTONE and AAI started working on the project, demonstrates that the City's focus is on VOCs, principally PCE and TCE. However, review of CORNERSTONE's Soil Gas Survey Retest Results (Ref. 23) indicates that several chemical constituents in addition to PCE and TCE were identified with the maximum concentrations as shown in the tabulation below:

Chemical Constituent	Maximum Concentration (μg/L)
PCE	**1,300**
TCE	**1,600**
Cis 1, 2 - Dichloroethene	**14**
1, 1 - Dichloroethene (DCE)	**24**
1, 1, 1 - Trichloroethene (TCA)	**18**
Freon 113	**8**
Trichlorofluoromethane **Dichlorodifluoromethane**	**1.7** **1.1**

We wish to make the following observations regarding Freon 113 (Case No. 76131), Trichlorofluoromethane (TCFM, Case No. 75894) and Dichlorodifluoromethane (DCDFM, Case No. 75718) based on our literature survey.

Freon 113 (alternatively known as 1, 1, 2 - Trichloro 1, 2, 2 - Trifluoroethane) is not designated for cancer risk ("ca") by USEPA; no published PRG is thus available. TCFM and DCDFM were encountered with extremely minute concentrations whose published PRGs (being 730 and 210 μg/m3, respectively, in ambient air) are several orders of magnitude higher than their maximum concentrations detected on-site. No further evaluation is, therefore, warranted for these constituents.

Modeling/Simulations for all other constituents for evaluation of risk and hazard for soil, air and indoor vapor intrusion are presented in later sections.

2.4.1.2 CAM Metals: Maximum detected on-site concentrations of various metals, based on SECOR Phase - II Site Assessment (Ref. 22) and CORNERSTONE's Sump and Piping Closure Investigation (Ref. 3), were presented in an earlier Section. We concur with SCS toxicologist's comment that metals will not be an issue at this site. Our rationale is as follows:

It should be noted at the outset that recent regulatory developments concerning metals encountered at the site permissibly allow the use of background concentrations of these naturally occurring chemicals even where those levels are higher than California Human Health Screening Levels (CHHSLs). This is because CalEPA/DTSC as well as USEPA do not require cleanup of metals contaminated soil to concentrations below background levels for sites that have been adequately characterized. As a matter of fact, site-specific concentrations of all seventeen (17) CAM metals including Arsenic (As), based on SECOR and CORNERSTONE investigations (listed in second column of Table 6) were compared with background concentrations (Bradford, et. al. study, Ref. 15) as well as with EPA Region 9 Published PRGs (Ref. 6), also shown in coulumns 3 and 4, respectively, of Table 6. Neither DTSC nor EPA Region 9 recognizes As as an exception for such comparisons or requires the determination of local background concentrations for CAM metals. Indeed, the Bradford et. al. study reference was recommended and provided to us by SCS. We reiterate that all metal concentrations including As are site-specific and of very small concentrations or NDs. This means that the site has been adequately characterized and consequently, DTSC and EPA Region 9 rationales have been satisfied.

As stated above, Table 6 summarizes maximum detected on-site concentrations of various metals along with available background concentration and Published PRG data for each CAM Metal, based on a fairly extensive literature search, including University of California Publication (Ref. 15, March 15, 1996) and USEPA (Ref. 6, October 2004) data bases. A brief discussion of this tabulated data is in order and is presented below:

The reported maximum concentration of Arsenic (As) for on-site soils of 2.4 mg/Kg (with an average of 11 on-site samples being 1.25 mg/Kg.), is somewhat below the background concentration of 3.5 mg/Kg for California Soils. According to SECOR, detected

concentrations of As are very low and appear to be consistent with naturally occuring background concentrations commonly found in native soils. Consequently, no further assessment was recommended by SECOR. CORNERSTONE sample indicated ND. Risk was, however, calculated for As using EPA Region 9 methodology for both maximum detected concentrations of 2.4 mg/Kg and Upper Confidence Limit of 1.46 mg/Kg Miniscule incremental risks were found.

Table - 6

Comparison Summary of Metals Concentrations (mg/Kg)

Metals	Maximum Detected Concentration	Background Concentration (Ref. 15)	Published PRG for Residential Soils (Ref. 6)
Antimony (Sb)	ND	0.6	31 (nc)
Arsenic (As)	2.4	3.5	0.062
Barium (Ba)	45.4	509	5400 (nc)
Beryllium (Be)	ND	1.28	150 (nc)
Cadmium (Cd)	0.94	0.36	37 (nc)
Chromium (Cr)	23	122	210
Cobalt (Co)	4.73	14.9	900
Copper (Cu)	200	28.7	3,100 (nc)
Lead (Pb)	33	23.9	150 (nc)
Mercury (Hg)	0.037	0.26	23 (nc)
Molybdenum (Mo)	ND	1.3	390 (nc)
Nickel (Ni)	9.5	57	1,600 (nc)
Selenium (Se)	ND	0.058	390 (nc)
Silver (Ag)	ND	0.80	390 (nc)
Thallium (Tl)	ND	0.56	5.2 (nc)
Vanadium (V)	28.8	112	78 (nc)
Zinc (Zn)	74.0	149	23,000 (nc)

The reported maximum concentration of Cadmium (Cd) of 0.94 mg/Kg, although slightly above the background concentration of 0.36 mg/Kg for California Soils, is well below its published PRG (37 mg/Kg) for residential soils; being noncarcinogenic, it will produce insignificant adverse effect at the minute concentration encountered on-site.

The reported maximum concentration of Copper (Cu) of 200 mg/Kg, although above the background concentration of 28.7 mg/Kg for California Soils, is well within its published PRG (3,100 mg/Kg) value. Thus being noncarcinogenic, it will produce insignificant adverse effect at the relatively minutes concentration range encountered on-site.

The reported maximum concentration of Lead (Pb) for onsite soils is 33 mg/Kg. It should be noted that Lead (Pb) may not be addressed by comparison to background concentration. This is not a problem for the subject site since maximum on-site concentration of Pb (33 mg/Kg) is substantially below its published PRG (150 mg/Kg) for residential soils in California.

None of the other metals were reported in concentrations greater than their corresponding background concentrations and published PRG values for California residential soils. Consequently, no risk assessments need be computed for metals for the subject site.

SECTION - 3 GEOLOGICAL, SOILS & HYDROGEOLOGICAL CHARACTERISTICS
(Primary Source of this Information: Reference 7)

3.1 Physiographic Features

Physiographically, the project site is located in the El Segundo Sand Hills area which extends from Ballona Gap South to Torrance and the Palos Verdes Hills, and approximately two (2) to four (4) miles inland from the ocean. The sand hills consist of a narrow strip of active or recent dunes along the coast, and older stabilized sand dunes inland. The active dunes are upto 0.5 mile wide, with a maximum elevation of 185 feet above mean sea level. These active dunes seem to have undergone at least two stages of development, as shown by excavations for the Scatter-good Steam Plant of the Los Angeles Department of Water and Power near El Segundo.

The active dunes are underlain by older sand dunes of late Pleistocene age. In several areas of the El Segundo Sand Hills, fossils and sedimentary features in excavations indicate that these older sand dunes were originally beach deposits which have been altered in form by wind action and are deeply weathered; consequently, the surface now has closed depressions. The closed depressions are a result of a combination of action of removal and piling up of sand. One to three miles inland, the older sand dunes overlie silts and clays which apparently were deposited on the landward side of the beach sands and which now form a portion of the Torrance Plain. Ongoing weathering and stabilizing processes have nearly removed the gross features of dune topography in the older sand dune area. Thin remands of similar dune sands have also been observed in excavations for the Harbor Freeway on the Rosecrans Hills.

3.2 Stratigraphic Features

Stratigraphically, the wind-blown older sand dunes, referred to above, which occur in the West Coast Basin of the Coastal Plain of Los Angeles County, are significant in manner of deposition, lithology and topography; they are thus considered a separate, distinct unit. This unit has been described by Poland (1956, 1959) and in California DWR Publications (1952a, 1957c). It covers an area three to four miles wide and about 13 miles long extending along the Santa Monica Bay coast line south of Ballona Escarpment. Surface exposures and well logs indicate the dune sediments cover not only the Ocean Park Plain, but also a portion of

the West Coast Basin, including the subject site have been removed.

Cross-bedding, and fossils in exposures near the Hyperion Sewage Treatment Plant at El Segundo and elsewhere, indicate that these sands were originally beach deposits with associated coarse gravels (as substantiated during CORNERSTONE's investigations). Having been exposed to the winds by lowering of the sea level, these deposits have resulted in the formation of the present day Older Dune Sand. Deep weathering has oxidized the iron minerals which, through cementation and leaching processes, have partially filled the interstices between individual grains, thus reducing the permeability of the weathered Older Dune Sand to some extent.

3.3 Geologic and Hydrogeologic Features including Groundwater

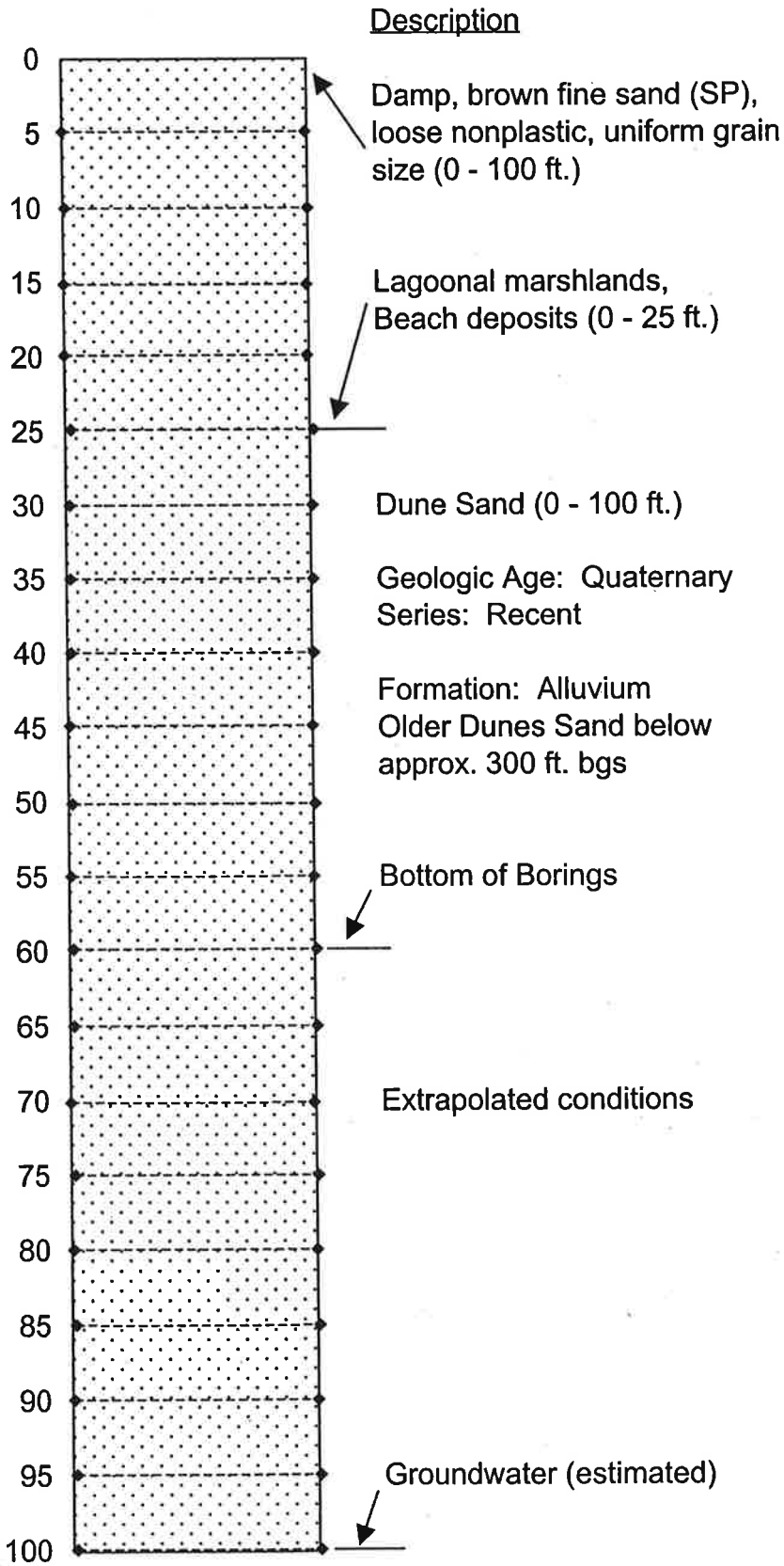
As indicated earlier, the Older Dune Sand (along with the Lakewood formation), which is comprised of upper Pleistocene deposits, occurs in a band from about three to four miles wide inland from Santa Monica Bay, and extends from the Ballona Escarpment in the north to the Torrance area in the south. It forms the major part of the El Segundo Sand Hills. Surface water percolates into the dunes from closed depressions after heavy rains. Ground water is, however, not extracted from this formation although some perched water bodies may occur.

Based on Generalized Lines of Equal Transmissibility of the Combined Aquifers developed in DWR Bulletin No. 104 (Reference 7), transmissibility of the El Segundo Sand Hills is estimated to be about 100,000 GPD/ft. CORNERSTONE and SECOR estimated depth to ground water is 100+ feet bgs (References 2 & 22) beneath the project site and its vicinity.

3.4 Recapitulation

Based on a thorough review of geological, soils and hydrogeological characteristics of the general area as well as knowledge of site-specific conditions, based on our field exploration, we have developed an idealized stratigraphic/lithologic diagrammatic representation of subsurface conditions at the subject site. This typical cross-sectional view indicates that the site is underlain by brown fine sand (SP) which is relatively loose, nonplastic and of uniform grain size distribution upto the depth of exploration (60 ft bgs) and perhaps upto a depth of 200 feet bgs. (see Exhibit 2). Thus the site is underlain by reasonably uniform and homogeneous conditions.

EXHIBIT 2 - IDEALIZED STRATIGRAPHIC/LITHOLOGIC DIAGRAMMATIC REPRESENTATION



SECTION - 4 RISK/HAZARD CHARACTERIZATION, DEVELOPMENT OF CONCEPTUAL SITE MODEL (CSM) AND COMPUTATIONAL METHODOLOGIES

The purpose herein is to provide definitive information on the input values and the mathematical model calculations for a quantitative assessment of the risk/hazard. The underlying reason for HRA is to evaluate if on-site abandonment of existing residual contaminated soil beneath the site could potentially pose any health risk, if left in place. In other words, we use the model in the same manner by developing a preliminary understanding of the site's potential risks to human health and the environment.

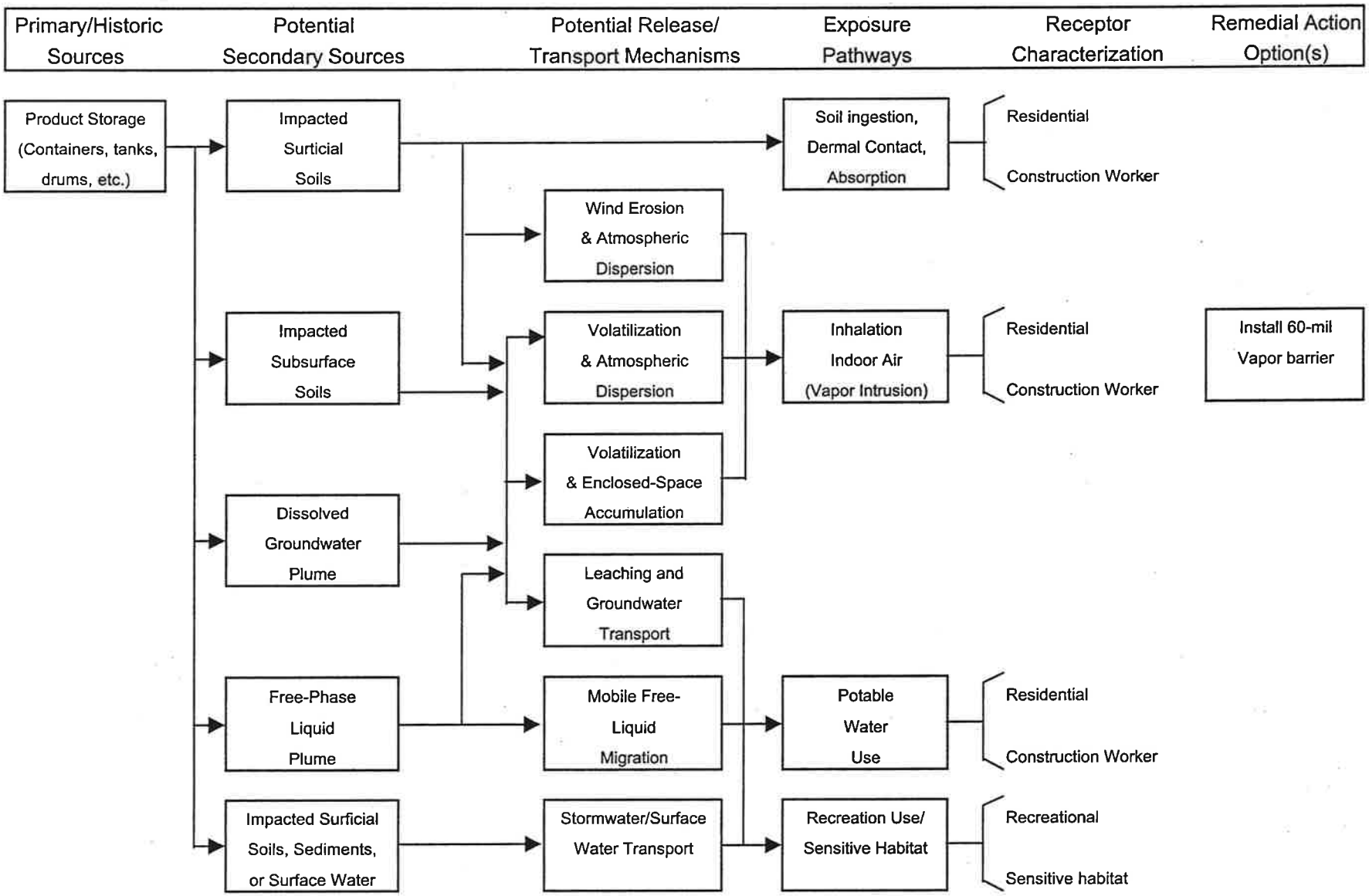
For each principal chemical compound including PCE and TCE, detected at the site, the screening evaluation calculates a risk and/or hazard for soil, and air pathways. The excess lifetime cancer risk for carcinogenic compounds termed "$Risk_i$" where "i" represents the medium of exposure (soil and air), is calculated only for those compounds considered by Cal/EPA or USEPA to pose a carcinogenic risk to human. This value simply represents the risk, or theoretical probability, of developing cancer from that chemical upon exposure to that medium.

The hazard quotient/index (termed "$Hazard_i$" where "i" is the medium of exposure), is calculated for all compounds, carcinogenic as well as noncarcinogenic. This value is a measure of the non-carcinogenic toxicity of a compound; it should not be construed as a probability. The hazard quotient/index is simply the ratio of the estimated dose from exposure to compounds in a medium, to a value which is believed not to produce adverse health effects.

Based on the results of environmental site assessment, the on-site soil contamination will likely not impact surface water or the water bearing zone, now or in the future. Consequently, the risk/hazard from water exposure need not be calculated for this site; calculation of the risk/hazard from soil and air will suffice.

In accordance with USEPA Guidelines, we have developed a simplified CSM which presents information about site conditions and potential impacts to various receptors. This is schematically presented in Exhibit 3. This schematic identifies the contamination sources and potential release mechanisms and links them to potential receptors through potential pathways and exposure routes. We believe the sampling and analytical testing data presented and executed by CORNERSTONE (References 1, 2, 3, 23, 24 & 25) are of sufficient quality and quantity, and meets regulatory

EXHIBIT 3 - CONCEPTUAL SITE MODEL DIAGRAM *



* Note: Modified from ASTM's Standard Guide for Risk - Based Corrective Action Applied at Petroleum Release Sites (Designation: E1739-95)

agency's (ESFD's) and its consultant, SCS Engineers' Protocols. This data will adequately evaluate the migration and exposure potential for onsite contaminants.

In order to render the model mathematically tractable (this will result in conservative estimates of risk/hazard), we will assume that maximum concentrations of all contaminants will occur at the surface, although maximum soil concentrations actually occur between 20 and 30 feet bgs. Alternatively, it may be hypothesized that a human being will be directly exposed to these maximum concentrations as if he/she is located at a depth between 20 - 30 feet bgs.

We have performed analyses and modeling/simulation corresponding to maximum detected and computed upper confidence limits (UCLs) for the following chemical constituents:

Chemical Constituent	Maximum Detected Concentration (μg/L)*	UCL (μg/L)*
	Soil Gas Data	
PCE	1,300	1,063
TCE	1,600	1,170
1, 1 - DCE	24	21
Cis 1, 2 - DCE	14	12
1, 1, 1 - TCA	18	12
	Soil Matrix Data	
PCE	110 μg/Kg	55.4 μg/Kg
TCE	52 μg/Kg	21.4 μg/Kg

* unless otherwise indicated

Equations used along with significant parameters and detailed calculations of risk and hazard are presented in Appendix A. It should be noted that the risk calculated for the soil pathway represents the summation of incidental soil ingestion exposure for a child as well as for an adult. However, hazard/index is calculated only for the six years of childhood. It stands to reason that if the hazard index is not exceeded for a child, it will not be exceeded for any other age. The volatization of compounds generated from contaminated soils is the only air pathway considered in our calculations. In other words, the risk and hazard for the air pathway are based on exposure to volatile emissions for VOCs. We wish to state that the VOC emission model does not consider exposure to soil-gas vapors generated from

contaminated shallow groundwater. This is, however, of no concern since shallow or perched groundwater was not encountered throughout the field exploration for the subject site.

4.1 Prediction of Pollutant Concentrations Based on a Box Model Concept:

As recommended by SCS, we have used the box model concept for predicting pollutant concentrations. The air mass over a region is treated as a box into which Pollutants are emitted and undergo chemical reactions. Transport into and out of the box by meteorological processes and dilutions are taken into account like airshed Gaussian Models, this model is based on the conservation of mass principle but does not include chemistry accurately. However, it is less complex, requires less computation time and does not require detailed emissions, meteorological and air quality data needed for airshed models. The resulting predictions are consequently, somewhat less accurate, especially in terms of their spatial and temporal resolution. Thus, based on the concept of a theoretically enclosed space (i.e., a box) over the impacted area, the model assumes emissions into the box, with their (partial) removal based on wind speed. The exposure point concentration (EPC) within the box is then calculated by the following equation:

$$B = [\, QA / (u)\,(h)\,(l)\,] \text{ X } CF$$

Where:	B	=	Box concentration, EPC ($\mu g/m^3$)
	Q	=	Emission flux (g/cm^2-sec)
	A	=	Emitting area of site (cm^2)
	u	=	Wind speed (cm/sec)
	h	=	Height of box (cm), receptor exposure point
	l	=	Lenght of box (cm), based on dimension of soil area
	CF	=	Conversion factor, 1012 (μg-cm^3 /g-m^3)

Detailed computational methodology and step-by-step calculations along with relevant data sources are presented in Appendix A.

4.2 SCREENING ANALYSIS FOR INHALATION OF VOCs and Their Breakdown Products Migrating from Soil Gas to Indoor Air (Subsurface Vapor Intrusion into Residential Buildings).

As indicated in Section 1, concerns have been raised about the potential for subsurface contamination in soil adversely impacting indoor air quality of proposed residential buildings at the subject site. Assessment of this potential indoor inhalation exposure pathway is based on a pragmatic understanding of the processes influencing vapor transport in the vades zone and migrating into buildings.

4.2.1 Modelling and Simulation Strategy

The strategy used to screen potential future risks associated with inhalation of vapors migrating into indoor air involves estimating indoor air concentrations for the proposed site and comparing these estimates with acceptable threshold incremental risks. The incremental risks for indoor air at the proposed residential site are calculated using a screening model in Microsoft Excel format, formulated and developed by Johnson and Etinger of USEPA. This screening model estimates flux of chemicals from soil gas into indoor airspace via a building foundation. The model estimates indoor incremental risks based on known chemical concentrations in soil gas and other known/estimated model parameters.

Johnson and Ettinger (1991) screening-level model was used for estimating the transport of contaminant vapors from a subsurface source into indoor air spaces. The model is a one-dimensional analytical solution to diffusive and convective transport of vapors formulated as an attenuation factor that internally relates the vapor concentration in the indoor space to the vapor concentration at the source. To facilitate use of the Johnson-Ettinger Model (JEM), EPA in 1997 developed spreadsheet versions of the model that calculate indoor air concentrations and associated health risks.

We reiterate that all calculations were performed using the latest DTSC version (January 21, 2005), as indicated in Section 1 and downloaded from the agency's website. This version of the soil gas screening model uses California-mandated lower toxicity criteria, particularly for PCE hazard calculation. Additionally, it employs a higher default soil temperature of 24°C instead of the earlier 10°C. It should also be noted that temperature sensitivity on risk estimate was tested by using soil temperatures of 15°C and 24°C (all other parameters remaining intact) but yielded a minuscule increase in computed risk estimate for 24°C. We also believe that the use of 24°C for soil temperature is somewhat conservative for the subject site.

Calculation of indoor air incremental risks is based on a mass balance approach, considering the quantity of fresh air entering the house and the contaminant flux entering through crack(s) in the foundation. (The indoor concentration in building air is simply equal to the contaminant flux divided by the volume of fresh air entering the building). This method does not consider the air entering from soil gas, and will (obviously !) result in a conservatively high estimate for those cases where the volume of soil gas entering is a significant percentage of the fresh air intake.

Pressure differentials are assumed to have a default zone of influence of 400 cm (~13 ft.) below the structure and 100 m^2 (~1076 ft^2) laterally, and assume soil's total porosity ranging between 0.375 and 0.43 to estimate the gas transport term. This hypothesized distance to zero pressure differential is subject to some uncertainty and would depend upon site-specific soil properties. The selected model parameters are conservative, however, allowing more gas flow in the model than is likely to take place in a real situation. Buildings are assumed to be constructed on granular backfill material with a permeability higher than that of the native material. Pressure differentials may stem from and are assumed to drive the flow from this backfill to the structure. These pressure differentials are caused by temperature differences between the building interior and soil gas as well as by wind effects. Complete mixing of air is assumed to take place within the building. The model also assumes that the building foundation is fractured (cracked up) and allows for migration of soil gas along structural joints.

4.2.2 JEM Input Parameters

Specific model input parameters are briefly discussed below.

Soil Gas Concentrations and Chemicals of Potential Concern (COPC)

As indicated earlier, maximum PCE concentration of 1,300 μg/L and maximum TCE concentration of 1,600 μg/L were encountered in subsurface soils. These maximum concentrations encountered in preliminary soil gas survey and somewhat lower concentrations encountered in soil borings were used in JEM for various simulations. As indicated earlier, we believe that these two chemical constituents, PCE and TCE are the primary chemicals of potential concern (COPC) for the subject site. Based on our literature search in response to CSC Engineers' request, we have ascertained that PCE and TCE yield the following breakdown products via anaerobic pathway mechanism(s):

* Cis 1, 2-Dichloroethene (DCE)
* vinyl chloride; and
* Ethylene

Source of this information: Toxicological Profiles for PCE and TCE - Reference 9
We have included DCE (and TCA) in our modeling simulations. No simulations were carried out for Ethylene and Vinyl Chloride and other sister breakdown products.

Building Dimensions:

Recapitulating:
Proposed Residential Condominium Complex
Assumed building dimensions are: 10m by 10m
Building Footprint area slab-on-Grade Scenario: $100m^2$

Average Lot Size:

Total Area , A_{total} = 69,305 ft^2
No. of Units = 27
$\therefore$ Avg. Lot Size = 69,305/27 = 2,566.85 ft^2
use 2,567 ft^2 or 238.60 m^2 or 2.386 E + 6 cm^2

Subsurface Foundation area:

Individual dimensions of each condominium units are:
L = 43' - 6" = 13.262 m
W = 22' - 6" = 6.858 m $\therefore$ A = 13.262 X 6.858 = 90.95 m^2
Patio = 10' X 8' = 80 ft^2 = 7.44 m^2
$\therefore$ Building Footprint Area, A_t = 90.95 + 7.44
= 98.39 m^2
Default value used in the model = 10 m X 10 m
= 100 m^2

The subsurface foundation area is a function of the building area and depth to the base of the foundation, which is fixed.
Area of enclosed space below grade, A_g = 1.8 E + 6 m^2
= 180 m^2

Subsurface Foundation area (slab-on-Grade Scenario): 106m^2 (mandatory, default value used in model)
Building Mixing Height (slab-on-Grade Scenario): 2.44m (~8ft)
The screening analysis evaluates a residential building without a basement.

Building Air Exchange Rate:

Typical outside air exchange rates for residences range from 0.1 to 1.5 air exchanges per hour, depending on the type of construction and the time of year. A conservative value of 0.25 air exchanges per hour is used in the model. It should be noted that his value is extremely conservative and would not be consistent with building code requirements for residential construction in Southern California.

Foundation Thickness:

Depth to base of foundation (slab-on-Grade Scenario) is commonly assumed to be 0.15m (~6 inches).
Building foundation slab Thickness: 0.1m (~4 inches).

Perimeter Crack Width:

The default value is 1mm.
Building Crack Ratio (slab-on-Grade Scenario) is assumed to be 0.00038 (Dimensionless) for 1st. tier screening assessment.

Soil-Related Parameters:

* Predominant Soil Type according to Unified Soil Classification System (USCS): Sand(S)
* Total Porosity Range, n = 0.375 - 0.430 for various simulations
* Average Soil Temperature, Ts (°C) = 10
* Vadose Zone Soil Intrinsic Permeability, kg (cm^2) = 9.92 x 10^{-8} (computed by JEM)

Additional Model Input Parameters:

Numerous other model input parameters are involved such as soil gas sampling depth (Ls), average vapor flow rate into building, Q_{soil} as well as standard (or specific) chemical properties of various contaminants.

It should be noted that since the advective flow zone beneath the building foundation is relatively limited in (vertical) extent, the soil type adjacent to the building foundation is of

significance. In most cases, including the Project Site, coarse-grained imported fill material is placed immediately below the foundation, and either coarse-grained fill, or disturbed, relatively loose fill material is placed adjacent to the foundation walls. Consequently, a conservative approach is to assume that the soil gas flow would be controlled by coarse-grained soil, and not to rely on the possible reduction in flow that would be caused by fine-grained soils near the foundation. For these reasons, a soil gas flow rate, Q_{soil} = 5 L/min is chosen as the input value. Default values of these and other model input parameters have been used in our simulations. These default parameters are shown on the 1st two pages of input description for each simulation run and are based on JEM recommended values (as documented in Tables G-3, G-4 and G-5, Ref. 8).

4.3 Summary of Quantitative Assessment Results for Soil and (Ambient) Air

As indicated earlier, detailed calculations of risk and hazard index for all relevant contaminants for both soil and air pathways are presented in Appendix A. Summary of quantitative assessment results is presented in Table 7 below:

Table - 7

Summary of Quantitative Assessment Results for Soil and (Ambient) Air

Contaminant	EXPOSURE MEDIUM				Remarks
	SOIL		AMBIENT AIR		
	Risk	Hazard	Risk	Hazard	
PCE					Calculations based on USEPA methodologies (See Appendix A for detailed calculations)
Max. Conc.	2.04 E - 07	2.82 E - 04	5.38 E - 09	1.10 E - 04	
UCL	1.03 E - 07	1.42 E - 04	4.57 E - 09	9.33 E - 05	
TCE					
Max. Conc.	2.33 E - 09	4.44 E - 03	1.66 E - 09	5.98 E - 06	
UCL	9.57 E - 10	1.83 E - 03	1.23 E - 09	4.44 E - 06	
Other Compounds	~ 0	~ 0	8.83 E - 10 7.02 E - 10	1.63 E - 06 1.36 E - 06	
Summations					
Max. Conc.	2.06 E - 07	4.72 E - 03	7.92 E - 09	1.18 E - 04	
UCL	1.04 E - 07	1.97 E - 03	6.50 E - 09	9.91 E - 05	

Cumulative Risk for both Soil and Air Pathways for All Contaminants:
(max. concentrations) = 2.06 E - 07 + 7.92 E - 09
= 2.14 E - 07 (< 1 in a million)

(UCL concentrations) = 1.04 E - 07 + 6.50 E - 09
= 1.11 E - 07 (< 1 in a million)

Cumulative Hazard Index for both Soil and Air Pathways for All Contaminants:
(max. concentrations) = 4.72 E - 03 + 7.92 E - 09 = 4.73 E - 03 < 1.0
(UCL concentrations) = 1.97 E - 03 + 6.50 E - 09 = 1.98 E - 03 < 1.0

The interpretation and ramifications of these computed values are discussed in Section 5

4.3.1 Modeling and Simulation Runs and Summary of Results

Following discussions with Cornerstone Technologies, Inc. (CORNERSTONE) and SCS Engineers regarding the intent, overall scope and level of detail of JEM efforts, we have performed **twelve (12) runs** for various contaminants and their breakdown products, using appropriate model input parameters as discussed above. Computerized Data Entry, Chemical Properties, Intermediate Calculations and Results Sheets for each run are presented in Appendix B. The results are summarized in Table 8 below:

Table - 8
Summary of JEM Simulation Runs & Results

Chemical Case Number	Chemical Compound	Soil Gas Concentration Cg (μg/L)	Incremental Risk from Vapor Intrusion to Indoor Air (carcinogen)	Hazard Quotient (Index) from Vapor Intrusion to Indoor Air (noncarcinogen)
127184	Tetrachloroethylene (PCE)	1,300* 1,090** (UCL)	4.2 E - 04 3.5 E - 04	4.8 E + 00 3.9 E + 00
79016	Trichloroethylene (TCE)	1,600* 1,190**	1.9 E - 04 1.4 E - 04	3.8 E - 01 2.7 E - 01
156592	Cis 1, 2-Dichloroethylene	14 11.8	N/A N/A	5.3 E - 02 4.5 E - 02
75014	1, 1 - Dichloroethylene (DCE)	24 21	N/A N/A	5.5 E - 02 4.8 E - 02
71556	1, 1, 1 - Trichloroethane (TCA)	18 11.8	N/A N/A	2.5 E - 03 1.6 E - 03

Note: * These are the maximum concentrations observed on the site.
** These are the computed 95% Upper Confidence Limits (UCLs).

Cumulative Incremental Risk from Vapor Intrusion to Indoor Air for maximum concentrations of all chemical compounds observed in Soil Gas
= 7.70 E - 04 > 1.0 E - 6

Cumulative Incremental Risk from Vapor Intrusion to Indoor Air for computed UCLs concentrations of all chemical compounds in Soil Gas
= 5.40 E - 04 > 1.0 E - 6

Cumulative Hazard Quotient (Index) from Vapor Intrusion to Indoor Air for Maximum Concentrations of all chemical compounds observed in Soil Gas = 5.29 E + 01 > 1.0 E + 00

Cumulative Hazard Quotient (Index) from Vapor Intrusion to Indoor Air for computed UCLs of all chemical compounds
= 4.26 E + 00 > 1.0 E + 00

4.4 Cumulative Risk and Hazard Values

Based on individual, incremental risk and hazard values summarized in Tables 7 & 8 for all relevant chemical compounds and various exposure media (soil, ambient air and vapor intrusion to indoor air combined), we have estimated the following cumulative values:

Cumulative Cancer Risk Corresponding to max. detected concentrations
= 2.14 E - 07 + 7.70 E - 04
= 7.71 E - 04 > 1.0 E - 06

Cumulative Cancer Risk Corresponding to UCL concentrations
= 1.11 E - 07 + 5.40 E - 04
= 5.41 E - 04 > 1.0 E - 06

Cumulative Hazard Quotient Corresponding to max. detected concentrations (noncarcinogenic)

= 4.73 E - 03 + 5.29 E + 01

= 5.29 E + 01 > 1.0

Cumulative Hazard Quotient Corresponding to UCL conc. (noncarcinogenic)

= 1.98 E - 03 + 4.26 E + 00

= 4.26 E + 00 > 1.0

SECTION - 5 DISCUSSION OF RESULTS, CONCLUSIONS & RECOMMENDATIONS

Based on our review of hydrogeological and soils conditions of the general area coupled with knowledge of field exploration data, the site is lithologically underlain by uniform and homogeneous conditions comprised of fine sand of uniform grain size distribution and depth to groundwater is in excess of 100 ft bgs. Due to considerable depth to groundwater coupled with the fact that the soil strata below 60 ft depth is anticipated to be relatively clean, there is little potential to contaminate underlying groundwater

5.1 Soil and Outdoor (Ambient) Air Pollutant Prediction Methodology

The methodology for human health screening evaluation presented in this Report is based on conservative, simplifying assumptions about the release and transport of contaminants in the subsurface soil as well as in air. Default exposure factors stipulate behavioral and physiological factors appropriate for humans in a residential setting (i.e. soil ingestion rates for a child). In general, a risk estimation greater than 10^{-6} (1 in a million) or a hazard index greater than 1 indicates the presence of contamination which may potentially pose a significant threat to human health.

Our calculations indicate that the risk of PCE contamination from both soil and air pathways, individually as well as cumulatively, is somewhat less than 10^{-6} for both max. and UCL concentrations. The computed hazard index for PCE contamination is also less than 1.0. The risk of TCE contamination from soil is less than 10^{-6}. The risk from air pathways for both PCE and TCE is substantially less than 10^{-6}. Our calculations also indicate that the cumulative risk for both soil and air pathways for all contaminants is of the order of 2.14 E - 07 which is somewhat less than 1 in a million. Also the toxicity, as indicated by computed value of hazard index, for all contaminants for both soil and air pathways (individually as well as cumulatively) is less than 1.0 for both max. and UCL concentrations. Cancer risk as well as HI for constituents, other than PCE & TCE individually and cumulatively, are indeed negligible or nearly zero.

5.2 JEM Methodology

Based on these modeling simulations, we can draw the following inferences:

- Model results appear to be somewhat more sensitive to PCE;
- Cumulative incremental risk from vapor intrusion corresponding to maximum

observed concentrations of 1,300 μg/L and 1,600 μg/L for PCE and TCE, respectively, is of the order of 7.70 E - 04 which is somewhat greater than 10^{-6}. No other constituents seem to make any sizeable contribution to incremental risk.

- Toxicity, as indicated by JEM results, for PCE and TCE (including all other constituents detected on-site), individually as well as cumulatively for maximum concentrations of these constituents modeled is considerably greater than one. Generally speaking, the results from various methodologies are comparable, though the results derived from JEM efforts are somewhat more restrictive and stringent.

5.3 Mitigation Measure(s)

As per tentative agreement reached at the July 23, 2004 meeting between the various parties, discussion of the vapor barrier in the HRA is limited to "a membrane will be installed". Available information indeed indicates that a 60-mil vapor barrier has been installed regardless of the results of the HRA.

SECTION - 6 DISCLAIMER

This report has been prepared exclusively for the use of the client, PACSAN Management Corporation and the City of El Segundo Fire Department. It shall not be transferred to, or be used by other parties without a written consent of **A. Amar International**. We assume no responsibility for the use of this report by others without the necessary modifications and/or guidance from us.

It should be noted that the modeling and simulation studies and results presented in this report pertain to a preliminary assessment and/or first-tier screening level analysis. Due to lack of availability of site-specific data and critical model parameters, model calibration and verification have neither been performed nor are feasible.

The services performed, including analysis and interpretation of data as well as conclusions and recommendations made, are in accordance with generally and currently accepted engineering and technical principles and practices in this area. We cannot guarantee the accuracy of data and calculations furnished by others. No warranties, expressed or implied, are made or intended in connection with this report, by furnishing this report, or by any oral or written statement.

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Appendix A

Detailed Calculations of Risk/Hazard for Soil and Air Pathways (Revised March - April 2006)

Detailed Calculations of Risk/Hazard for Soil & Air Pathways:

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1. Sample Calculations for 95% Upper Confidence Limit (UCL) for PCE (Soil Gas Data):
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   Soil Gas Data
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2. Proposed Residential Condominium Complex Data.
3. Calculations for Risk/Hazard for Soil.
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   - Estimate of Ambient Air Concentrations & Risks/HI at Receptor Locations of Interest Using Model Equations.
     Sample calculations for PCE:
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1. Sample calculations for 95% upper confidence Limits (UCLs)

(a) Soil Gas Data

PCE: Soil Gas Survey (SGS) Data collected on July 29, 2005 is used in these calculations. The data summary is presented in Table 3 (See Text).

Individual measurements (ug/L)

x_i	$\bar{x}$	$x_i - \bar{x}$	$(x_i - \bar{x})^2$
790	835	45	2,025
1,300 (max)	"	465	216,225
1,100	"	265	70,225
1,100	"	265	70,225
280	"	-555	308,025
780	"	-55	3,025
440	"	-395	156,025
890	"	55	3,025
$\Sigma = 6,680$			$\Sigma = 758,575$
$n = 8$			

Mean, $\bar{x} = \frac{1}{n}\sum_{i}^{8} x_i = 6,680/8 = 835$

Std. Dev., $S = \left[\sum_{i}^{n=8} (x_i - \bar{x})^2/(n-1)\right]^{1/2} = (758,575/7)^{1/2} = (108367)^{1/2} = 329.2$

$UCL = \bar{x} + 1.96 S/\sqrt{n} = 835 + 1.96(329.2)/\sqrt{8} = 1062.99$

use 1,063 ug/L

Calculation Results for all chemical compounds, based on the above sample computations are summarized in Table A.1 (See P. 2)

(b) Soil Matrix Data: Similar calculations were performed for the Soil Matrix Data; results are summarized on P. 3.

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Table A-1 - Summary of UCL computations fo chemical compounds for soil Gas Data

Chemical Compound	n	Mean, $\bar{x}$ $(=\frac{\sum_{1}^{n} x_i}{n})$	summation $\Sigma(x_i-\bar{x})^2$	Standard Deviation $S=\sqrt{\Sigma(x_i-\bar{x})^2/(n-1)}$	UCL $\bar{x}+1.96\,S/\sqrt{n}$
PCE	8	835	758,575	329.20	1,063
TCE	8	"	1,185,000	411.44	1170
1,1-DCE	8	"	151.9	4.66	21
cis-1,2-DCE	6	"	149.7	5.47	11.8
1,1,1-TCA	6	"	216.5	6.58	11.8

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TCE:

$n = 33$, $\sqrt{n} = \sqrt{33} = 5.745$

Mean, $\bar{x} = \sum_{1}^{33} x_i / n = 552.60 / 33 = 16.7\overline{45}$ or 16.75

$\Sigma (x_i - \bar{x})^2 = 5,872.52$

Stn. Dev., $S = \left[\Sigma (x_i - \bar{x})^2 / (n-1)\right]^{1/2}$

$= [5,872.52 / 33]^{1/2} = 13.55$

$\therefore$ UCL $= \bar{x} + 1.96(S/\sqrt{n})$

$= 16.75 + (1.96)(13.55)/5.745 = 21.37$

use 21.4 ug/kg

PCE:

$n = 35$, $\sqrt{n} = \sqrt{35} = 5.916$

$\bar{x} = 1552.80/35 = 44.37$

$\Sigma (x_i - \bar{x})^2 = 37,692.13$

$S = \sqrt{37,692.13/34} = 33.30$

UCL $= 44.37 + (1.96)(33.30)/5.916$

$= 55.4$ ug/kg

Note:
All other constituents were either very minute or ND, thus requiring no further analysis.

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2. Proposed Residential Condominium complex

Average Lot Size:

Total Area, A_{total} = 69,305 ft^2
No. of Units = 27
∴ Avg. Lot Size = 69,305/27 = 2,566.85 ft^2
use 2,567 ft^2 or 238.60 m^2
or 2.386E+6 cm^2

Subsurface Foundation Area:

Individual dimensions of each condominium unit are:

L = 43'-6" = 13.262 m
W = 22'-6" = 6.858 m
A = 13.262 × 6.858 = 90.95 m^2

Patio 10' × 8' = 80 ft^2 = 7.44 m^2

∴ Building footprint area, A_t = 90.95 + 7.44 = 98.39 m^2

Default value used in the model = 10 m × 10 m
= 100 m^2

The subsurface foundation area is a function of the building area and depth to the base of the foundation, which is fixed.

Area of enclosed space below grade, A_g = 1.8E+6 cm^2
= 180 m^2

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3. Calculations of Risk & Hazard for soil

PCE:

unless otherwise indicated, all governing equations are taken from Ref. 5. Values of all parameter are taken from Ref. 6 (october 2004). using usual notations,

$SF_o = 5.4E-01\ (mg/kg\text{-}day)^{-1}$

$RfD_o = 1.0E-02\ mg/kg\text{-}day$

$ABS = 0.10$ (dimensionless)

$C_s = 110\ ug/kg$
$= 1.10E-01\ mg/kg$ (ma

$C_s = 55.4\ ug/kg$
$= 5.54E-02\ mg/kg$ (UCL)

Substituting numerical values in eqn.

$$Risk_{soil}^{(max)} = (SF_o \times C_s \times (1.57\times10^{-6})) + (SF_o \times C_s \times (1.87\times10^{-5}) \times ABS)$$

$$= [(5.4\times10^{-1})(1.10\times10^{-1})(1.57\times10^{-6})] + [(5.4\times10^{-1})(1.10\times10^{-1})(1.87\times10^{-5})(0.10)]$$

$$= 9.3258\times10^{-8} + 1.1108\times10^{-7} = 2.0406\times10^{-7}$$ for max. Conc.

Similarly $Risk_{soil}^{(UCL)} = 1.0277\times10^{-7}$ for UCL (negligible)

$$Hazard_{soil}^{(max)} = ((C_s/RfD_o)\times(1.28\times10^{-5})) + ((C_s/RfD_o)\times(1.28\times10^{-4})\times ABS$$

$$= [(1.10\times10^{-1})/(1.0\times10^{-2})]\times(1.28\times10^{-5}) + [(1.10\times10^{-1})/(1.0\times10^{-2})]\times(1.28\times10^{-4})(0.10)$$

$$= 1.408\times10^{-4} + 1.408\times10^{-4} = 2.816\times10^{-4} < 1.0$$ (OK)

Similarly, $Hazard_{soil}^{(UCL)} = 1.418\times10^{-4} < 1.0$ O.K.

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TCE:

SF_o = 1.3E-01 $(mg/kg\text{-}day)^{-1}$ (CA modified value)

RfD_o = 3.0E-04 mg/kg-day

ABS = 0.10

C_S = 5.2E-02 mg/kg (max)

C_S = 2.14E-02 mg/kg (UCL)

Based on similar calculations

$Risk_{soil}$ (max) = 2.325×10^{-9} (negligible)

$Risk_{soil}$ (UCL) = 9.570×10^{-10} "

Similarly, $Hazard_{soil}$ (max) = 4.437×10^{-3} < 1.0 O.K.

$Hazard_{soil}$ (UCL) = 1.826×10^{-3} < 1.0 O.K.

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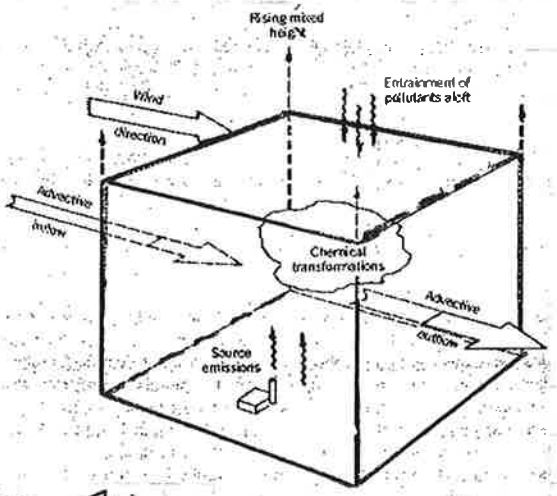
4. Prediction of Pollutant concentrations based on a Box model concept:

As recommended by SCS, we have used the box model concept for predicting pollutant concentrations. The air mass over a region is treated as a box into which pollutants are emitted and undergo chemical reactions, as depicted in the schematic below. Transport into and out of the box by



Schematic Diagram of a Box Model Concept

meteorological processes and dilutions are taken into accoun Like airshed Gaussian Models, this model is based on the conservation of mass principle but includes chemistry more accurately. However, it is less complex, requires less computation time and does not require detailed emission meteorological and air quality data needed for airshed models. The resulting predictions are, consequently, less accurate, especially in terms of spatial and temporal resolution.

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Thus, based on the concept of a theoretically enclosed space (i.e., a box) over the impacted area, the model assumes emissions into the box, with their (partial) removal based on wind speed. The exposure point concentration (EPC) within the box is then calculated by the following equation:

$$B = \left[QA/(u)(h)(l)\right] \times CF$$

Where:

B	=	Box concentration, EPC (ug/m3)
Q	=	Emission flux (g/cm2-sec).
A	=	Emitting area of site (cm2)
u	=	Wind speed (cm/sec)
h	=	Height of box (cm), receptor exposure point
l	=	Length of box (cm), based on dimension of soil area
CF	=	Conversion factor, 1012 (ug-cm3/g-m3)

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Gaseous Emissions from Subsurface Soils:

In order to compute air release potential of contaminants from subsurface soils, available contaminant-specific soil gas concentrations will be used. Soil gas measurements are available on a weight per volume (ug/L) basis.

Sample Calculations of Emissions Estimate for PCE

From the vapor-phase contaminant concentration, calculate an emission rate for PCE using the following equation

$$E_i = D_i\, c_i\, A(P_t^{4/3}) / d_{sc} \qquad \text{[Eqn. 4 of Ref. 19]}$$

where E_i = Emission rate of component i (PCE), g/s

D_i = Diffusion coefficient of component i in air, cm^2/s

c_i = Vapor concentration of component i measured in the pore spaces, g/cm^3

A = Exposed surface area, cm^2

P_t = Total soil porosity (dimensionless) - worst-case scenario: dry soil

d_{sc} = Effective depth of soil cover (from sample depth to soil surface)

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Numerical values of these parameters for PCE are:

$D_i = 0.072\ cm^2/s$ [Table 3, Ref. 5]

$[\max_{conc} C_i = 1,300\ ug/L = 1.3 \times 10^{3} \times 10^{-6} / 10^{3}\ g/cm^3$
$= 1.3 \times 10^{-6}\ g/cm^3$ [$1\ ug = 10^{-6}\ g$, $1\ L = 10^{3}\ cm^3$]

Similarly, UCL $C_i = 1.101\ g/cm^3$

$A = 2.386 \times 10^{6}\ cm^2$ [See P.]

$P_t = 1 - (B/\rho) = 1 - (1.5/2.65)$
$= 1 - 0.566$
$= 0.434$ (dimensionless)

for dry soil bulk dens. $B = 1.5\ g/cm^3$, Particle density, $\rho = 2.65\ g/cm^3$ Default values

$d_{sc} = 20\ ft = 20\ ft \times 30.48\ cm/ft$
$= 609.60\ cm$

Substituting these numerical values in the above eqn.

$E_i = (0.072\ cm^2/s)(1.3 \times 10^{-6}\ g/cm^3)(2.386 \times 10^{6}\ cm^2)\underbrace{(0.434)^{4/3}}_{0.32868} / (609.60\ cm)$

$= 1.204 \times 10^{-4}\ g/s$ for max. conc.

Similarly, $E_i = 1.0198 \times 10^{-4}\ g/s$ say, $1.02 \times 10^{-4}\ g/s$ for UCL

Calculation results for all contaminants based on the above sample calculations are summarized in Table A.2 (See P. 5)

Table A-2 Summary of Emissions Estimates for on-site contaminants

(1) Chemical Compound	(2) Concentration (ug/L) max. (UCL)	(3) C_i (g/cm^3) max. (UCL)	(4) D_i (cm^2/s)	(5) A (cm^2)	(6) P_t (unitless)	(7) dsc (cm)	(8) E_i (g/s)
PCE	1,300 (1,092)	1.3E-6 (1.092E-9)	0.072	2.386E+6	0.434	609.60	1.204E-4 (1.020E-4)
TCE	1,600 (1,187)	1.6E-6 (1.187E-6)	0.081	2.386E+6	0.434	914.40	1.112E-4 (8.248E-5)
1,1-DCE	24 (21)	2.4E-8 (2.1E-8)	0.091	2.386E+6	0.434	609.60	1.873E-6 (1.639E-6)
cis-1,2-DCE	14 (11.8)	1.4E-8 (1.18E-8)	0.079	2.386E+6	0.434	609.60	1.423E-6 (1.200E-6)
1,1,1-TCA	18 11.8	1.8E-8 (1.18E-8)	0.080	2.386E+6	0.434	548.64	2.058E-6 (1.349E-6)

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Estimate of Ambient Air Concentrations & Risk at Receptor Locations of Interest using Box Model Equation:

As discussed earlier, having computed the emissions of various on-site contaminants, the box model is instrumental in causing their partial removal, based on wind speed and appropriate dimensions of the enclosed space i.e the box.

Sample calculations for PCE: (with usual notation

Governing Eqn: $B = [Q_A/(4)(h)(l)] \times CF$

Here, $Q_A = E_i = 1.204 \times 10^{-4}$ g/s for max. PCE conc.

$u = 5.1$ m/s $= 510$ cm/s
[Average wind speed for Los Angeles, CA area (Ref. 21)]

h = Height of the box; receptor exposure point taken equal to ambient air mixing zone height or height of breathing zone
$= 90$ cm (~ 3 ft.)

l = Length of box (cm), based on dimensions of soil area; this is essentially equal to length of the average residential lot size
$= \sqrt{2,566.85 \text{ ft}^2} = 50.66 \text{ ft} \times 30.48 \frac{\text{cm}}{\text{ft}}$
$= 1,544.1$ cm
[evaluated in a Preceding Section]

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$CF = 1012\ [\mu g\text{-}cm^3 / g\text{-}m^3]$ conversion factor

Substituting these numerical values in the governing box equation, we get,

$$B = [1.204 \times 10^{-4}\ g/s / (510\ cm/s)(90\ cm)(1544.2\ cm)]\ (1012\ \mu g\text{-}cm^3/g\text{-}m^3)$$

$$= 1.72 \times 10^{-9}\ \mu g/m^3 \quad \text{for max. PCE conc.}$$

Similarly, using UCL conc. for PCE, we get,

$$B = 1.46 \times 10^{-9}\ \mu g/m^3$$

similar calculations were performed for other chemicals; results are summarized in Table A-3 [illegible].

(see next page)

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Table A-3 - Summary of Ambient Air concentrations based on Box Model concept

(1) Chemical compound	(2) E:(=QA) (g/s)	(3) u (cm/s)	(4) h (cm)	(5) l (cm)	(6) CF_3 ($\mu g \cdot cm / g \cdot m^3$)	(7) B ($\mu g/m^3$)
PCE	1.204E-4	510	90	1544	1012	1.72E-9
	1.020E-4	"	"	"	"	1.45E-9
TCE	1.112E-4	"	"	"	"	1.59E-9
	8.248E-5	"	"	"	"	1.18E-9
1,1-DCE	1.873E-6	"	"	"	"	2.68E-11
	1.639E-6	"	"	"	"	2.34E-11
cis-1,2-DCE	1.423E-6	"	"	"	"	2.03E-11
	1.200E-6	"	"	"	"	1.69E-11
1,1,1-TCA	2.058E-6	"	"	"	"	2.94E-11
	1.349E-6	"	"	"	"	1.93E-11

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Sample calculations for Associated cancer Risk Estimate for PCE:

Having computed the Emission Rates for various VOCs as well as their concentrations based on the box model concept, we can now calculate the cancer risk and hazard based on the following equations:

$$Risk_a = SF_i \times C_a \times 0.149$$
$$Hazard_a = (C_a / RfD_i) \times 0.639$$

} see Reference 5

where

SF_i = Inhalation cancer Slope factor, $(mg/kg\text{-}day)^{-1}$
= 2.1E-02 $1/mg/kg\text{-}d$ for PCE

RfD_i = The Inhalation Reference Dose, mg/kg-day
= 1.0E-2 mg/kg-d for PCE

$C_a = B$ = concentration in air, mg/m^3
= 1.72E-9 ug/m^3 for max. PCE concentration
= $1.72E\text{-}9 \times 10^{3} \times 10^{-6}$ mg/m^3 for max. PCE concen.
or 1.72×10^{-6} mg/m^3 for max. PCE concen.

Similarly, $C_a = 1.46 \times 10^{-6}$ mg/m^3 for UCL PCE concen.

Thus $Risk_a = (2.1 \times 10^{-2})(1.72 \times 10^{-6})(0.149) = 5.382 \times 10^{-9}$ for max PC conc
$= (2.1 \times 10^{-2})(1.46 \times 10^{-6})(0.149) = 4.568 \times 10^{-9}$ for UCL

And, $Hazard_a = (1.72 \times 10^{-6} / 1.0 \times 10^{-2})(0.639) = 1.099 \times 10^{-4}$ for max. PCE con
$= (1.46 \times 10^{-6} / 1.0 \times 10^{-2})(0.639) = 9.329 \times 10^{-5}$ for UCL

Similar calculations were performed for other chemicals; results are summarized in Table A.4 on the following page.

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Table A.4- Summary of cancer Risk & Hazard calculations for Ambient Air

(1) chemical compound	(2) C_a (= B) (mg/m^3)	(3) SFi (mg/Kg-d)$^{-1}$	(4) RfDi (mg/Kg-d)	(5) cancer Risk (unitless)	(6) Hazard Index H.I. (unitless)
PCE	1.72E-6 1.46E-6	2.1E-02	1.0E-02	5.38E-09 4.57E-09	1.10E-04 9.33E-05
TCE	1.59E-6 1.18E-6	7.0E-03	1.7E-01	1.66E-09 1.23E-09	5.98E-06 4.44E-06
1,1-DCE	2.68E-8 2.34E-8	9.1E-02	5.7E-02	3.63E-10 3.12E-10	3.00E-07 2.62E-07
cis-1,2-DCE	2.03E-8 1.69E-8	9.1E-02	1.0E-02	2.75E-10 2.29E-10	1.30E-06 1.08E-06
1,1,1-TCA	2.94E-8 1.93E-8	5.6E-02	6.3E-01	2.45E-10 1.61E-10	2.98E-08 1.96E-08
cumulative values:					
Max concentrations:				7.92E-09	1.18E-04
UCL concentrations:				6.50E-09	9.91E-05

Appendix B

Computer Printouts of JEM Modeling and Simulation Results
(Revised March - April 2006)

Computer Printouts of JEM Modeling and Simulation Results:

Contents:

1. PCE concentration, Cg = 1,300 μg/L = 1.30 E + 06 μg/m^3 (max)
2. PCE concentration, Cg = 1,063 μg/L = 1.063 E + 06*μg/m^3 (UCL)
3. PCE concentration, Cg = 1.94 E + 02* ppmv (max)
4. PCE concentration, Cg = 1.584 E + 02 ppmv (UCL)
5. TCE concentration, Cg = 1,600 μg/L = 1.60 E + 06μg/m^3 (max)
6. TCE concentration, Cg = 1,170 μg/L = 1.17 E + 06μg/m^3 (UCL)
7. Cis 1, 2 - Dichloroethene, Cg = 14 μg/L = 1.40 E + 04μg/m^3 (max)
8. Cis 1, 2 - Dichloroethene, Cg = 11.8 μg/L = 1.18 E + 04μg/m^3 (UCL)
9. DCE concentration, Cg = 24 μg/L = 2.40 E + 04μg/m^3 (max)
10. DCE concentration, Cg = 21 μg/L = 2.10 E + 04μg/m^3 (UCL)
11. TCA concentration, Cg = 18 μg/L = 1.80 E + 04μg/m^3 (max)
12. TCA concentration, Cg = 11.8 μg/L = 1.18 E + 04μg/m^3 (UCL)

Note: * Result Expressed in μg/L (ppb) X 0.149 = Result in ppmv

1,300 μg/L X 0.149 = 193.70 ppmv = 1.94 E + 02

1,063 μg/L X 0.149 = 158.40 ppmv = 1.584 E + 02

Also note that 1,300 μg/L = 1,300 X 10^3 μg/m^3 = 1.30 E + 06μg/m^3

Similar conversions for other chemical compounds.

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DTSC
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Soil Gas Concentration Data

ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Soil gas conc., C_g ($\mu g/m^3$)	OR	ENTER Soil gas conc., C_g (ppmv)	Chemical
127184	1.30E+06			Tetrachloroethylene

MORE

ENTER Depth below grade to bottom of enclosed space floor, L_F (15 or 200 cm)	ENTER Soil gas sampling depth below grade, L_s (cm)	ENTER Average soil temperature, T_S (°C)	ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)
15	400	24	S		

MORE

ENTER Vandose zone SCS soil type (Lookup Soil Parameters)	ENTER Vadose zone soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
S	1.63	0.385	0.197	5

MORE

ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens, AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)
70	30	30	350

END

CHEMICAL PROPERTIES SHEET

Diffusivity in air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Henry's law constant at reference temperature, H (atm-m^3/mol)	Henry's law constant reference temperature, T_R (°C)	Enthalpy of vaporization at the normal boiling point, $\Delta H_{v,b}$ (cal/mol)	Normal boiling point, T_B (°K)	Critical temperature, T_C (°K)	Unit risk factor, URF ($\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)	Molecular weight, MW (g/mol)
7.20E-02	8.20E-06	1.84E-02	25	8,288	394.40	620.20	5.9E-06	3.5E-02	165.83

END

INTERMEDIATE CALCULATIONS SHEET

Source-building separation, L_T (cm)	Vadose zone soil air-filled porosity, θ_a^V (cm^3/cm^3)	Vadose zone effective total fluid saturation, S_{te} (cm^3/cm^3)	Vadose zone soil intrinsic permeability, k_i (cm^2)	Vadose zone soil relative air permeability, k_{rg} (cm^2)	Vadose zone soil effective vapor permeability, k_v (cm^2)	Floor-wall seam perimeter, X_{crack} (cm)	Soil gas conc. ($\mu g/m^3$)	Bldg. ventilation rate, $Q_{building}$ (cm^3/s)
385	0.188	0.434	1.02E-07	0.466	4.73E-08	4,000	1.30E+06	3.39E+04

Area of enclosed space below grade, A_B (cm^2)	Crack-to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. soil temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. soil temperature, H_{TS} (atm-m^3/mol)	Henry's law constant at ave. soil temperature, H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Vadose zone effective diffusion coefficient, D^{eff}_V (cm^2/s)	Diffusion path length, L_d (cm)
1.00E+06	5.00E-03	15	9,410	1.74E-02	7.14E-01	1.80E-04	1.86E-03	385

Convection path length, L_p (cm)	Source vapor conc., C_{source} ($\mu g/m^3$)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm^3/s)	Crack effective diffusion coefficient, D^{crack} (cm^2/s)	Area of crack, A_{crack} (cm^2)	Exponent of equivalent foundation Peclet number, exp(Pe^f) (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ ($\mu g/m^3$)
15	1.30E+06	1.25	8.33E+01	1.86E-03	5.00E+03	8.36E+38	1.35E-04	1.75E+02

Unit risk factor, URF ($\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)
5.9E-06	3.5E-02

END

RESULTS SHEET

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
4.2E-04	4.8E+00

MESSAGE SUMMARY BELOW:

END

DATA ENTRY SHEET

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DTSC
Vapor Intrusion Guidance
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(last modified 1/21/05)

Soil Gas Concentration Data

ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Soil gas conc., C_g ($\mu g/m^3$)	OR	ENTER Soil gas conc., C_g (ppmv)	Chemical
127184	1.06E+06			Tetrachloroethylene

MORE

ENTER Depth below grade to bottom of enclosed space floor, L_F (15 or 200 cm)	ENTER Soil gas sampling depth below grade, L_s (cm)	ENTER Average soil temperature, T_S (°C)	ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)
15	400	24	S		

MORE

ENTER Vandose zone SCS soil type (Lookup Soil Parameters)	ENTER Vadose zone soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
S	1.63	0.385	0.197	5

MORE

ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens, AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)
70	30	30	350

END

CHEMICAL PROPERTIES SHEET

Diffusivity in air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Henry's law constant at reference temperature, H (atm-m^3/mol)	Henry's law constant reference temperature, T_R (°C)	Enthalpy of vaporization at the normal boiling point, $\Delta H_{v,b}$ (cal/mol)	Normal boiling point, T_B (°K)	Critical temperature, T_C (°K)	Unit risk factor, URF ($\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)	Molecular weight, MW (g/mol)
7.20E-02	8.20E-06	1.84E-02	25	8,288	394.40	620.20	5.9E-06	3.5E-02	165.83

END

INTERMEDIATE CALCULATIONS SHEET

Source-building separation, L_T (cm)	Vadose zone soil air-filled porosity, θ_a^V (cm^3/cm^3)	Vadose zone effective total fluid saturation, S_{te} (cm^3/cm^3)	Vadose zone soil intrinsic permeability, k_i (cm^2)	Vadose zone soil relative air permeability, k_{rg} (cm^2)	Vadose zone soil effective vapor permeability, k_v (cm^2)	Floor-wall seam perimeter, X_{crack} (cm)	Soil gas conc. ($\mu g/m^3$)	Bldg. ventilation rate, $Q_{building}$ (cm^3/s)
385	0.188	0.434	1.02E-07	0.466	4.73E-08	4,000	1.06E+06	3.39E+04

Area of enclosed space below grade, A_B (cm^2)	Crack-to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. soil temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. soil temperature, H_{TS} (atm-m^3/mol)	Henry's law constant at ave. soil temperature, H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Vadose zone effective diffusion coefficient, D^{eff}_v (cm^2/s)	Diffusion path length, L_d (cm)
1.00E+06	5.00E-03	15	9,410	1.74E-02	7.14E-01	1.80E-04	1.86E-03	385

Convection path length, L_p (cm)	Source vapor conc., C_{source} ($\mu g/m^3$)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm^3/s)	Crack effective diffusion coefficient, D^{crack} (cm^2/s)	Area of crack, A_{crack} (cm^2)	Exponent of equivalent foundation Peclet number, exp(Pe') (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ ($\mu g/m^3$)
15	1.06E+06	1.25	8.33E+01	1.86E-03	5.00E+03	8.36E+38	1.35E-04	1.43E+02

Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)
5.9E-06	3.5E-02

END

RESULTS SHEET

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
3.5E-04	3.9E+00

MESSAGE SUMMARY BELOW:

END

DATA ENTRY SHEET

SG-SCREEN
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Reset to Defaults

DTSC
Vapor Intrusion Guidance
Interim Final 12/04
(last modified 1/21/05)

Soil Gas Concentration Data

ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Soil gas conc., C_g ($\mu g/m^3$)	OR	ENTER Soil gas conc., C_g (ppmv)	Chemical
127184			1.94E+02	Tetrachloroethylene

MORE ↓

ENTER Depth below grade to bottom of enclosed space floor, L_F (15 or 200 cm)	ENTER Soil gas sampling depth below grade, L_s (cm)	ENTER Average soil temperature, T_S (°C)	ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)
15	400	24	S		

MORE ↓

ENTER Vandose zone SCS soil type (Lookup Soil Parameters)	ENTER Vadose zone soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
S	1.63	0.385	0.197	5

MORE ↓

ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens, AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)
70	30	30	350

END

INTERMEDIATE CALCULATIONS SHEET

Source-building separation, L_T (cm)	Vadose zone soil air-filled porosity, θ_a^V (cm^3/cm^3)	Vadose zone effective total fluid saturation, S_{te} (cm^3/cm^3)	Vadose zone soil intrinsic permeability, k_i (cm^2)	Vadose zone soil relative air permeability, k_{rg} (cm^2)	Vadose zone soil effective vapor permeability, k_v (cm^2)	Floor-wall seam perimeter, X_{crack} (cm)	Soil gas conc. ($\mu g/m^3$)	Bldg. ventilation rate, $Q_{building}$ (cm^3/s)
385	0.188	0.434	1.02E-07	0.466	4.73E-08	4,000	1.32E+06	3.39E+04

Area of enclosed space below grade, A_B (cm^2)	Crack-to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. soil temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. soil temperature, H_{TS} (atm-m^3/mol)	Henry's law constant at ave. soil temperature, H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Vadose zone effective diffusion coefficient, D^{eff}_V (cm^2/s)	Diffusion path length, L_d (cm)
1.00E+06	5.00E-03	15	9,410	1.74E-02	7.14E-01	1.80E-04	1.86E-03	385

Convection path length, L_p (cm)	Source vapor conc., C_{source} ($\mu g/m^3$)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm^3/s)	Crack effective diffusion coefficient, D^{crack} (cm^2/s)	Area of crack, A_{crack} (cm^2)	Exponent of equivalent foundation Peclet number, exp(Pe^f) (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ ($\mu g/m^3$)
15	1.32E+06	1.25	8.33E+01	1.86E-03	5.00E+03	8.36E+38	1.35E-04	1.78E+02

Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)
5.9E-06	3.5E-02

END

CHEMICAL PROPERTIES SHEET

Diffusivity in air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Henry's law constant at reference temperature, H ($atm\text{-}m^3/mol$)	Henry's law constant reference temperature, T_R (°C)	Enthalpy of vaporization at the normal boiling point, $\Delta H_{v,b}$ (cal/mol)	Normal boiling point, T_B (°K)	Critical temperature, T_C (°K)	Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)	Molecular weight, MW (g/mol)
7.20E-02	8.20E-06	1.84E-02	25	8,288	394.40	620.20	5.9E-06	3.5E-02	165.83

END

RESULTS SHEET

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
4.3E-04	4.9E+00

MESSAGE SUMMARY BELOW:

END

DATA ENTRY SHEET

SG-SCREEN
?A Version 2.0; 04/

Reset to Defaults

DTSC
Vapor Intrusion Guidance
Interim Final 12/04
(last modified 1/21/05)

ENTER Chemical CAS No. (numbers only, no dashes)	Soil Gas Concentration Data: ENTER Soil gas conc., C_g ($\mu g/m^3$)	OR	ENTER Soil gas conc., C_g (ppmv)	Chemical
127184			1.58E+02	Tetrachloroethylene

MORE ↓

ENTER Depth below grade to bottom of enclosed space floor, L_F (15 or 200 cm)	ENTER Soil gas sampling depth below grade, L_s (cm)	ENTER Average soil temperature, T_S (°C)	ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)
15	400	24	S		

MORE ↓

ENTER Vandose zone SCS soil type (Lookup Soil Parameters)	ENTER Vadose zone soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
S	1.63	0.385	0.197	5

MORE ↓

ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens, AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)
70	30	30	350

END

INTERMEDIATE CALCULATIONS SHEET

Source-building separation, L_T (cm)	Vadose zone soil air-filled porosity, θ_a^V (cm^3/cm^3)	Vadose zone effective total fluid saturation, S_{te} (cm^3/cm^3)	Vadose zone soil intrinsic permeability, k_i (cm^2)	Vadose zone soil relative air permeability, k_{rg} (cm^2)	Vadose zone soil effective vapor permeability, k_v (cm^2)	Floor-wall seam perimeter, X_{crack} (cm)	Soil gas conc. ($\mu g/m^3$)	Bldg. ventilation rate, $Q_{building}$ (cm^3/s)
385	0.188	0.434	1.02E-07	0.466	4.73E-08	4,000	1.08E+06	3.39E+04

Area of enclosed space below grade, A_B (cm^2)	Crack-to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. soil temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. soil temperature, H_{TS} (atm-m^3/mol)	Henry's law constant at ave. soil temperature, H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Vadose zone effective diffusion coefficient, D^{eff}_v (cm^2/s)	Diffusion path length, L_d (cm)
1.00E+06	5.00E-03	15	9,410	1.74E-02	7.14E-01	1.80E-04	1.86E-03	385

Convection path length, L_p (cm)	Source vapor conc., C_{source} ($\mu g/m^3$)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm^3/s)	Crack effective diffusion coefficient, D^{crack} (cm^2/s)	Area of crack, A_{crack} (cm^2)	Exponent of equivalent foundation Peclet number, exp(Pe') (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ ($\mu g/m^3$)
15	1.08E+06	1.25	8.33E+01	1.86E-03	5.00E+03	8.36E+38	1.35E-04	1.45E+02

Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)
5.9E-06	3.5E-02

END

CHEMICAL PROPERTIES SHEET

Diffusivity in air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Henry's law constant at reference temperature, H ($atm\text{-}m^3/mol$)	Henry's law constant reference temperature, T_R (°C)	Enthalpy of vaporization at the normal boiling point, $\Delta H_{v,b}$ (cal/mol)	Normal boiling point, T_B (°K)	Critical temperature, T_C (°K)	Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)	Molecular weight, MW (g/mol)
7.20E-02	8.20E-06	1.84E-02	25	8,288	394.40	620.20	5.9E-06	3.5E-02	165.83

END

RESULTS SHEET

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
3.5E-04	4.0E+00

MESSAGE SUMMARY BELOW:

END

DATA ENTRY SHEET

SG-SCREEN
PA Version 2.0; 04/

Reset to Defaults

DTSC
Vapor Intrusion Guidance
Interim Final 12/04
(last modified 1/21/05)

Soil Gas Concentration Data

ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Soil gas conc., C_g ($\mu g/m^3$)	OR	ENTER Soil gas conc., C_g (ppmv)	Chemical
79016	1.60E+06			Trichloroethylene

MORE

ENTER Depth below grade to bottom of enclosed space floor, L_F (15 or 200 cm)	ENTER Soil gas sampling depth below grade, L_s (cm)	ENTER Average soil temperature, T_S (°C)	ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)
15	400	24	S		

MORE

ENTER Vandose zone SCS soil type (Lookup Soil Parameters)	ENTER Vadose zone soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
S	1.63	0.385	0.197	5

MORE

ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens, AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)
70	30	30	350

END

INTERMEDIATE CALCULATIONS SHEET

Source-building separation, L_T (cm)	Vadose zone soil air-filled porosity, θ_a^V (cm^3/cm^3)	Vadose zone effective total fluid saturation, S_{te} (cm^3/cm^3)	Vadose zone soil intrinsic permeability, k_i (cm^2)	Vadose zone soil relative air permeability, k_{rg} (cm^2)	Vadose zone soil effective vapor permeability, k_v (cm^2)	Floor-wall seam perimeter, X_{crack} (cm)	Soil gas conc. ($\mu g/m^3$)	Bldg. ventilation rate, $Q_{building}$ (cm^3/s)
385	0.188	0.434	1.02E-07	0.466	4.73E-08	4,000	1.60E+06	3.39E+04

Area of enclosed space below grade, A_B (cm^2)	Crack-to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. soil temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. soil temperature, H_{TS} (atm-m^3/mol)	Henry's law constant at ave. soil temperature, H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Vadose zone effective diffusion coefficient, D^{eff}_V (cm^2/s)	Diffusion path length, L_d (cm)
1.00E+06	5.00E-03	15	8,382	9.80E-03	4.02E-01	1.80E-04	2.04E-03	385

Convection path length, L_p (cm)	Source vapor conc., C_{source} ($\mu g/m^3$)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm^3/s)	Crack effective diffusion coefficient, D^{crack} (cm^2/s)	Area of crack, A_{crack} (cm^2)	Exponent of equivalent foundation Peclet number, exp(Pe^f) (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ ($\mu g/m^3$)
15	1.60E+06	1.25	8.33E+01	2.04E-03	5.00E+03	2.94E+35	1.47E-04	2.35E+02

Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)
2.0E-06	6.0E-01

END

CHEMICAL PROPERTIES SHEET

Diffusivity in air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Henry's law constant at reference temperature, H ($atm\text{-}m^3/mol$)	Henry's law constant reference temperature, T_R (^oC)	Enthalpy of vaporization at the normal boiling point, $\Delta H_{v,b}$ (cal/mol)	Normal boiling point, T_B (^oK)	Critical temperature, T_C (^oK)	Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)	Molecular weight, MW (g/mol)
7.90E-02	9.10E-06	1.03E-02	25	7,505	360.36	544.20	2.0E-06	6.0E-01	131.39

END

RESULTS SHEET

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
1.9E-04	3.8E-01

MESSAGE SUMMARY BELOW:

END

DATA ENTRY SHEET

SG-SCREEN
PA Version 2.0; 04/

Reset to Defaults

DTSC
Vapor Intrusion Guidance
Interim Final 12/04
(last modified 1/21/05)

Soil Gas Concentration Data

ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Soil gas conc., C_g ($\mu g/m^3$)	OR	ENTER Soil gas conc., C_g (ppmv)	Chemical
79016	1.17E+06			Trichloroethylene

MORE ↓

ENTER Depth below grade to bottom of enclosed space floor, L_F (15 or 200 cm)	ENTER Soil gas sampling depth below grade, L_s (cm)	ENTER Average soil temperature, T_S (°C)	ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)
15	400	24	S		

MORE ↓

ENTER Vandose zone SCS soil type (Lookup Soil Parameters)	ENTER Vadose zone soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
S	1.63	0.385	0.197	5

MORE ↓

ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens, AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)
70	30	30	350

END

INTERMEDIATE CALCULATIONS SHEET

Source-building separation, L_T (cm)	Vadose zone soil air-filled porosity, θ_a^V (cm^3/cm^3)	Vadose zone effective total fluid saturation, S_{te} (cm^3/cm^3)	Vadose zone soil intrinsic permeability, k_i (cm^2)	Vadose zone soil relative air permeability, k_{rg} (cm^2)	Vadose zone soil effective vapor permeability, k_v (cm^2)	Floor-wall seam perimeter, X_{crack} (cm)	Soil gas conc. ($\mu g/m^3$)	Bldg. ventilation rate, $Q_{building}$ (cm^3/s)
385	0.188	0.434	1.02E-07	0.466	4.73E-08	4,000	1.17E+06	3.39E+04

Area of enclosed space below grade, A_B (cm^2)	Crack-to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. soil temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. soil temperature, H_{TS} (atm-m^3/mol)	Henry's law constant at ave. soil temperature, H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Vadose zone effective diffusion coefficient, D^{eff}_v (cm^2/s)	Diffusion path length, L_d (cm)
1.00E+06	5.00E-03	15	8,382	9.80E-03	4.02E-01	1.80E-04	2.04E-03	385

Convection path length, L_p (cm)	Source vapor conc., C_{source} ($\mu g/m^3$)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm^3/s)	Crack effective diffusion coefficient, D^{crack} (cm^2/s)	Area of crack, A_{crack} (cm^2)	Exponent of equivalent foundation Peclet number, $\exp(Pe^f)$ (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ ($\mu g/m^3$)
15	1.17E+06	1.25	8.33E+01	2.04E-03	5.00E+03	2.94E+35	1.47E-04	1.72E+02

Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)
2.0E-06	6.0E-01

END

CHEMICAL PROPERTIES SHEET

Diffusivity in air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Henry's law constant at reference temperature, H ($atm\text{-}m^3/mol$)	Henry's law constant reference temperature, T_R (°C)	Enthalpy of vaporization at the normal boiling point, $\Delta H_{v,b}$ (cal/mol)	Normal boiling point, T_B (°K)	Critical temperature, T_C (°K)	Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)	Molecular weight, MW (g/mol)
7.90E-02	9.10E-06	1.03E-02	25	7,505	360.36	544.20	2.0E-06	6.0E-01	131.39

END

RESULTS SHEET

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
1.4E-04	2.7E-01

MESSAGE SUMMARY BELOW:

END

DATA ENTRY SHEET

SG-SCREEN
PA Version 2.0; 04/

Reset to Defaults

DTSC
Vapor Intrusion Guidance
Interim Final 12/04
(last modified 1/21/05)

Soil Gas Concentration Data

ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Soil gas conc., C_g ($\mu g/m^3$)	OR	ENTER Soil gas conc., C_g (ppmv)	Chemical
156592	1.40E+04			cis-1,2-Dichloroethylene

MORE ↓

ENTER Depth below grade to bottom of enclosed space floor, L_F (15 or 200 cm)	ENTER Soil gas sampling depth below grade, L_s (cm)	ENTER Average soil temperature, T_S (°C)	ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)
15	400	24	S		

MORE ↓

ENTER Vandose zone SCS soil type (Lookup Soil Parameters)	ENTER Vadose zone soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
S	1.63	0.385	0.197	5

MORE ↓

ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens, AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)
70	30	30	350

END

INTERMEDIATE CALCULATIONS SHEET

Source-building separation, L_T (cm)	Vadose zone soil air-filled porosity, θ_a^V (cm^3/cm^3)	Vadose zone effective total fluid saturation, S_{te} (cm^3/cm^3)	Vadose zone soil intrinsic permeability, k_i (cm^2)	Vadose zone soil relative air permeability, k_{rg} (cm^2)	Vadose zone soil effective vapor permeability, k_v (cm^2)	Floor-wall seam perimeter, X_{crack} (cm)	Soil gas conc. ($\mu g/m^3$)	Bldg. ventilation rate, $Q_{building}$ (cm^3/s)
385	0.188	0.434	1.02E-07	0.466	4.73E-08	4,000	1.40E+04	3.39E+04

Area of enclosed space below grade, A_B (cm^2)	Crack-to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. soil temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. soil temperature, H_{TS} (atm-m^3/mol)	Henry's law constant at ave. soil temperature, H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Vadose zone effective diffusion coefficient, D^{eff}_V (cm^2/s)	Diffusion path length, L_d (cm)
1.00E+06	5.00E-03	15	7,592	3.90E-03	1.60E-01	1.80E-04	1.90E-03	385

Convection path length, L_p (cm)	Source vapor conc., C_{source} ($\mu g/m^3$)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm^3/s)	Crack effective diffusion coefficient, D^{crack} (cm^2/s)	Area of crack, A_{crack} (cm^2)	Exponent of equivalent foundation Peclet number, exp(Pe^f) (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ ($\mu g/m^3$)
15	1.40E+04	1.25	8.33E+01	1.90E-03	5.00E+03	1.10E+38	1.38E-04	1.93E+00

Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)
NA	3.5E-02

END

CHEMICAL PROPERTIES SHEET

Diffusivity in air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Henry's law constant at reference temperature, H ($atm\text{-}m^3/mol$)	Henry's law constant reference temperature, T_R (°C)	Enthalpy of vaporization at the normal boiling point, $\Delta H_{v,b}$ (cal/mol)	Normal boiling point, T_B (°K)	Critical temperature, T_C (°K)	Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)	Molecular weight, MW (g/mol)
7.36E-02	1.13E-05	4.07E-03	25	7,192	333.65	544.00	0.0E+00	3.5E-02	96.94

END

RESULTS SHEET

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
NA	5.3E-02

MESSAGE SUMMARY BELOW:

MESSAGE: Risk/HQ or risk-based soil concentration is based on a route-to-route extrapolation.

END

DATA ENTRY SHEET

SG-SCREEN
PA Version 2.0; 04/

Reset to Defaults

DTSC
Vapor Intrusion Guidance
Interim Final 12/04
(last modified 1/21/05)

Soil Gas Concentration Data

ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Soil gas conc., C_g ($\mu g/m^3$)	OR	ENTER Soil gas conc., C_g (ppmv)	Chemical
156592	1.18E+04			cis-1,2-Dichloroethylene

MORE

ENTER Depth below grade to bottom of enclosed space floor, L_F (15 or 200 cm)	ENTER Soil gas sampling depth below grade, L_s (cm)	ENTER Average soil temperature, T_S (°C)	ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)
15	400	24	S		

MORE

ENTER Vandose zone SCS soil type (Lookup Soil Parameters)	ENTER Vadose zone soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
S	1.63	0.385	0.197	5

MORE

ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens, AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)
70	30	30	350

END

INTERMEDIATE CALCULATIONS SHEET

Source-building separation, L_T (cm)	Vadose zone soil air-filled porosity, θ_a^V (cm^3/cm^3)	Vadose zone effective total fluid saturation, S_{te} (cm^3/cm^3)	Vadose zone soil intrinsic permeability, k_i (cm^2)	Vadose zone soil relative air permeability, k_{rg} (cm^2)	Vadose zone soil effective vapor permeability, k_v (cm^2)	Floor-wall seam perimeter, X_{crack} (cm)	Soil gas conc. ($\mu g/m^3$)	Bldg. ventilation rate, $Q_{building}$ (cm^3/s)
385	0.188	0.434	1.02E-07	0.466	4.73E-08	4,000	1.18E+04	3.39E+04

Area of enclosed space below grade, A_B (cm^2)	Crack-to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. soil temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. soil temperature, H_{TS} ($atm\text{-}m^3/mol$)	Henry's law constant at ave. soil temperature, H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Vadose zone effective diffusion coefficient, D^{eff}_v (cm^2/s)	Diffusion path length, L_d (cm)
1.00E+06	5.00E-03	15	7,592	3.90E-03	1.60E-01	1.80E-04	1.90E-03	385

Convection path length, L_p (cm)	Source vapor conc., C_{source} ($\mu g/m^3$)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm^3/s)	Crack effective diffusion coefficient, D^{crack} (cm^2/s)	Area of crack, A_{crack} (cm^2)	Exponent of equivalent foundation Peclet number, $\exp(Pe^f)$ (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ ($\mu g/m^3$)
15	1.18E+04	1.25	8.33E+01	1.90E-03	5.00E+03	1.10E+38	1.38E-04	1.62E+00

Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)
NA	3.5E-02

END

CHEMICAL PROPERTIES SHEET

Diffusivity in air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Henry's law constant at reference temperature, H ($atm\text{-}m^3/mol$)	Henry's law constant reference temperature, T_R (^oC)	Enthalpy of vaporization at the normal boiling point, $\Delta H_{v,b}$ (cal/mol)	Normal boiling point, T_B (^oK)	Critical temperature, T_C (^oK)	Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)	Molecular weight, MW (g/mol)
7.36E-02	1.13E-05	4.07E-03	25	7,192	333.65	544.00	0.0E+00	3.5E-02	96.94

END

RESULTS SHEET

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
NA	4.5E-02

MESSAGE SUMMARY BELOW:

MESSAGE: Risk/HQ or risk-based soil concentration is based on a route-to-route extrapolation.

END

DATA ENTRY SHEET

SG-SCREEN
PA Version 2.0; 04/

Reset to Defaults

DTSC
Vapor Intrusion Guidance
Interim Final 12/04
(last modified 1/21/05)

Soil Gas Concentration Data

ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Soil gas conc., C_g ($\mu g/m^3$)	OR	ENTER Soil gas conc., C_g (ppmv)	Chemical
75354	2.40E+04			1,1-Dichloroethylene

MORE ↓

ENTER Depth below grade to bottom of enclosed space floor, L_F (15 or 200 cm)	ENTER Soil gas sampling depth below grade, L_s (cm)	ENTER Average soil temperature, T_S (°C)	ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)
15	400	24	S		

MORE ↓

ENTER Vadose zone SCS soil type (Lookup Soil Parameters)	ENTER Vadose zone soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
S	1.63	0.385	0.197	5

MORE ↓

ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens, AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)
70	30	30	350

END

INTERMEDIATE CALCULATIONS SHEET

Source-building separation, L_T (cm)	Vadose zone soil air-filled porosity, θ_a^V (cm^3/cm^3)	Vadose zone effective total fluid saturation, S_{te} (cm^3/cm^3)	Vadose zone soil intrinsic permeability, k_i (cm^2)	Vadose zone soil relative air permeability, k_{rg} (cm^2)	Vadose zone soil effective vapor permeability, k_v (cm^2)	Floor-wall seam perimeter, X_{crack} (cm)	Soil gas conc. ($\mu g/m^3$)	Bldg. ventilation rate, $Q_{building}$ (cm^3/s)
385	0.188	0.434	1.02E-07	0.466	4.73E-08	4,000	2.40E+04	3.39E+04

Area of enclosed space below grade, A_B (cm^2)	Crack-to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. soil temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. soil temperature, H_{TS} (atm-m^3/mol)	Henry's law constant at ave. soil temperature, H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Vadose zone effective diffusion coefficient, D^{eff}_v (cm^2/s)	Diffusion path length, L_d (cm)
1.00E+06	5.00E-03	15	6,299	2.51E-02	1.03E+00	1.80E-04	2.32E-03	385

Convection path length, L_p (cm)	Source vapor conc., C_{source} ($\mu g/m^3$)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm^3/s)	Crack effective diffusion coefficient, D^{crack} (cm^2/s)	Area of crack, A_{crack} (cm^2)	Exponent of equivalent foundation Peclet number, $\exp(Pe^f)$ (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ ($\mu g/m^3$)
15	2.40E+04	1.25	8.33E+01	2.32E-03	5.00E+03	1.38E+31	1.66E-04	3.99E+00

Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)
NA	7.0E-02

END

CHEMICAL PROPERTIES SHEET

Diffusivity in air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Henry's law constant at reference temperature, H ($atm\text{-}m^3/mol$)	Henry's law constant reference temperature, T_R (°C)	Enthalpy of vaporization at the normal boiling point, $\Delta H_{v,b}$ (cal/mol)	Normal boiling point, T_B (°K)	Critical temperature, T_C (°K)	Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)	Molecular weight, MW (g/mol)
9.00E-02	1.04E-05	2.60E-02	25	6,247	304.75	576.05	0.0E+00	7.0E-02	96.94

END

RESULTS SHEET

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
NA	5.5E-02

MESSAGE SUMMARY BELOW:

END

DATA ENTRY SHEET

SG-SCREEN
?A Version 2.0; 04/

Reset to Defaults

DTSC
Vapor Intrusion Guidance
Interim Final 12/04
(last modified 1/21/05)

Soil Gas Concentration Data

ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Soil gas conc., C_g ($\mu g/m^3$)	OR	ENTER Soil gas conc., C_g (ppmv)	Chemical
75354	2.10E+04			1,1-Dichloroethylene

MORE ↓

ENTER Depth below grade to bottom of enclosed space floor, L_F (15 or 200 cm)	ENTER Soil gas sampling depth below grade, L_s (cm)	ENTER Average soil temperature, T_S (°C)	ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)
15	400	24	S		

MORE ↓

ENTER Vandose zone SCS soil type (Lookup Soil Parameters)	ENTER Vadose zone soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
S	1.63	0.385	0.197	5

MORE ↓

ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens, AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)
70	30	30	350

END

INTERMEDIATE CALCULATIONS SHEET

Source-building separation, L_T (cm)	Vadose zone soil air-filled porosity, θ_a^v (cm^3/cm^3)	Vadose zone effective total fluid saturation, S_{te} (cm^3/cm^3)	Vadose zone soil intrinsic permeability, k_i (cm^2)	Vadose zone soil relative air permeability, k_{rg} (cm^2)	Vadose zone soil effective vapor permeability, k_v (cm^2)	Floor-wall seam perimeter, X_{crack} (cm)	Soil gas conc. ($\mu g/m^3$)	Bldg. ventilation rate, $Q_{building}$ (cm^3/s)
385	0.188	0.434	1.02E-07	0.466	4.73E-08	4,000	2.10E+04	3.39E+04

Area of enclosed space below grade, A_B (cm^2)	Crack-to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. soil temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. soil temperature, H_{TS} ($atm\text{-}m^3/mol$)	Henry's law constant at ave. soil temperature, H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Vadose zone effective diffusion coefficient, D^{eff}_v (cm^2/s)	Diffusion path length, L_d (cm)
1.00E+06	5.00E-03	15	6,299	2.51E-02	1.03E+00	1.80E-04	2.32E-03	385

Convection path length, L_p (cm)	Source vapor conc., C_{source} ($\mu g/m^3$)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm^3/s)	Crack effective diffusion coefficient, D^{crack} (cm^2/s)	Area of crack, A_{crack} (cm^2)	Exponent of equivalent foundation Peclet number, $\exp(Pe^f)$ (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ ($\mu g/m^3$)
15	2.10E+04	1.25	8.33E+01	2.32E-03	5.00E+03	1.38E+31	1.66E-04	3.49E+00

Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)
NA	7.0E-02

END

CHEMICAL PROPERTIES SHEET

Diffusivity In air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Henry's law constant at reference temperature, H ($atm\text{-}m^3/mol$)	Henry's law constant reference temperature, T_R (°C)	Enthalpy of vaporization at the normal boiling point, $\Delta H_{v,b}$ (cal/mol)	Normal boiling point, T_B (°K)	Critical temperature, T_C (°K)	Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)	Molecular weight, MW (g/mol)
9.00E-02	1.04E-05	2.60E-02	25	6,247	304.75	576.05	0.0E+00	7.0E-02	96.94

END

RESULTS SHEET

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
NA	4.8E-02

MESSAGE SUMMARY BELOW:

END

DATA ENTRY SHEET

SG-SCREEN
PA Version 2.0; 04/

Reset to Defaults

DTSC
Vapor Intrusion Guidance
Interim Final 12/04
(last modified 1/21/05)

ENTER Chemical CAS No. (numbers only, no dashes)	Soil Gas Concentration Data: ENTER Soil gas conc., C_g ($\mu g/m^3$)	OR	ENTER Soil gas conc., C_g (ppmv)	Chemical
71556	1.80E+04			1,1,1-Trichloroethane

MORE ↓

ENTER Depth below grade to bottom of enclosed space floor, L_F (15 or 200 cm)	ENTER Soil gas sampling depth below grade, L_s (cm)	ENTER Average soil temperature, T_S (°C)	ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)
15	400	24	S		

MORE ↓

ENTER Vandose zone SCS soil type (Lookup Soil Parameters)	ENTER Vadose zone soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
S	1.63	0.385	0.197	5

MORE ↓

ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens, AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)
70	30	30	350

END

INTERMEDIATE CALCULATIONS SHEET

Source-building separation, L_T (cm)	Vadose zone soil air-filled porosity, θ_a^V (cm^3/cm^3)	Vadose zone effective total fluid saturation, S_{te} (cm^3/cm^3)	Vadose zone soil intrinsic permeability, k_i (cm^2)	Vadose zone soil relative air permeability, k_{rg} (cm^2)	Vadose zone soil effective vapor permeability, k_v (cm^2)	Floor-wall seam perimeter, X_{crack} (cm)	Soil gas conc. ($\mu g/m^3$)	Bldg. ventilation rate, $Q_{building}$ (cm^3/s)
385	0.188	0.434	1.02E-07	0.466	4.73E-08	4,000	1.80E+04	3.39E+04

Area of enclosed space below grade, A_B (cm^2)	Crack-to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. soil temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. soil temperature, H_{TS} ($atm-m^3/mol$)	Henry's law constant at ave. soil temperature, H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Vadose zone effective diffusion coefficient, D^{eff}_v (cm^2/s)	Diffusion path length, L_d (cm)
1.00E+06	5.00E-03	15	7,732	1.64E-02	6.73E-01	1.80E-04	2.01E-03	385

Convection path length, L_p (cm)	Source vapor conc., C_{source} ($\mu g/m^3$)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm^3/s)	Crack effective diffusion coefficient, D^{crack} (cm^2/s)	Area of crack, A_{crack} (cm^2)	Exponent of equivalent foundation Peclet number, $\exp(Pe^f)$ (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ ($\mu g/m^3$)
15	1.80E+04	1.25	8.33E+01	2.01E-03	5.00E+03	8.47E+35	1.45E-04	2.62E+00

Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)
NA	1.0E+00

END

RESULTS SHEET

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
NA	2.5E-03

MESSAGE SUMMARY BELOW:

END

CHEMICAL PROPERTIES SHEET

Diffusivity In air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Henry's law constant at reference temperature, H (atm-m^3/mol)	Henry's law constant reference temperature, T_R (°C)	Enthalpy of vaporization at the normal boiling point, $\Delta H_{v,b}$ (cal/mol)	Normal boiling point, T_B (°K)	Critical temperature, T_C (°K)	Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)	Molecular weight, MW (g/mol)
7.80E-02	8.80E-06	1.72E-02	25	7,136	347.24	545.00	0.0E+00	1.0E+00	133.40

END

DATA ENTRY SHEET

SG-SCREEN
PA Version 2.0; 04/

Reset to Defaults

DTSC
Vapor Intrusion Guidance
Interim Final 12/04
(last modified 1/21/05)

Soil Gas Concentration Data

ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Soil gas conc., C_g ($\mu g/m^3$)	OR	ENTER Soil gas conc., C_g (ppmv)	Chemical
71556	1.18E+04			1,1,1-Trichloroethane

MORE

ENTER Depth below grade to bottom of enclosed space floor, L_F (15 or 200 cm)	ENTER Soil gas sampling depth below grade, L_s (cm)	ENTER Average soil temperature, T_S (°C)	ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)
15	400	24	S		

MORE

ENTER Vandose zone SCS soil type (Lookup Soil Parameters)	ENTER Vadose zone soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
S	1.63	0.385	0.197	5

MORE

ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens, AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)
70	30	30	350

END

INTERMEDIATE CALCULATIONS SHEET

Source-building separation, L_T (cm)	Vadose zone soil air-filled porosity, θ_a^V (cm^3/cm^3)	Vadose zone effective total fluid saturation, S_{te} (cm^3/cm^3)	Vadose zone soil intrinsic permeability, k_i (cm^2)	Vadose zone soil relative air permeability, k_{rg} (cm^2)	Vadose zone soil effective vapor permeability, k_v (cm^2)	Floor-wall seam perimeter, X_{crack} (cm)	Soil gas conc. ($\mu g/m^3$)	Bldg. ventilation rate, $Q_{building}$ (cm^3/s)
385	0.188	0.434	1.02E-07	0.466	4.73E-08	4,000	1.18E+04	3.39E+04

Area of enclosed space below grade, A_B (cm^2)	Crack-to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. soil temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. soil temperature, H_{TS} (atm-m^3/mol)	Henry's law constant at ave. soil temperature, H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Vadose zone effective diffusion coefficient, D^{eff}_v (cm^2/s)	Diffusion path length, L_d (cm)
1.00E+06	5.00E-03	15	7,732	1.64E-02	6.73E-01	1.80E-04	2.01E-03	385

Convection path length, L_p (cm)	Source vapor conc., C_{source} ($\mu g/m^3$)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm^3/s)	Crack effective diffusion coefficient, D^{crack} (cm^2/s)	Area of crack, A_{crack} (cm^2)	Exponent of equivalent foundation Peclet number, exp(Pe^f) (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ ($\mu g/m^3$)
15	1.18E+04	1.25	8.33E+01	2.01E-03	5.00E+03	8.47E+35	1.45E-04	1.71E+00

Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)
NA	1.0E+00

END

CHEMICAL PROPERTIES SHEET

Diffusivity in air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Henry's law constant at reference temperature, H (atm-m^3/mol)	Henry's law constant reference temperature, T_R (°C)	Enthalpy of vaporization at the normal boiling point, $\Delta H_{v,b}$ (cal/mol)	Normal boiling point, T_B (°K)	Critical temperature, T_C (°K)	Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)	Molecular weight, MW (g/mol)
7.80E-02	8.80E-06	1.72E-02	25	7,136	347.24	545.00	0.0E+00	1.0E+00	133.40

END

RESULTS SHEET

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
NA	1.6E-03

MESSAGE SUMMARY BELOW:

END

COUNTY OF LOS ANGELES

FIRE DEPARTMENT

DARYL L. OSBY
FIRE CHIEF
FORESTER & FIRE WARDEN

Refer reply to
Health Hazardous Materials Division
5825 Rickenbacker Rd.
Commerce CA 90040-302

October 2, 2012

Arthur Heath, Ph.D.
Los Angeles Regional Water Quality Control Board
320 W. 4th Street, Suite 200
Los Angeles, CA 90013

Dear Dr. Heath:

VACANT PARCEL, 222 KANSAS STREET, EL SEGUNDO, CALIFORNIA 90245
(SMU FILE# 11-858/RO0001482)

This is to notify your agency of the regional groundwater contamination that underlies the above referenced site. The site is currently vacant and is approximately 4.7 acres in size. The site was previously occupied by International Rectifier Corporation until their onsite structures were demolished in 2008. Two abandoned oil production wells occupy the southern portion of the site. Methane gas is present in the subsurface soil beneath the site at detectable concentrations ranging from 20 ppmv to 11,000 ppmv. Methane barriers with a passive venting system are to be placed beneath any new buildings constructed at the site. The site is in the City El Segundo, within the "delisted" Chevron-El Segundo Area, which had its municipal and domestic (MUN) beneficial use designation removed by the LARWQCB Resolution No. 98-18 in the year 2000. The site is located two blocks west (on the ocean side) of the West Basin Barrier System, a line of wells through which reclaimed water is injected to counter saltwater intrusion. The Chevron refinery is one block south of the site. In addition to previously occupying the site, International Rectifier Corporation (IRC) currently occupies the adjacent properties north, south, and west of the site. IRC is a manufacturer of semiconductors, and they have been in the site area since about 1959. The companies Aerojet and Electroply previously occupied the adjacent property east of the site.

Numerous environmental assessments have been conducted at the site. The findings of recent assessments conducted with this Department's oversight were summarized in the following reports: "Soil Investigation Report," dated May 2012; "Groundwater Investigation Report," dated July 2012; and, "Vapor Intrusion Health Risk Assessment," dated August 6, 2012 (revised August 22, 2012), submitted by SCS Engineers (SCS). These reports indicate that low concentrations of chlorinated volatile organic compounds (VOCs), namely perchloroethylene (PCE) and trichloroethylene (TCE), are present in the onsite soil and soil vapor. The general trend of the concentrations of detectable VOCs in the soil vapor is to increase with depth. The concentrations of PCE in the soil matrix range from ND to 3 ppm. The concentrations of PCE in the shallow soil vapor (5 ft bgs) range from 0.18 µg/L to 4.3 µg/L. The concentrations of PCE in the deeper soil vapor (30 to 70 bgs) range from 19 µg/L to 480 µg/L. Groundwater testing indicates that groundwater beneath the site is impacted by VOCs, as summarized in the attached "Groundwater Summery" submitted by SCS. The depth to the water table is approximately 90 feet bgs.

The California Environmental Protection Agency, Office of Environmental Health Hazard Assessment (OEHHA) also reviewed the "Vapor Intrusion Health Risk Assessment." In their (attached) Memorandum, dated September 18, 2012, OEHHA concurred with the risk assessment findings, which are that the VOCs present in the soil vapor beneath the site do not pose unacceptable health risks to future commercial/industrial site occupants. In addition, a "Notice of Environmental Condition and Environmental Restriction" was recorded at the Los Angeles County Registrar that restricts the site to commercial/industrial use. This Department concurs with SCS that the known site contamination has been satisfactorily assessed and does not pose a significant human health risk for commercial/industrial site use. On October 2, 2012, this Department issued a "no further action" (closure) letter for commercial/industrial site use.

This letter is for your informational purposes only. This Department is not requesting any action or response from you unless you deem it necessary. If you have any questions, please feel free to contact Richard Clark at (323) 890-4027.

Very truly yours,

SHAHIN NOURISHAD, SUPERVISOR
SITE MITIGATION UNIT
HEALTH HAZARDOUS MATERIALS DIVISION

SN:rc

Attachment: OEHHA Memorandum, dated 09/17/2012
SCS Groundwater Summary, dated 08/29/2012

APPENDIX B SOIL BORING LOGS – ERM 2017 PHASE II SITE INVESTIGATION – BLOCK 1

ERM
1920 Main Street, Suite 300
Irvine, CA 92614
Phone: (949) 623-4700
Fax: (949) 623-4711

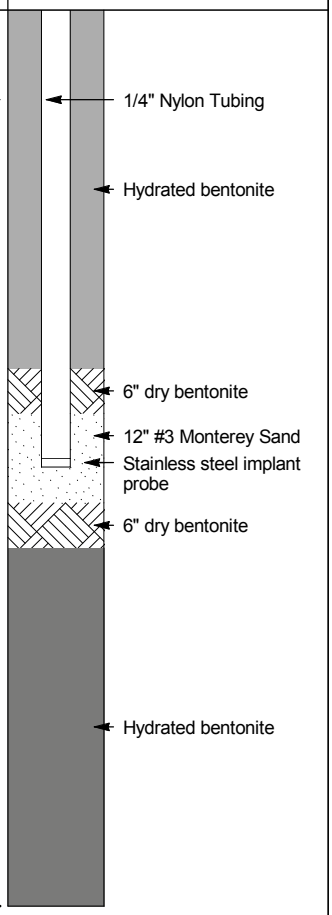
LOG OF MONITORING WELL: SB-1

Project Number: 0397848
Project Name: Infineon - Block 1
Location: El Segundo, CA
Contractor: Cascade Drilling
Drilling Method: Hand Auger and Direct Push
Logged By: M. Meeuwsen
Reviewed By:
Surface Elevation: feet MSL

Date Started: 3/14/2017
Date Completed: 3/14/2017
Total Depth: 10 feet
Borehole Diameter: 5 inches to 5.5 feet bgs; 2.2 inches to 10 feet bgs
Initial Water Level: feet bgs
Notes:

Depth (ft)	Sample Interval	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations
		1.4			Concrete.
					Hand Augered to 5 feet bgs.
		0.7			SAND (SP), very fine to fine grained, mostly fine, little silt, loose, brown, moist.
2		0.3			
		0.8			
4		0.7			
			SP		
6		1.0			Same as above, becomes wet.
8		1.4			
10					Total Depth - 10 feet bgs
12					
14					

WELL DIAGRAM



ERM
1920 Main Street, Suite 300
Irvine, CA 92614
Phone: (949) 623-4700
Fax: (949) 623-4711

LOG OF MONITORING WELL: SB-2

Project Number: 0397848
Project Name: Infineon - Block 1
Location: El Segundo, CA
Contractor: Cascade Drilling
Drilling Method: Hand Auger and Direct Push
Logged By: M. Meeuwsen
Reviewed By:
Surface Elevation: feet MSL

Date Started: 3/14/2017
Date Completed: 3/14/2017
Total Depth: 10 feet
Borehole Diameter: 5 inches to 5.5 feet bgs; 2.2 inches to 10 feet bgs
Initial Water Level: feet bgs
Notes:

Depth (ft)	Sample Interval	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations	WELL DIAGRAM
					Asphalt.	
		1.4			Hand Augered to 5 feet bgs.	
					SAND (SP), very fine to fine grained, mostly fine, little silt, loose, brown, moist.	
2		20.2				
		14.5				
		4.5				
4		3.4				
			SP			
6		0.5				
					Same as above, becomes wet.	
8		0.7				
10					Total Depth - 10 feet bgs	
12						
14						

ERM
1920 Main Street, Suite 300
Irvine, CA 92614
Phone: (949) 623-4700
Fax: (949) 623-4711

LOG OF MONITORING WELL: SB-3

Project Number: 0397848
Project Name: Infineon - Block 1
Location: El Segundo, CA
Contractor: Cascade Drilling
Drilling Method: Hand Auger and Direct Push
Logged By: M. Meeuwsen
Reviewed By:
Surface Elevation: feet MSL

Date Started: 3/14/2017
Date Completed: 3/14/2017
Total Depth: 10 feet
Borehole Diameter: 5 inches to 5.5 feet bgs; 2.2 inches to 10 feet bgs
Initial Water Level: feet bgs
Notes:

Depth (ft)	Sample Interval	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations	WELL DIAGRAM
					Asphalt.	
		0.3			Hand Augered to 5 feet bgs.	
					SAND (SP), very fine to fine grained, mostly fine, little silt, loose, brown, moist.	
2		0.8				
		0.9				
		1.3				
4						
		1.3				
			SP			
		0.6				
6						
		0.9				
					Same as above, becomes dry.	
		1.2				
8						
		1.3				
		1.2				
10					Total Depth - 10 feet bgs	
12						
14						

ERM
1920 Main Street, Suite 300
Irvine, CA 92614
Phone: (949) 623-4700
Fax: (949) 623-4711

LOG OF MONITORING WELL: SB-4

Project Number: 0397848
Project Name: Infineon - Block 1
Location: El Segundo, CA
Contractor: Cascade Drilling
Drilling Method: Hand Auger and Direct Push
Logged By: M. Meeuwsen
Reviewed By:
Surface Elevation: feet MSL

Date Started: 3/14/2017
Date Completed: 3/14/2017
Total Depth: 10 feet
Borehole Diameter: 5 inches to 5.5 feet bgs; 2.2 inches to 10 feet bgs
Initial Water Level: feet bgs
Notes:

Depth (ft)	Sample Interval	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations	WELL DIAGRAM
					Asphalt.	
		1.1			Hand Augered to 5 feet bgs.	
					SAND (SP), very fine to fine grained, mostly fine, little silt, loose, brown, moist.	
2		1.0				
		1.4				
		1.0				
4						
		1.2				
			SP			
		0.3				
6						
		0.4				
		0.4				
8						
		0.8				
					Same as above, becomes wet.	
		0.6				
10					Total Depth - 10 feet bgs	
12						
14						

ERM
1920 Main Street, Suite 300
Irvine, CA 92614
Phone: (949) 623-4700
Fax: (949) 623-4711

LOG OF MONITORING WELL: SB-5

Project Number: 0397848
Project Name: Infineon - Block 1
Location: El Segundo, CA
Contractor: Cascade Drilling
Drilling Method: Hand Auger and Direct Push
Logged By: M. Meeuwsen
Reviewed By:
Surface Elevation: feet MSL

Date Started: 3/14/2017
Date Completed: 3/14/2017
Total Depth: 10 feet
Borehole Diameter: 5 inches to 5.5 feet bgs; 2.2 inches to 10 feet bgs
Initial Water Level: feet bgs
Notes:

Depth (ft)	Sample Interval	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations	WELL DIAGRAM
					Asphalt.	
		1.2			Hand Augered to 5 feet bgs.	
					SAND (SP), very fine to fine grained, mostly fine, little silt, loose, brown, moist.	
2		1.7				
		1.9				
		1.6				
4						
		1.3				
			SP			
		1.4				
6						
		1.2				
		1.4				
8					Same as above, becomes wet.	
		1.0				
		1.2				
10					Total Depth - 10 feet bgs	
12						
14						

ERM
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Irvine, CA 92614
Phone: (949) 623-4700
Fax: (949) 623-4711

LOG OF MONITORING WELL: SB-6

Project Number: 0397848
Project Name: Infineon - Block 1
Location: El Segundo, CA
Contractor: Cascade Drilling
Drilling Method: Hand Auger and Direct Push
Logged By: M. Meeuwsen
Reviewed By:
Surface Elevation: feet MSL

Date Started: 3/14/2017
Date Completed: 3/14/2017
Total Depth: 10 feet
Borehole Diameter: 5 inches to 5.5 feet bgs; 2.2 inches to 10 feet bgs
Initial Water Level: feet bgs
Notes:

Depth (ft)	Sample Interval	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations	WELL DIAGRAM
					Asphalt.	
		1.1	GP		Hand Augered to 5 feet bgs. GRAVEL (GP), large gravel, poorly graded.	
		0.9			SAND (SP), very fine to fine grained, mostly fine, little silt, loose, brown, moist.	
2		1.0				
		0.8				
4		1.0				
		1.3	SP			
6		1.0				
		1.4				
8		1.1				
		1.0				
10					Total Depth - 10 feet bgs	
12						
14						

ERM
1920 Main Street, Suite 300
Irvine, CA 92614
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Fax: (949) 623-4711

LOG OF MONITORING WELL: SB-7

Project Number: 0397848
Project Name: Infineon - Block 1
Location: El Segundo, CA
Contractor: Cascade Drilling
Drilling Method: Hand Auger
Logged By: M. Meeuwsen
Reviewed By:
Surface Elevation: feet MSL

Date Started: 3/14/2017
Date Completed: 3/14/2017
Total Depth: 10 feet
Borehole Diameter: 5 inches
Initial Water Level: feet bgs
Notes:

Depth (ft)	Sample Interval	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations	WELL DIAGRAM
					Asphalt.	
		0.9			SAND (SP), very fine to fine grained, mostly fine, little silt, loose, brown, moist.	
		1.3				
2		1.3				
		0.9				
4		1.4				
			SP			
6		1.7				
		0.6				
8		0.3				
		1.1				
10					Total Depth - 10 feet bgs	
12						
14						

ERM
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Irvine, CA 92614
Phone: (949) 623-4700
Fax: (949) 623-4711

LOG OF MONITORING WELL: SB-9

Project Number: 0397848
Project Name: Infineon - Block 1
Location: El Segundo, CA
Contractor: Cascade Drilling
Drilling Method: Hand Auger and Direct Push
Logged By: M. Meeuwsen
Reviewed By:
Surface Elevation: feet MSL

Date Started: 3/14/2017
Date Completed: 3/14/2017
Total Depth: 10 feet
Borehole Diameter: 5 inches to 5.5 feet bgs; 2.2 inches to 10 feet bgs
Initial Water Level: feet bgs
Notes:

Depth (ft)	Sample Interval	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations	WELL DIAGRAM
					Asphalt.	
		1.2	SP		Hand Augered to 5 feet bgs. SAND with Gravel (SPG), very fine to fine grained sand, large gravel, angular, poorly graded, little silt, loose, light gray, moist.	
		0.5			SAND (SP), very fine to fine grained, mostly fine, little silt, loose, brown, moist.	
2		1.1				
		0.7				
4		0.9				
		1.0	SP			
6		1.4				
		1.6				
8		1.4				
		1.5				
10					Total Depth - 10 feet bgs	
12						
14						

ERM
1920 Main Street, Suite 300
Irvine, CA 92614
Phone: (949) 623-4700
Fax: (949) 623-4711

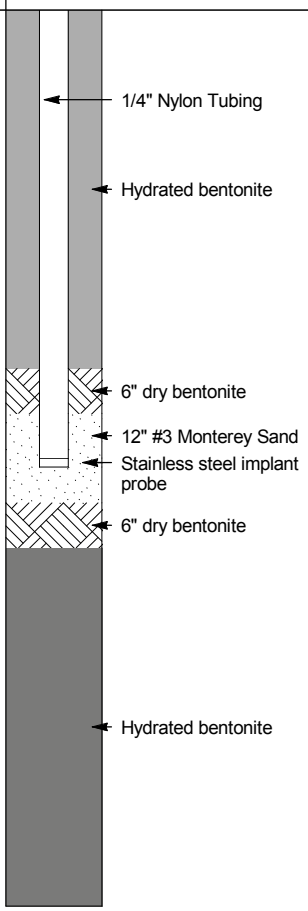
LOG OF MONITORING WELL: SB-10

Project Number: 0397848
Project Name: Infineon - Block 1
Location: El Segundo, CA
Contractor: Cascade Drilling
Drilling Method: Hand Auger and Direct Push
Logged By: M. Meeuwsen
Reviewed By:
Surface Elevation: feet MSL

Date Started: 3/14/2017
Date Completed: 3/14/2017
Total Depth: 10 feet
Borehole Diameter: 5 inches to 5.5 feet bgs; 2.2 inches to 10 feet bgs
Initial Water Level: feet bgs
Notes:

Depth (ft)	Sample Interval	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations
					Asphalt.
		2.6	GP		Hand Augered to 5 feet bgs. GRAVEL (GP), large gravel, poorly graded.
2		122.9	SP		SAND (SP), very fine to fine grained, mostly fine, little silt, loose, brown, moist.
		6.4			
		7.5			
4		3.3			
		0.5			
6		0.6			
		1.4			
8		0.8			
		1.4			
10					Total Depth - 10 feet bgs
12					
14					

WELL DIAGRAM



ERM
1920 Main Street, Suite 300
Irvine, CA 92614
Phone: (949) 623-4700
Fax: (949) 623-4711

LOG OF MONITORING WELL: SB-11

Project Number: 0397848
Project Name: Infineon - Block 1
Location: El Segundo, CA
Contractor: Cascade Drilling
Drilling Method: Hand Auger
Logged By: M. Meeuwsen
Reviewed By:
Surface Elevation: feet MSL

Date Started: 3/14/2017
Date Completed: 3/14/2017
Total Depth: 10 feet
Borehole Diameter: 5 inches
Initial Water Level: feet bgs
Notes:

Depth (ft)	Sample Interval	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations	WELL DIAGRAM
					Concrete.	
		1.2	SP		SAND (SP), very fine to fine grained, mostly fine, little silt, loose, brown, moist.	
		1.4				
2		1.5				
		1.6				
4		1.6				
		1.2				
6		1.3				
		1.7				
8		1.4				
		1.6				
10					Total Depth - 10 feet bgs	
12						
14						

ERM
1920 Main Street, Suite 300
Irvine, CA 92614
Phone: (949) 623-4700
Fax: (949) 623-4711

LOG OF MONITORING WELL: SB-12

Project Number: 0397848
Project Name: Infineon - Block 1
Location: El Segundo, CA
Contractor: Cascade Drilling
Drilling Method: Hand Auger
Logged By: M. Meeuwsen
Reviewed By:
Surface Elevation: feet MSL

Date Started: 3/14/2017
Date Completed: 3/14/2017
Total Depth: 10 feet
Borehole Diameter: 5 inches
Initial Water Level: feet bgs
Notes:

Depth (ft)	Sample Interval	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations	WELL DIAGRAM
					Concrete.	
		1.2			SAND (SP), very fine to fine grained, mostly fine, little silt, loose, brown, moist.	
		1.6				
2		1.6				
		1.8				
4		1.9				
			SP			
		1.3				
6		1.5				
		1.5				
8		1.6				
		1.1				
10					Total Depth - 10 feet bgs	
12						
14						

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Irvine, CA 92614
Phone: (949) 623-4700
Fax: (949) 623-4711

LOG OF MONITORING WELL: SB-13

Project Number: 0397848
Project Name: Infineon - Block 1
Location: El Segundo, CA
Contractor: Cascade Drilling
Drilling Method: Hand Auger
Logged By: M. Meeuwsen
Reviewed By:
Surface Elevation: feet MSL

Date Started: 3/14/2017
Date Completed: 3/14/2017
Total Depth: 10 feet
Borehole Diameter: 5 inches
Initial Water Level: feet bgs
Notes:

Depth (ft)	Sample Interval	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations	WELL DIAGRAM
					Concrete.	
		0.9	SP		SAND (SP), very fine to fine grained, mostly fine, little silt, loose, brown, moist.	
		1.3				
2		1.0				
		1.5				
4		1.5				
		1.1				
6		1.3				
		1.7				
8		1.9				
		1.5				
10					Total Depth - 10 feet bgs	
12						
14						

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1920 Main Street, Suite 300
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Phone: (949) 623-4700
Fax: (949) 623-4711

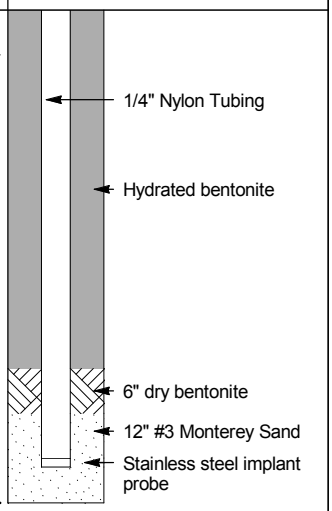
LOG OF MONITORING WELL: SB-14

Project Number: 0397848
Project Name: Infineon - Block 1
Location: El Segundo, CA
Contractor: Cascade Drilling
Drilling Method: Hand Auger
Logged By: M. Meeuwsen
Reviewed By:
Surface Elevation: feet MSL

Date Started: 3/14/2017
Date Completed: 3/14/2017
Total Depth: 5.5 feet
Borehole Diameter: 5 inches
Initial Water Level: feet bgs
Notes:

Depth (ft)	Sample Interval	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations
					Concrete.
		0.6			SAND (SP), very fine to fine grained, mostly fine, little silt, loose, brown, moist.
		1.0			
2		1.2	SP		
		0.8			Same as above, becomes light brown.
4		0.9			
					Total Depth - 5.5 feet bgs
6					
8					
10					
12					
14					

WELL DIAGRAM



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Phone: (949) 623-4700
Fax: (949) 623-4711

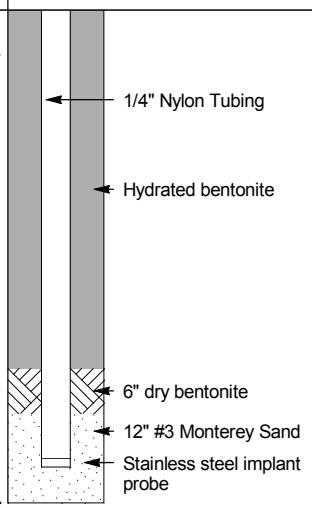
LOG OF MONITORING WELL: SB-15

Project Number: 0397848
Project Name: Infineon - Block 1
Location: El Segundo, CA
Contractor: Cascade Drilling
Drilling Method: Hand Auger
Logged By: M. Meeuwsen
Reviewed By:
Surface Elevation: feet MSL

Date Started: 3/14/2017
Date Completed: 3/14/2017
Total Depth: 5.5 feet
Borehole Diameter: 5 inches
Initial Water Level: feet bgs
Notes:

Depth (ft)	Sample Interval	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations
					Concrete.
		1.2	SP		SAND (SP), very fine to coarse grained, mostly fine, little silt, loose, brown, moist.
		1.1			Same as above, becomes very fine to fine grained.
2		1.0			
		1.3			
4		0.9			
					Total Depth - 5.5 feet bgs
6					
8					
10					
12					
14					

WELL DIAGRAM



ERM
1920 Main Street, Suite 300
Irvine, CA 92614
Phone: (949) 623-4700
Fax: (949) 623-4711

LOG OF MONITORING WELL: SB-16

Project Number: 0397848
Project Name: Infineon - Block 1
Location: El Segundo, CA
Contractor: Cascade Drilling
Drilling Method: Hand Auger
Logged By: M. Meeuwsen
Reviewed By:
Surface Elevation: feet MSL

Date Started: 3/14/2017
Date Completed: 3/14/2017
Total Depth: 5.5 feet
Borehole Diameter: 5 inches
Initial Water Level: feet bgs
Notes:

Depth (ft)	Sample Interval	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations	WELL DIAGRAM
					Concrete.	
		0.9			SAND (SP), very fine to fine grained, mostly fine, little silt, loose, brown, dry.	1/4" Nylon Tubing
2		1.0				Hydrated bentonite
		0.7	SP			
		1.2				
4		1.3				6" dry bentonite
						12" #3 Monterey Sand
						Stainless steel implant probe
					Total Depth - 5.5 feet bgs	
6						
8						
10						
12						
14						

ERM
1920 Main Street, Suite 300
Irvine, CA 92614
Phone: (949) 623-4700
Fax: (949) 623-4711

LOG OF MONITORING WELL: SB-17

Project Number: 0397848
Project Name: Infineon - Block 1
Location: El Segundo, CA
Contractor: Cascade Drilling
Drilling Method: Hand Auger
Logged By: M. Meeuwsen
Reviewed By:
Surface Elevation: feet MSL

Date Started: 3/14/2017
Date Completed: 3/14/2017
Total Depth: 5.5 feet
Borehole Diameter: 5 inches
Initial Water Level: feet bgs
Notes:

Depth (ft)	Sample Interval	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations	WELL DIAGRAM
					Concrete.	
		0.7	SP		SAND (SP), very fine to fine grained, mostly fine, little silt, loose, brown, moist.	1/4" Nylon Tubing
2		1.0				Hydrated bentonite
		0.9				
		1.0				
4		0.9				6" dry bentonite
						12" #3 Monterey Sand
						Stainless steel implant probe
					Total Depth - 5.5 feet bgs	
6						
8						
10						
12						
14						

ERM
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Irvine, CA 92614
Phone: (949) 623-4700
Fax: (949) 623-4711

LOG OF MONITORING WELL: SB-18

Project Number: 0397848
Project Name: Infineon - Block 1
Location: El Segundo, CA
Contractor: Cascade Drilling
Drilling Method: Hand Auger
Logged By: M. Meeuwsen
Reviewed By:
Surface Elevation: feet MSL

Date Started: 3/14/2017
Date Completed: 3/14/2017
Total Depth: 5.5 feet
Borehole Diameter: 5 inches
Initial Water Level: feet bgs
Notes:

Depth (ft)	Sample Interval	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations	WELL DIAGRAM
					Concrete.	
		0.8	SP		SAND (SP), very fine to fine grained, mostly fine, little silt, trace white plaster and red brick, loose, brown, moist.	1/4" Nylon Tubing
2		0.6				Hydrated bentonite
		0.8				
		1.0				
4		1.0				6" dry bentonite
						12" #3 Monterey Sand
						Stainless steel implant probe
					Total Depth - 5.5 feet bgs	
6						
8						
10						
12						
14						

ERM
1920 Main Street, Suite 300
Irvine, CA 92614
Phone: (949) 623-4700
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LOG OF MONITORING WELL: SB-19

Project Number: 0397848
Project Name: Infineon - Block 1
Location: El Segundo, CA
Contractor: Cascade Drilling
Drilling Method: Hand Auger
Logged By: M. Meeuwsen
Reviewed By:
Surface Elevation: feet MSL

Date Started: 3/14/2017
Date Completed: 3/14/2017
Total Depth: 10 feet
Borehole Diameter: 5 inches
Initial Water Level: feet bgs
Notes:

Depth (ft)	Sample Interval	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations	WELL DIAGRAM
					Concrete.	
		0.7			SAND (SP), very fine to fine grained, mostly fine, little silt, loose, brown, moist.	
		0.8				
2		0.8				
		0.9				
4		0.8				
			SP			
		0.9				
6		0.9				
		1.3				
8		1.5				
		1.8				
10					Total Depth - 10 feet bgs	
12						
14						

ERM
1920 Main Street, Suite 300
Irvine, CA 92614
Phone: (949) 623-4700
Fax: (949) 623-4711

LOG OF MONITORING WELL: SB-20

Project Number: 0397848
Project Name: Infineon - Block 1
Location: El Segundo, CA
Contractor: Cascade Drilling
Drilling Method: Hand Auger
Logged By: M. Meeuwsen
Reviewed By:
Surface Elevation: feet MSL

Date Started: 3/14/2017
Date Completed: 3/14/2017
Total Depth: 10 feet
Borehole Diameter: 5 inches
Initial Water Level: feet bgs
Notes:

Depth (ft)	Sample Interval	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations	WELL DIAGRAM
					Concrete.	
		0.5			SAND (SP), very fine to fine grained, mostly fine, little silt, loose, brown, moist.	
		0.6				
2		0.5				
		0.7				
4		0.7				
		0.6	SP			
6		0.9				
		1.4				
8		0.6				
		0.8				
10					Total Depth - 10 feet bgs	
12						
14						

ERM
1920 Main Street, Suite 300
Irvine, CA 92614
Phone: (949) 623-4700
Fax: (949) 623-4711

LOG OF MONITORING WELL: SB-21

Project Number: 0397848
Project Name: Infineon - Block 1
Location: El Segundo, CA
Contractor: Cascade Drilling
Drilling Method: Hand Auger
Logged By: M. Meeuwsen
Reviewed By:
Surface Elevation: feet MSL

Date Started: 3/14/2017
Date Completed: 3/14/2017
Total Depth: 5.5 feet
Borehole Diameter: 5 inches
Initial Water Level: feet bgs
Notes:

Depth (ft)	Sample Interval	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations	WELL DIAGRAM
					Concrete.	
		2.0	SP		SAND (SP), very fine to coarse grained, mostly fine, little silt, loose, dark brown, moist.	1/4" Nylon Tubing
		1.2			Same as above, becomes very fine to fine grained, brown.	Hydrated bentonite
2		1.5				
		0.7				
4		2.1				6" dry bentonite
						12" #3 Monterey Sand
						Stainless steel implant probe
					Total Depth - 5.5 feet bgs	
6						
8						
10						
12						
14						

APPENDIX C LABORATORY REPORTS ERM 2017 PHASE II SITE INVESTIGATION - BLOCK 1

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Work Order Narrative

Work Order: 17-03-1154 Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 03/15/17. They were assigned to Work Order 17-03-1154.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

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Sample Summary

Client:	ERM-WEST 1920 Main Street, Suite 300 Irvine, CA 92614-7279	Work Order:	17-03-1154
		Project Name:	INFINEON - El Segundo / 0397848
		PO Number:	
		Date/Time Received:	03/15/17 18:30
		Number of Containers:	51
Attn:	Marlene Dawes		

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
SB-20-0-1	17-03-1154-1	03/14/17 15:34	3	Solid
SB-11-0-1	17-03-1154-2	03/14/17 15:44	3	Solid
SB-12-0-1	17-03-1154-3	03/14/17 15:47	3	Solid
SB-13-0-1	17-03-1154-4	03/14/17 15:50	3	Solid
SB-10-1-2	17-03-1154-5	03/14/17 15:54	3	Solid
SB-1-0-1	17-03-1154-6	03/14/17 15:57	3	Solid
SB-7-0-1	17-03-1154-7	03/14/17 16:01	3	Solid
SB-5-0-1	17-03-1154-8	03/14/17 16:04	3	Solid
SB-6-0-1	17-03-1154-9	03/14/17 16:11	3	Solid
SB-2-1-2	17-03-1154-10	03/14/17 16:15	3	Solid
SB-3-0-1	17-03-1154-11	03/14/17 16:18	3	Solid
SB-9-0-1	17-03-1154-12	03/14/17 16:22	3	Solid
SB-4-0-1	17-03-1154-13	03/14/17 16:25	3	Solid
SB-19-0-1	17-03-1154-14	03/14/17 16:28	3	Solid
SBB2-1-0-1	17-03-1154-15	03/15/17 09:05	3	Solid
SBB2-4-0-1	17-03-1154-16	03/15/17 09:35	3	Solid
SBB2-5-3-4	17-03-1154-17	03/15/17 10:50	3	Solid

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Detections Summary

Client:	ERM-WEST	Work Order:	17-03-1154
	1920 Main Street, Suite 300	Project Name:	INFINEON - El Segundo / 0397848
	Irvine, CA 92614-7279	Received:	03/15/17
Attn:	Marlene Dawes		

Client SampleID / Analyte	Result	Qualifiers	RL	Units	Method	Extraction
SB-20-0-1 (17-03-1154-1)						
Barium	20.3		0.483	mg/kg	EPA 6010B	EPA 3050B
Chromium	9.83		0.242	mg/kg	EPA 6010B	EPA 3050B
Cobalt	2.45		0.242	mg/kg	EPA 6010B	EPA 3050B
Copper	2.38		0.483	mg/kg	EPA 6010B	EPA 3050B
Lead	2.73		0.483	mg/kg	EPA 6010B	EPA 3050B
Nickel	3.65		0.242	mg/kg	EPA 6010B	EPA 3050B
Vanadium	13.1		0.242	mg/kg	EPA 6010B	EPA 3050B
Zinc	12.4		0.966	mg/kg	EPA 6010B	EPA 3050B
SB-11-0-1 (17-03-1154-2)						
Barium	41.5		0.493	mg/kg	EPA 6010B	EPA 3050B
Chromium	9.31		0.246	mg/kg	EPA 6010B	EPA 3050B
Cobalt	3.27		0.246	mg/kg	EPA 6010B	EPA 3050B
Copper	5.58		0.493	mg/kg	EPA 6010B	EPA 3050B
Lead	7.39		0.493	mg/kg	EPA 6010B	EPA 3050B
Nickel	4.46		0.246	mg/kg	EPA 6010B	EPA 3050B
Vanadium	15.3		0.246	mg/kg	EPA 6010B	EPA 3050B
Zinc	21.0		0.985	mg/kg	EPA 6010B	EPA 3050B
SB-12-0-1 (17-03-1154-3)						
Arsenic	0.991		0.728	mg/kg	EPA 6010B	EPA 3050B
Barium	34.5		0.485	mg/kg	EPA 6010B	EPA 3050B
Chromium	10.2		0.243	mg/kg	EPA 6010B	EPA 3050B
Cobalt	3.34		0.243	mg/kg	EPA 6010B	EPA 3050B
Copper	5.43		0.485	mg/kg	EPA 6010B	EPA 3050B
Lead	18.1		0.485	mg/kg	EPA 6010B	EPA 3050B
Nickel	4.30		0.243	mg/kg	EPA 6010B	EPA 3050B
Selenium	1.02		0.728	mg/kg	EPA 6010B	EPA 3050B
Vanadium	16.3		0.243	mg/kg	EPA 6010B	EPA 3050B
Zinc	41.8		0.971	mg/kg	EPA 6010B	EPA 3050B

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Detections Summary

Client:	ERM-WEST	Work Order:	17-03-1154
	1920 Main Street, Suite 300	Project Name:	INFINEON - El Segundo / 0397848
	Irvine, CA 92614-7279	Received:	03/15/17
Attn:	Marlene Dawes		Page 2 of 7

Client SampleID / Analyte	Result	Qualifiers	RL	Units	Method	Extraction
SB-13-0-1 (17-03-1154-4)						
Arsenic	1.04		0.721	mg/kg	EPA 6010B	EPA 3050B
Barium	44.3		0.481	mg/kg	EPA 6010B	EPA 3050B
Chromium	9.55		0.240	mg/kg	EPA 6010B	EPA 3050B
Cobalt	3.52		0.240	mg/kg	EPA 6010B	EPA 3050B
Copper	3.70		0.481	mg/kg	EPA 6010B	EPA 3050B
Lead	2.08		0.481	mg/kg	EPA 6010B	EPA 3050B
Nickel	4.34		0.240	mg/kg	EPA 6010B	EPA 3050B
Selenium	0.854		0.721	mg/kg	EPA 6010B	EPA 3050B
Vanadium	14.6		0.240	mg/kg	EPA 6010B	EPA 3050B
Zinc	10.3		0.962	mg/kg	EPA 6010B	EPA 3050B
SB-10-1-2 (17-03-1154-5)						
Arsenic	1.31		0.735	mg/kg	EPA 6010B	EPA 3050B
Barium	40.3		0.490	mg/kg	EPA 6010B	EPA 3050B
Chromium	12.5		0.245	mg/kg	EPA 6010B	EPA 3050B
Cobalt	4.29		0.245	mg/kg	EPA 6010B	EPA 3050B
Copper	4.25		0.490	mg/kg	EPA 6010B	EPA 3050B
Lead	3.07		0.490	mg/kg	EPA 6010B	EPA 3050B
Nickel	5.41		0.245	mg/kg	EPA 6010B	EPA 3050B
Selenium	0.793		0.735	mg/kg	EPA 6010B	EPA 3050B
Vanadium	17.0		0.245	mg/kg	EPA 6010B	EPA 3050B
Zinc	13.4		0.980	mg/kg	EPA 6010B	EPA 3050B
SB-1-0-1 (17-03-1154-6)						
Arsenic	0.828		0.714	mg/kg	EPA 6010B	EPA 3050B
Barium	36.6		0.476	mg/kg	EPA 6010B	EPA 3050B
Chromium	8.73		0.238	mg/kg	EPA 6010B	EPA 3050B
Cobalt	3.17		0.238	mg/kg	EPA 6010B	EPA 3050B
Copper	3.39		0.476	mg/kg	EPA 6010B	EPA 3050B
Lead	2.15		0.476	mg/kg	EPA 6010B	EPA 3050B
Nickel	3.71		0.238	mg/kg	EPA 6010B	EPA 3050B
Selenium	0.778		0.714	mg/kg	EPA 6010B	EPA 3050B
Vanadium	13.0		0.238	mg/kg	EPA 6010B	EPA 3050B
Zinc	10.0		0.952	mg/kg	EPA 6010B	EPA 3050B

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Detections Summary

Client:	ERM-WEST	Work Order:	17-03-1154
	1920 Main Street, Suite 300	Project Name:	INFINEON - El Segundo / 0397848
	Irvine, CA 92614-7279	Received:	03/15/17
Attn:	Marlene Dawes		Page 3 of 7

Client SampleID / Analyte	Result	Qualifiers	RL	Units	Method	Extraction
SB-7-0-1 (17-03-1154-7)						
Arsenic	0.956		0.721	mg/kg	EPA 6010B	EPA 3050B
Barium	31.0		0.481	mg/kg	EPA 6010B	EPA 3050B
Cadmium	0.557		0.481	mg/kg	EPA 6010B	EPA 3050B
Chromium	8.42		0.240	mg/kg	EPA 6010B	EPA 3050B
Cobalt	11.1		0.240	mg/kg	EPA 6010B	EPA 3050B
Copper	9.63		0.481	mg/kg	EPA 6010B	EPA 3050B
Lead	17.4		0.481	mg/kg	EPA 6010B	EPA 3050B
Nickel	4.45		0.240	mg/kg	EPA 6010B	EPA 3050B
Selenium	0.751		0.721	mg/kg	EPA 6010B	EPA 3050B
Vanadium	14.2		0.240	mg/kg	EPA 6010B	EPA 3050B
Zinc	40.0		0.962	mg/kg	EPA 6010B	EPA 3050B
C29-C32	6.4		5.0	mg/kg	EPA 8015B (M)	EPA 3550B
C6-C44 Total	16		5.0	mg/kg	EPA 8015B (M)	EPA 3550B
SB-5-0-1 (17-03-1154-8)						
Arsenic	0.783		0.718	mg/kg	EPA 6010B	EPA 3050B
Barium	40.7		0.478	mg/kg	EPA 6010B	EPA 3050B
Chromium	10.1		0.239	mg/kg	EPA 6010B	EPA 3050B
Cobalt	4.83		0.239	mg/kg	EPA 6010B	EPA 3050B
Copper	5.29		0.478	mg/kg	EPA 6010B	EPA 3050B
Lead	2.28		0.478	mg/kg	EPA 6010B	EPA 3050B
Nickel	5.11		0.239	mg/kg	EPA 6010B	EPA 3050B
Vanadium	15.4		0.239	mg/kg	EPA 6010B	EPA 3050B
Zinc	12.8		0.957	mg/kg	EPA 6010B	EPA 3050B
SB-6-0-1 (17-03-1154-9)						
Barium	48.9		0.485	mg/kg	EPA 6010B	EPA 3050B
Cadmium	0.795		0.485	mg/kg	EPA 6010B	EPA 3050B
Chromium	8.34		0.243	mg/kg	EPA 6010B	EPA 3050B
Cobalt	14.5		0.243	mg/kg	EPA 6010B	EPA 3050B
Copper	13.2		0.485	mg/kg	EPA 6010B	EPA 3050B
Lead	31.7		0.485	mg/kg	EPA 6010B	EPA 3050B
Nickel	4.50		0.243	mg/kg	EPA 6010B	EPA 3050B
Selenium	1.01		0.728	mg/kg	EPA 6010B	EPA 3050B
Vanadium	17.9		0.243	mg/kg	EPA 6010B	EPA 3050B
Zinc	60.1		0.971	mg/kg	EPA 6010B	EPA 3050B
C6-C44 Total	12		5.0	mg/kg	EPA 8015B (M)	EPA 3550B

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Detections Summary

Client:	ERM-WEST	Work Order:	17-03-1154
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Analyte	Result	Qualifiers	RL	Units	Method	Extraction
SB-2-1-2 (17-03-1154-10)						
Arsenic	0.949		0.714	mg/kg	EPA 6010B	EPA 3050B
Barium	24.7		0.476	mg/kg	EPA 6010B	EPA 3050B
Chromium	6.82		0.238	mg/kg	EPA 6010B	EPA 3050B
Cobalt	2.27		0.238	mg/kg	EPA 6010B	EPA 3050B
Copper	2.68		0.476	mg/kg	EPA 6010B	EPA 3050B
Lead	3.53		0.476	mg/kg	EPA 6010B	EPA 3050B
Nickel	2.79		0.238	mg/kg	EPA 6010B	EPA 3050B
Vanadium	12.5		0.238	mg/kg	EPA 6010B	EPA 3050B
Zinc	9.45		0.952	mg/kg	EPA 6010B	EPA 3050B
SB-3-0-1 (17-03-1154-11)						
Arsenic	0.814		0.728	mg/kg	EPA 6010B	EPA 3050B
Barium	27.1		0.485	mg/kg	EPA 6010B	EPA 3050B
Cadmium	0.783		0.485	mg/kg	EPA 6010B	EPA 3050B
Chromium	10.2		0.243	mg/kg	EPA 6010B	EPA 3050B
Cobalt	6.25		0.243	mg/kg	EPA 6010B	EPA 3050B
Copper	10.1		0.485	mg/kg	EPA 6010B	EPA 3050B
Lead	32.1		0.485	mg/kg	EPA 6010B	EPA 3050B
Nickel	4.30		0.243	mg/kg	EPA 6010B	EPA 3050B
Selenium	0.947		0.728	mg/kg	EPA 6010B	EPA 3050B
Vanadium	13.9		0.243	mg/kg	EPA 6010B	EPA 3050B
Zinc	94.1		0.971	mg/kg	EPA 6010B	EPA 3050B
C25-C28	28		25	mg/kg	EPA 8015B (M)	EPA 3550B
C29-C32	44		25	mg/kg	EPA 8015B (M)	EPA 3550B
C33-C36	26		25	mg/kg	EPA 8015B (M)	EPA 3550B
C6-C44 Total	120		25	mg/kg	EPA 8015B (M)	EPA 3550B

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Detections Summary

Client:	ERM-WEST	Work Order:	17-03-1154
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	Irvine, CA 92614-7279	Received:	03/15/17
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Client SampleID / Analyte	Result	Qualifiers	RL	Units	Method	Extraction
SB-9-0-1 (17-03-1154-12)						
Arsenic	1.17		0.721	mg/kg	EPA 6010B	EPA 3050B
Barium	59.0		0.481	mg/kg	EPA 6010B	EPA 3050B
Cadmium	1.20		0.481	mg/kg	EPA 6010B	EPA 3050B
Chromium	10.4		0.240	mg/kg	EPA 6010B	EPA 3050B
Cobalt	9.33		0.240	mg/kg	EPA 6010B	EPA 3050B
Copper	12.0		0.481	mg/kg	EPA 6010B	EPA 3050B
Lead	65.0		0.481	mg/kg	EPA 6010B	EPA 3050B
Nickel	5.80		0.240	mg/kg	EPA 6010B	EPA 3050B
Selenium	1.12		0.721	mg/kg	EPA 6010B	EPA 3050B
Vanadium	22.9		0.240	mg/kg	EPA 6010B	EPA 3050B
Zinc	71.4		0.962	mg/kg	EPA 6010B	EPA 3050B
C25-C28	18		4.9	mg/kg	EPA 8015B (M)	EPA 3550B
C29-C32	30		4.9	mg/kg	EPA 8015B (M)	EPA 3550B
C33-C36	19		4.9	mg/kg	EPA 8015B (M)	EPA 3550B
C37-C40	12		4.9	mg/kg	EPA 8015B (M)	EPA 3550B
C6-C44 Total	88		4.9	mg/kg	EPA 8015B (M)	EPA 3550B
SB-4-0-1 (17-03-1154-13)						
Barium	26.1		0.493	mg/kg	EPA 6010B	EPA 3050B
Cadmium	0.672		0.493	mg/kg	EPA 6010B	EPA 3050B
Chromium	8.68		0.246	mg/kg	EPA 6010B	EPA 3050B
Cobalt	3.08		0.246	mg/kg	EPA 6010B	EPA 3050B
Copper	5.79		0.493	mg/kg	EPA 6010B	EPA 3050B
Lead	30.3		0.493	mg/kg	EPA 6010B	EPA 3050B
Nickel	4.16		0.246	mg/kg	EPA 6010B	EPA 3050B
Selenium	0.836		0.739	mg/kg	EPA 6010B	EPA 3050B
Vanadium	15.3		0.246	mg/kg	EPA 6010B	EPA 3050B
Zinc	62.0		0.985	mg/kg	EPA 6010B	EPA 3050B
C25-C28	13		5.0	mg/kg	EPA 8015B (M)	EPA 3550B
C29-C32	23		5.0	mg/kg	EPA 8015B (M)	EPA 3550B
C33-C36	16		5.0	mg/kg	EPA 8015B (M)	EPA 3550B
C37-C40	8.6		5.0	mg/kg	EPA 8015B (M)	EPA 3550B
C6-C44 Total	65		5.0	mg/kg	EPA 8015B (M)	EPA 3550B

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Detections Summary

Client:	ERM-WEST	Work Order:	17-03-1154
	1920 Main Street, Suite 300	Project Name:	INFINEON - El Segundo / 0397848
	Irvine, CA 92614-7279	Received:	03/15/17
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Client SampleID / Analyte	Result	Qualifiers	RL	Units	Method	Extraction
SB-19-0-1 (17-03-1154-14)						
Barium	15.8		0.488	mg/kg	EPA 6010B	EPA 3050B
Cadmium	5.84		0.488	mg/kg	EPA 6010B	EPA 3050B
Chromium	11.6		0.244	mg/kg	EPA 6010B	EPA 3050B
Cobalt	4.65		0.244	mg/kg	EPA 6010B	EPA 3050B
Copper	17.0		0.488	mg/kg	EPA 6010B	EPA 3050B
Lead	3.33		0.488	mg/kg	EPA 6010B	EPA 3050B
Nickel	8.94		0.244	mg/kg	EPA 6010B	EPA 3050B
Selenium	0.736		0.732	mg/kg	EPA 6010B	EPA 3050B
Vanadium	14.7		0.244	mg/kg	EPA 6010B	EPA 3050B
Zinc	237		0.976	mg/kg	EPA 6010B	EPA 3050B
SBB2-1-0-1 (17-03-1154-15)						
Arsenic	1.24		0.735	mg/kg	EPA 6010B	EPA 3050B
Barium	17.4		0.490	mg/kg	EPA 6010B	EPA 3050B
Chromium	15.2		0.245	mg/kg	EPA 6010B	EPA 3050B
Cobalt	3.54		0.245	mg/kg	EPA 6010B	EPA 3050B
Copper	2.73		0.490	mg/kg	EPA 6010B	EPA 3050B
Lead	1.55		0.490	mg/kg	EPA 6010B	EPA 3050B
Nickel	6.53		0.245	mg/kg	EPA 6010B	EPA 3050B
Vanadium	14.5		0.245	mg/kg	EPA 6010B	EPA 3050B
Zinc	8.29		0.980	mg/kg	EPA 6010B	EPA 3050B
SBB2-4-0-1 (17-03-1154-16)						
Arsenic	1.19		0.721	mg/kg	EPA 6010B	EPA 3050B
Barium	20.7		0.481	mg/kg	EPA 6010B	EPA 3050B
Chromium	13.9		0.240	mg/kg	EPA 6010B	EPA 3050B
Cobalt	2.99		0.240	mg/kg	EPA 6010B	EPA 3050B
Copper	4.21		0.481	mg/kg	EPA 6010B	EPA 3050B
Lead	1.52		0.481	mg/kg	EPA 6010B	EPA 3050B
Molybdenum	0.343		0.240	mg/kg	EPA 6010B	EPA 3050B
Nickel	6.45		0.240	mg/kg	EPA 6010B	EPA 3050B
Vanadium	15.0		0.240	mg/kg	EPA 6010B	EPA 3050B
Zinc	9.20		0.962	mg/kg	EPA 6010B	EPA 3050B

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Detections Summary

Client:	ERM-WEST	Work Order:	17-03-1154
	1920 Main Street, Suite 300	Project Name:	INFINEON - El Segundo / 0397848
	Irvine, CA 92614-7279	Received:	03/15/17
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Client SampleID

Analyte	Result	Qualifiers	RL	Units	Method	Extraction
SBB2-5-3-4 (17-03-1154-17)						
Arsenic	2.61		0.728	mg/kg	EPA 6010B	EPA 3050B
Barium	66.9		0.485	mg/kg	EPA 6010B	EPA 3050B
Cadmium	2.61		0.485	mg/kg	EPA 6010B	EPA 3050B
Chromium	17.8		0.243	mg/kg	EPA 6010B	EPA 3050B
Cobalt	5.93		0.243	mg/kg	EPA 6010B	EPA 3050B
Copper	17.9		0.485	mg/kg	EPA 6010B	EPA 3050B
Lead	65.5		0.485	mg/kg	EPA 6010B	EPA 3050B
Molybdenum	0.463		0.243	mg/kg	EPA 6010B	EPA 3050B
Nickel	8.84		0.243	mg/kg	EPA 6010B	EPA 3050B
Selenium	3.98		0.728	mg/kg	EPA 6010B	EPA 3050B
Vanadium	29.1		0.243	mg/kg	EPA 6010B	EPA 3050B
Zinc	66.3		0.971	mg/kg	EPA 6010B	EPA 3050B
C19-C20	15		5.1	mg/kg	EPA 8015B (M)	EPA 3550B
C21-C22	11		5.1	mg/kg	EPA 8015B (M)	EPA 3550B
C23-C24	14		5.1	mg/kg	EPA 8015B (M)	EPA 3550B
C25-C28	36		5.1	mg/kg	EPA 8015B (M)	EPA 3550B
C29-C32	52		5.1	mg/kg	EPA 8015B (M)	EPA 3550B
C33-C36	33		5.1	mg/kg	EPA 8015B (M)	EPA 3550B
C37-C40	16		5.1	mg/kg	EPA 8015B (M)	EPA 3550B
C6-C44 Total	180		5.1	mg/kg	EPA 8015B (M)	EPA 3550B
Tetrachloroethene	21		4.9	ug/kg	EPA 8260B	EPA 5030C

Subcontracted analyses, if any, are not included in this summary.

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Analytical Report

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)
		Units:	mg/kg
Project: INFINEON - El Segundo / 0397848			Page 1 of 18

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-20-0-1	**17-03-1154-1-B**	**03/14/17 15:34**	**Solid**	**GC 45**	**03/17/17**	**03/18/17 20:14**	**170317B17**

Comment(s): - The total concentration includes individual carbon range concentrations (estimated), if any, below the RL reported as ND.

Parameter	Result	RL	DF	Qualifiers
C6	ND	4.9	1.00	
C7	ND	4.9	1.00	
C8	ND	4.9	1.00	
C9-C10	ND	4.9	1.00	
C11-C12	ND	4.9	1.00	
C13-C14	ND	4.9	1.00	
C15-C16	ND	4.9	1.00	
C17-C18	ND	4.9	1.00	
C19-C20	ND	4.9	1.00	
C21-C22	ND	4.9	1.00	
C23-C24	ND	4.9	1.00	
C25-C28	ND	4.9	1.00	
C29-C32	ND	4.9	1.00	
C33-C36	ND	4.9	1.00	
C37-C40	ND	4.9	1.00	
C41-C44	ND	4.9	1.00	
C6-C44 Total	ND	4.9	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	97	61-145	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)
		Units:	mg/kg
Project: INFINEON - El Segundo / 0397848			Page 2 of 18

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-11-0-1	**17-03-1154-2-B**	**03/14/17 15:44**	**Solid**	**GC 45**	**03/17/17**	**03/18/17 20:35**	**170317B17**

Comment(s): - The total concentration includes individual carbon range concentrations (estimated), if any, below the RL reported as ND.

Parameter	Result	RL	DF	Qualifiers
C6	ND	4.9	1.00	
C7	ND	4.9	1.00	
C8	ND	4.9	1.00	
C9-C10	ND	4.9	1.00	
C11-C12	ND	4.9	1.00	
C13-C14	ND	4.9	1.00	
C15-C16	ND	4.9	1.00	
C17-C18	ND	4.9	1.00	
C19-C20	ND	4.9	1.00	
C21-C22	ND	4.9	1.00	
C23-C24	ND	4.9	1.00	
C25-C28	ND	4.9	1.00	
C29-C32	ND	4.9	1.00	
C33-C36	ND	4.9	1.00	
C37-C40	ND	4.9	1.00	
C41-C44	ND	4.9	1.00	
C6-C44 Total	ND	4.9	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	95	61-145	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)
		Units:	mg/kg
Project: INFINEON - El Segundo / 0397848			Page 3 of 18

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-12-0-1	**17-03-1154-3-B**	**03/14/17 15:47**	**Solid**	**GC 45**	**03/17/17**	**03/18/17 20:56**	**170317B17**

Comment(s): - The total concentration includes individual carbon range concentrations (estimated), if any, below the RL reported as ND.

Parameter	Result	RL	DF	Qualifiers
C6	ND	5.0	1.00	
C7	ND	5.0	1.00	
C8	ND	5.0	1.00	
C9-C10	ND	5.0	1.00	
C11-C12	ND	5.0	1.00	
C13-C14	ND	5.0	1.00	
C15-C16	ND	5.0	1.00	
C17-C18	ND	5.0	1.00	
C19-C20	ND	5.0	1.00	
C21-C22	ND	5.0	1.00	
C23-C24	ND	5.0	1.00	
C25-C28	ND	5.0	1.00	
C29-C32	ND	5.0	1.00	
C33-C36	ND	5.0	1.00	
C37-C40	ND	5.0	1.00	
C41-C44	ND	5.0	1.00	
C6-C44 Total	ND	5.0	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	98	61-145	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)
		Units:	mg/kg
Project: INFINEON - El Segundo / 0397848			Page 4 of 18

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-13-0-1	**17-03-1154-4-B**	**03/14/17 15:50**	**Solid**	**GC 45**	**03/17/17**	**03/18/17 21:17**	**170317B17**

Comment(s): - The total concentration includes individual carbon range concentrations (estimated), if any, below the RL reported as ND.

Parameter	Result	RL	DF	Qualifiers
C6	ND	5.0	1.00	
C7	ND	5.0	1.00	
C8	ND	5.0	1.00	
C9-C10	ND	5.0	1.00	
C11-C12	ND	5.0	1.00	
C13-C14	ND	5.0	1.00	
C15-C16	ND	5.0	1.00	
C17-C18	ND	5.0	1.00	
C19-C20	ND	5.0	1.00	
C21-C22	ND	5.0	1.00	
C23-C24	ND	5.0	1.00	
C25-C28	ND	5.0	1.00	
C29-C32	ND	5.0	1.00	
C33-C36	ND	5.0	1.00	
C37-C40	ND	5.0	1.00	
C41-C44	ND	5.0	1.00	
C6-C44 Total	ND	5.0	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	104	61-145	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)
		Units:	mg/kg
Project: INFINEON - El Segundo / 0397848			Page 5 of 18

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-10-1-2	**17-03-1154-5-B**	**03/14/17 15:54**	**Solid**	**GC 45**	**03/17/17**	**03/18/17 21:38**	**170317B17**

Comment(s): - The total concentration includes individual carbon range concentrations (estimated), if any, below the RL reported as ND.

Parameter	Result	RL	DF	Qualifiers
C6	ND	5.1	1.00	
C7	ND	5.1	1.00	
C8	ND	5.1	1.00	
C9-C10	ND	5.1	1.00	
C11-C12	ND	5.1	1.00	
C13-C14	ND	5.1	1.00	
C15-C16	ND	5.1	1.00	
C17-C18	ND	5.1	1.00	
C19-C20	ND	5.1	1.00	
C21-C22	ND	5.1	1.00	
C23-C24	ND	5.1	1.00	
C25-C28	ND	5.1	1.00	
C29-C32	ND	5.1	1.00	
C33-C36	ND	5.1	1.00	
C37-C40	ND	5.1	1.00	
C41-C44	ND	5.1	1.00	
C6-C44 Total	ND	5.1	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	94	61-145	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)
		Units:	mg/kg
Project: INFINEON - El Segundo / 0397848			Page 6 of 18

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-1-0-1	**17-03-1154-6-B**	**03/14/17 15:57**	**Solid**	**GC 45**	**03/17/17**	**03/18/17 22:00**	**170317B17**

Comment(s): - The total concentration includes individual carbon range concentrations (estimated), if any, below the RL reported as ND.

Parameter	Result	RL	DF	Qualifiers
C6	ND	5.0	1.00	
C7	ND	5.0	1.00	
C8	ND	5.0	1.00	
C9-C10	ND	5.0	1.00	
C11-C12	ND	5.0	1.00	
C13-C14	ND	5.0	1.00	
C15-C16	ND	5.0	1.00	
C17-C18	ND	5.0	1.00	
C19-C20	ND	5.0	1.00	
C21-C22	ND	5.0	1.00	
C23-C24	ND	5.0	1.00	
C25-C28	ND	5.0	1.00	
C29-C32	ND	5.0	1.00	
C33-C36	ND	5.0	1.00	
C37-C40	ND	5.0	1.00	
C41-C44	ND	5.0	1.00	
C6-C44 Total	ND	5.0	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	92	61-145	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)
		Units:	mg/kg
Project: INFINEON - El Segundo / 0397848			Page 7 of 18

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-7-0-1	**17-03-1154-7-B**	**03/14/17 16:01**	**Solid**	**GC 45**	**03/17/17**	**03/18/17 22:22**	**170317B17**

Comment(s): - The total concentration includes individual carbon range concentrations (estimated), if any, below the RL reported as ND.

Parameter	Result	RL	DF	Qualifiers
C6	ND	5.0	1.00	
C7	ND	5.0	1.00	
C8	ND	5.0	1.00	
C9-C10	ND	5.0	1.00	
C11-C12	ND	5.0	1.00	
C13-C14	ND	5.0	1.00	
C15-C16	ND	5.0	1.00	
C17-C18	ND	5.0	1.00	
C19-C20	ND	5.0	1.00	
C21-C22	ND	5.0	1.00	
C23-C24	ND	5.0	1.00	
C25-C28	ND	5.0	1.00	
C29-C32	6.4	5.0	1.00	
C33-C36	ND	5.0	1.00	
C37-C40	ND	5.0	1.00	
C41-C44	ND	5.0	1.00	
C6-C44 Total	16	5.0	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	102	61-145	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)
		Units:	mg/kg
Project: INFINEON - El Segundo / 0397848			Page 8 of 18

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-5-0-1	**17-03-1154-8-B**	**03/14/17 16:04**	**Solid**	**GC 45**	**03/17/17**	**03/18/17 22:44**	**170317B17**

Comment(s): - The total concentration includes individual carbon range concentrations (estimated), if any, below the RL reported as ND.

Parameter	Result	RL	DF	Qualifiers
C6	ND	4.9	1.00	
C7	ND	4.9	1.00	
C8	ND	4.9	1.00	
C9-C10	ND	4.9	1.00	
C11-C12	ND	4.9	1.00	
C13-C14	ND	4.9	1.00	
C15-C16	ND	4.9	1.00	
C17-C18	ND	4.9	1.00	
C19-C20	ND	4.9	1.00	
C21-C22	ND	4.9	1.00	
C23-C24	ND	4.9	1.00	
C25-C28	ND	4.9	1.00	
C29-C32	ND	4.9	1.00	
C33-C36	ND	4.9	1.00	
C37-C40	ND	4.9	1.00	
C41-C44	ND	4.9	1.00	
C6-C44 Total	ND	4.9	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	95	61-145	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)
		Units:	mg/kg
Project: INFINEON - El Segundo / 0397848			Page 9 of 18

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-6-0-1	**17-03-1154-9-B**	**03/14/17 16:11**	**Solid**	**GC 45**	**03/17/17**	**03/18/17 23:06**	**170317B17**

Comment(s): - The total concentration includes individual carbon range concentrations (estimated), if any, below the RL reported as ND.

Parameter	Result	RL	DF	Qualifiers
C6	ND	5.0	1.00	
C7	ND	5.0	1.00	
C8	ND	5.0	1.00	
C9-C10	ND	5.0	1.00	
C11-C12	ND	5.0	1.00	
C13-C14	ND	5.0	1.00	
C15-C16	ND	5.0	1.00	
C17-C18	ND	5.0	1.00	
C19-C20	ND	5.0	1.00	
C21-C22	ND	5.0	1.00	
C23-C24	ND	5.0	1.00	
C25-C28	ND	5.0	1.00	
C29-C32	ND	5.0	1.00	
C33-C36	ND	5.0	1.00	
C37-C40	ND	5.0	1.00	
C41-C44	ND	5.0	1.00	
C6-C44 Total	12	5.0	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	98	61-145	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)
		Units:	mg/kg
Project: INFINEON - El Segundo / 0397848			Page 10 of 18

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-2-1-2	**17-03-1154-10-B**	**03/14/17 16:15**	**Solid**	**GC 45**	**03/17/17**	**03/18/17 23:28**	**170317B17**

Comment(s): - The total concentration includes individual carbon range concentrations (estimated), if any, below the RL reported as ND.

Parameter	Result	RL	DF	Qualifiers
C6	ND	4.9	1.00	
C7	ND	4.9	1.00	
C8	ND	4.9	1.00	
C9-C10	ND	4.9	1.00	
C11-C12	ND	4.9	1.00	
C13-C14	ND	4.9	1.00	
C15-C16	ND	4.9	1.00	
C17-C18	ND	4.9	1.00	
C19-C20	ND	4.9	1.00	
C21-C22	ND	4.9	1.00	
C23-C24	ND	4.9	1.00	
C25-C28	ND	4.9	1.00	
C29-C32	ND	4.9	1.00	
C33-C36	ND	4.9	1.00	
C37-C40	ND	4.9	1.00	
C41-C44	ND	4.9	1.00	
C6-C44 Total	ND	4.9	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	100	61-145	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)
		Units:	mg/kg
Project: INFINEON - El Segundo / 0397848			Page 11 of 18

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-3-0-1	**17-03-1154-11-B**	**03/14/17 16:18**	**Solid**	**GC 45**	**03/17/17**	**03/19/17 00:12**	**170317B17**

Comment(s): - The total concentration includes individual carbon range concentrations (estimated), if any, below the RL reported as ND.

Parameter	Result	RL	DF	Qualifiers
C6	ND	25	5.00	
C7	ND	25	5.00	
C8	ND	25	5.00	
C9-C10	ND	25	5.00	
C11-C12	ND	25	5.00	
C13-C14	ND	25	5.00	
C15-C16	ND	25	5.00	
C17-C18	ND	25	5.00	
C19-C20	ND	25	5.00	
C21-C22	ND	25	5.00	
C23-C24	ND	25	5.00	
C25-C28	28	25	5.00	
C29-C32	44	25	5.00	
C33-C36	26	25	5.00	
C37-C40	ND	25	5.00	
C41-C44	ND	25	5.00	
C6-C44 Total	120	25	5.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	97	61-145	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 3550B
Method: EPA 8015B (M)
Units: mg/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-9-0-1	**17-03-1154-12-B**	**03/14/17 16:22**	**Solid**	**GC 45**	**03/17/17**	**03/19/17 00:33**	**170317B17**

Comment(s): - The total concentration includes individual carbon range concentrations (estimated), if any, below the RL reported as ND.

Parameter	Result	RL	DF	Qualifiers
C6	ND	4.9	1.00	
C7	ND	4.9	1.00	
C8	ND	4.9	1.00	
C9-C10	ND	4.9	1.00	
C11-C12	ND	4.9	1.00	
C13-C14	ND	4.9	1.00	
C15-C16	ND	4.9	1.00	
C17-C18	ND	4.9	1.00	
C19-C20	ND	4.9	1.00	
C21-C22	ND	4.9	1.00	
C23-C24	ND	4.9	1.00	
C25-C28	18	4.9	1.00	
C29-C32	30	4.9	1.00	
C33-C36	19	4.9	1.00	
C37-C40	12	4.9	1.00	
C41-C44	ND	4.9	1.00	
C6-C44 Total	88	4.9	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	101	61-145	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)
		Units:	mg/kg
Project: INFINEON - El Segundo / 0397848			Page 13 of 18

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-4-0-1	**17-03-1154-13-B**	**03/14/17 16:25**	**Solid**	**GC 45**	**03/17/17**	**03/19/17 00:54**	**170317B17**

Comment(s): - The total concentration includes individual carbon range concentrations (estimated), if any, below the RL reported as ND.

Parameter	Result	RL	DF	Qualifiers
C6	ND	5.0	1.00	
C7	ND	5.0	1.00	
C8	ND	5.0	1.00	
C9-C10	ND	5.0	1.00	
C11-C12	ND	5.0	1.00	
C13-C14	ND	5.0	1.00	
C15-C16	ND	5.0	1.00	
C17-C18	ND	5.0	1.00	
C19-C20	ND	5.0	1.00	
C21-C22	ND	5.0	1.00	
C23-C24	ND	5.0	1.00	
C25-C28	13	5.0	1.00	
C29-C32	23	5.0	1.00	
C33-C36	16	5.0	1.00	
C37-C40	8.6	5.0	1.00	
C41-C44	ND	5.0	1.00	
C6-C44 Total	65	5.0	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	104	61-145	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)
		Units:	mg/kg
Project: INFINEON - El Segundo / 0397848			Page 14 of 18

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-19-0-1	**17-03-1154-14-B**	**03/14/17 16:28**	**Solid**	**GC 45**	**03/17/17**	**03/19/17 01:16**	**170317B17**

Comment(s): - The total concentration includes individual carbon range concentrations (estimated), if any, below the RL reported as ND.

Parameter	Result	RL	DF	Qualifiers
C6	ND	4.9	1.00	
C7	ND	4.9	1.00	
C8	ND	4.9	1.00	
C9-C10	ND	4.9	1.00	
C11-C12	ND	4.9	1.00	
C13-C14	ND	4.9	1.00	
C15-C16	ND	4.9	1.00	
C17-C18	ND	4.9	1.00	
C19-C20	ND	4.9	1.00	
C21-C22	ND	4.9	1.00	
C23-C24	ND	4.9	1.00	
C25-C28	ND	4.9	1.00	
C29-C32	ND	4.9	1.00	
C33-C36	ND	4.9	1.00	
C37-C40	ND	4.9	1.00	
C41-C44	ND	4.9	1.00	
C6-C44 Total	ND	4.9	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	102	61-145	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)
		Units:	mg/kg
Project: INFINEON - El Segundo / 0397848			Page 15 of 18

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SBB2-1-0-1	**17-03-1154-15-B**	**03/15/17 09:05**	**Solid**	**GC 45**	**03/17/17**	**03/19/17 01:37**	**170317B17**

Comment(s): - The total concentration includes individual carbon range concentrations (estimated), if any, below the RL reported as ND.

Parameter	Result	RL	DF	Qualifiers
C6	ND	5.0	1.00	
C7	ND	5.0	1.00	
C8	ND	5.0	1.00	
C9-C10	ND	5.0	1.00	
C11-C12	ND	5.0	1.00	
C13-C14	ND	5.0	1.00	
C15-C16	ND	5.0	1.00	
C17-C18	ND	5.0	1.00	
C19-C20	ND	5.0	1.00	
C21-C22	ND	5.0	1.00	
C23-C24	ND	5.0	1.00	
C25-C28	ND	5.0	1.00	
C29-C32	ND	5.0	1.00	
C33-C36	ND	5.0	1.00	
C37-C40	ND	5.0	1.00	
C41-C44	ND	5.0	1.00	
C6-C44 Total	ND	5.0	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	104	61-145	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 3550B
Method: EPA 8015B (M)
Units: mg/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SBB2-4-0-1	**17-03-1154-16-B**	**03/15/17 09:35**	**Solid**	**GC 45**	**03/17/17**	**03/19/17 01:59**	**170317B17**

Comment(s): - The total concentration includes individual carbon range concentrations (estimated), if any, below the RL reported as ND.

Parameter	Result	RL	DF	Qualifiers
C6	ND	5.0	1.00	
C7	ND	5.0	1.00	
C8	ND	5.0	1.00	
C9-C10	ND	5.0	1.00	
C11-C12	ND	5.0	1.00	
C13-C14	ND	5.0	1.00	
C15-C16	ND	5.0	1.00	
C17-C18	ND	5.0	1.00	
C19-C20	ND	5.0	1.00	
C21-C22	ND	5.0	1.00	
C23-C24	ND	5.0	1.00	
C25-C28	ND	5.0	1.00	
C29-C32	ND	5.0	1.00	
C33-C36	ND	5.0	1.00	
C37-C40	ND	5.0	1.00	
C41-C44	ND	5.0	1.00	
C6-C44 Total	ND	5.0	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	98	61-145	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 3550B
Method: EPA 8015B (M)
Units: mg/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SBB2-5-3-4	**17-03-1154-17-B**	**03/15/17 10:50**	**Solid**	**GC 45**	**03/17/17**	**03/19/17 02:21**	**170317B17**

Comment(s): - The total concentration includes individual carbon range concentrations (estimated), if any, below the RL reported as ND.

Parameter	Result	RL	DF	Qualifiers
C6	ND	5.1	1.00	
C7	ND	5.1	1.00	
C8	ND	5.1	1.00	
C9-C10	ND	5.1	1.00	
C11-C12	ND	5.1	1.00	
C13-C14	ND	5.1	1.00	
C15-C16	ND	5.1	1.00	
C17-C18	ND	5.1	1.00	
C19-C20	15	5.1	1.00	
C21-C22	11	5.1	1.00	
C23-C24	14	5.1	1.00	
C25-C28	36	5.1	1.00	
C29-C32	52	5.1	1.00	
C33-C36	33	5.1	1.00	
C37-C40	16	5.1	1.00	
C41-C44	ND	5.1	1.00	
C6-C44 Total	180	5.1	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	103	61-145	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 3550B
Method: EPA 8015B (M)
Units: mg/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-15-490-2537**	**N/A**	**Solid**	**GC 45**	**03/17/17**	**03/18/17 18:49**	**170317B17**

Parameter	Result	RL	DF	Qualifiers
C6	ND	5.0	1.00	
C7	ND	5.0	1.00	
C8	ND	5.0	1.00	
C9-C10	ND	5.0	1.00	
C11-C12	ND	5.0	1.00	
C13-C14	ND	5.0	1.00	
C15-C16	ND	5.0	1.00	
C17-C18	ND	5.0	1.00	
C19-C20	ND	5.0	1.00	
C21-C22	ND	5.0	1.00	
C23-C24	ND	5.0	1.00	
C25-C28	ND	5.0	1.00	
C29-C32	ND	5.0	1.00	
C33-C36	ND	5.0	1.00	
C37-C40	ND	5.0	1.00	
C41-C44	ND	5.0	1.00	
C6-C44 Total	ND	5.0	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	95	61-145	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 3050B
Method: EPA 6010B
Units: mg/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-20-0-1	**17-03-1154-1-B**	**03/14/17 15:34**	**Solid**	**ICP 7300**	**03/22/17**	**03/23/17 12:53**	**170322L05**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.725	0.966	
Arsenic	ND	0.725	0.966	
Barium	20.3	0.483	0.966	
Beryllium	ND	0.242	0.966	
Cadmium	ND	0.483	0.966	
Chromium	9.83	0.242	0.966	
Cobalt	2.45	0.242	0.966	
Copper	2.38	0.483	0.966	
Lead	2.73	0.483	0.966	
Molybdenum	ND	0.242	0.966	
Nickel	3.65	0.242	0.966	
Selenium	ND	0.725	0.966	
Silver	ND	0.242	0.966	
Thallium	ND	0.725	0.966	
Vanadium	13.1	0.242	0.966	
Zinc	12.4	0.966	0.966	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 3050B
Method: EPA 6010B
Units: mg/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-11-0-1	**17-03-1154-2-B**	**03/14/17 15:44**	**Solid**	**ICP 7300**	**03/22/17**	**03/23/17 12:57**	**170322L05**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.739	0.985	
Arsenic	ND	0.739	0.985	
Barium	41.5	0.493	0.985	
Beryllium	ND	0.246	0.985	
Cadmium	ND	0.493	0.985	
Chromium	9.31	0.246	0.985	
Cobalt	3.27	0.246	0.985	
Copper	5.58	0.493	0.985	
Lead	7.39	0.493	0.985	
Molybdenum	ND	0.246	0.985	
Nickel	4.46	0.246	0.985	
Selenium	ND	0.739	0.985	
Silver	ND	0.246	0.985	
Thallium	ND	0.739	0.985	
Vanadium	15.3	0.246	0.985	
Zinc	21.0	0.985	0.985	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 3050B
Method: EPA 6010B
Units: mg/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-12-0-1	**17-03-1154-3-B**	**03/14/17 15:47**	**Solid**	**ICP 7300**	**03/22/17**	**03/23/17 12:58**	**170322L05**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.728	0.971	
Arsenic	0.991	0.728	0.971	
Barium	34.5	0.485	0.971	
Beryllium	ND	0.243	0.971	
Cadmium	ND	0.485	0.971	
Chromium	10.2	0.243	0.971	
Cobalt	3.34	0.243	0.971	
Copper	5.43	0.485	0.971	
Lead	18.1	0.485	0.971	
Molybdenum	ND	0.243	0.971	
Nickel	4.30	0.243	0.971	
Selenium	1.02	0.728	0.971	
Silver	ND	0.243	0.971	
Thallium	ND	0.728	0.971	
Vanadium	16.3	0.243	0.971	
Zinc	41.8	0.971	0.971	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 3050B
Method: EPA 6010B
Units: mg/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-13-0-1	**17-03-1154-4-B**	**03/14/17 15:50**	**Solid**	**ICP 7300**	**03/22/17**	**03/23/17 13:00**	**170322L05**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.721	0.962	
Arsenic	1.04	0.721	0.962	
Barium	44.3	0.481	0.962	
Beryllium	ND	0.240	0.962	
Cadmium	ND	0.481	0.962	
Chromium	9.55	0.240	0.962	
Cobalt	3.52	0.240	0.962	
Copper	3.70	0.481	0.962	
Lead	2.08	0.481	0.962	
Molybdenum	ND	0.240	0.962	
Nickel	4.34	0.240	0.962	
Selenium	0.854	0.721	0.962	
Silver	ND	0.240	0.962	
Thallium	ND	0.721	0.962	
Vanadium	14.6	0.240	0.962	
Zinc	10.3	0.962	0.962	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 3050B
Method: EPA 6010B
Units: mg/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-10-1-2	**17-03-1154-5-B**	**03/14/17 15:54**	**Solid**	**ICP 7300**	**03/22/17**	**03/23/17 13:01**	**170322L05**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.735	0.980	
Arsenic	1.31	0.735	0.980	
Barium	40.3	0.490	0.980	
Beryllium	ND	0.245	0.980	
Cadmium	ND	0.490	0.980	
Chromium	12.5	0.245	0.980	
Cobalt	4.29	0.245	0.980	
Copper	4.25	0.490	0.980	
Lead	3.07	0.490	0.980	
Molybdenum	ND	0.245	0.980	
Nickel	5.41	0.245	0.980	
Selenium	0.793	0.735	0.980	
Silver	ND	0.245	0.980	
Thallium	ND	0.735	0.980	
Vanadium	17.0	0.245	0.980	
Zinc	13.4	0.980	0.980	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 3050B
Method: EPA 6010B
Units: mg/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-1-0-1	**17-03-1154-6-B**	**03/14/17 15:57**	**Solid**	**ICP 7300**	**03/22/17**	**03/23/17 13:02**	**170322L05**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.714	0.952	
Arsenic	0.828	0.714	0.952	
Barium	36.6	0.476	0.952	
Beryllium	ND	0.238	0.952	
Cadmium	ND	0.476	0.952	
Chromium	8.73	0.238	0.952	
Cobalt	3.17	0.238	0.952	
Copper	3.39	0.476	0.952	
Lead	2.15	0.476	0.952	
Molybdenum	ND	0.238	0.952	
Nickel	3.71	0.238	0.952	
Selenium	0.778	0.714	0.952	
Silver	ND	0.238	0.952	
Thallium	ND	0.714	0.952	
Vanadium	13.0	0.238	0.952	
Zinc	10.0	0.952	0.952	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 3050B
Method: EPA 6010B
Units: mg/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-7-0-1	**17-03-1154-7-B**	**03/14/17 16:01**	**Solid**	**ICP 7300**	**03/22/17**	**03/23/17 13:03**	**170322L05**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.721	0.962	
Arsenic	0.956	0.721	0.962	
Barium	31.0	0.481	0.962	
Beryllium	ND	0.240	0.962	
Cadmium	0.557	0.481	0.962	
Chromium	8.42	0.240	0.962	
Cobalt	11.1	0.240	0.962	
Copper	9.63	0.481	0.962	
Lead	17.4	0.481	0.962	
Molybdenum	ND	0.240	0.962	
Nickel	4.45	0.240	0.962	
Selenium	0.751	0.721	0.962	
Silver	ND	0.240	0.962	
Thallium	ND	0.721	0.962	
Vanadium	14.2	0.240	0.962	
Zinc	40.0	0.962	0.962	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 3050B
Method: EPA 6010B
Units: mg/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-5-0-1	**17-03-1154-8-B**	**03/14/17 16:04**	**Solid**	**ICP 7300**	**03/22/17**	**03/23/17 13:04**	**170322L05**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.718	0.957	
Arsenic	0.783	0.718	0.957	
Barium	40.7	0.478	0.957	
Beryllium	ND	0.239	0.957	
Cadmium	ND	0.478	0.957	
Chromium	10.1	0.239	0.957	
Cobalt	4.83	0.239	0.957	
Copper	5.29	0.478	0.957	
Lead	2.28	0.478	0.957	
Molybdenum	ND	0.239	0.957	
Nickel	5.11	0.239	0.957	
Selenium	ND	0.718	0.957	
Silver	ND	0.239	0.957	
Thallium	ND	0.718	0.957	
Vanadium	15.4	0.239	0.957	
Zinc	12.8	0.957	0.957	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 3050B
Method: EPA 6010B
Units: mg/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-6-0-1	**17-03-1154-9-B**	**03/14/17 16:11**	**Solid**	**ICP 7300**	**03/22/17**	**03/23/17 13:05**	**170322L05**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.728	0.971	
Arsenic	ND	0.728	0.971	
Barium	48.9	0.485	0.971	
Beryllium	ND	0.243	0.971	
Cadmium	0.795	0.485	0.971	
Chromium	8.34	0.243	0.971	
Cobalt	14.5	0.243	0.971	
Copper	13.2	0.485	0.971	
Lead	31.7	0.485	0.971	
Molybdenum	ND	0.243	0.971	
Nickel	4.50	0.243	0.971	
Selenium	1.01	0.728	0.971	
Silver	ND	0.243	0.971	
Thallium	ND	0.728	0.971	
Vanadium	17.9	0.243	0.971	
Zinc	60.1	0.971	0.971	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 3050B
Method: EPA 6010B
Units: mg/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-2-1-2	**17-03-1154-10-B**	**03/14/17 16:15**	**Solid**	**ICP 7300**	**03/22/17**	**03/23/17 13:05**	**170322L05**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.714	0.952	
Arsenic	0.949	0.714	0.952	
Barium	24.7	0.476	0.952	
Beryllium	ND	0.238	0.952	
Cadmium	ND	0.476	0.952	
Chromium	6.82	0.238	0.952	
Cobalt	2.27	0.238	0.952	
Copper	2.68	0.476	0.952	
Lead	3.53	0.476	0.952	
Molybdenum	ND	0.238	0.952	
Nickel	2.79	0.238	0.952	
Selenium	ND	0.714	0.952	
Silver	ND	0.238	0.952	
Thallium	ND	0.714	0.952	
Vanadium	12.5	0.238	0.952	
Zinc	9.45	0.952	0.952	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 3050B
Method: EPA 6010B
Units: mg/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-3-0-1	**17-03-1154-11-B**	**03/14/17 16:18**	**Solid**	**ICP 7300**	**03/22/17**	**03/23/17 13:06**	**170322L05**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.728	0.971	
Arsenic	0.814	0.728	0.971	
Barium	27.1	0.485	0.971	
Beryllium	ND	0.243	0.971	
Cadmium	0.783	0.485	0.971	
Chromium	10.2	0.243	0.971	
Cobalt	6.25	0.243	0.971	
Copper	10.1	0.485	0.971	
Lead	32.1	0.485	0.971	
Molybdenum	ND	0.243	0.971	
Nickel	4.30	0.243	0.971	
Selenium	0.947	0.728	0.971	
Silver	ND	0.243	0.971	
Thallium	ND	0.728	0.971	
Vanadium	13.9	0.243	0.971	
Zinc	94.1	0.971	0.971	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 3050B
Method: EPA 6010B
Units: mg/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-9-0-1	**17-03-1154-12-B**	**03/14/17 16:22**	**Solid**	**ICP 7300**	**03/22/17**	**03/23/17 13:07**	**170322L05**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.721	0.962	
Arsenic	1.17	0.721	0.962	
Barium	59.0	0.481	0.962	
Beryllium	ND	0.240	0.962	
Cadmium	1.20	0.481	0.962	
Chromium	10.4	0.240	0.962	
Cobalt	9.33	0.240	0.962	
Copper	12.0	0.481	0.962	
Lead	65.0	0.481	0.962	
Molybdenum	ND	0.240	0.962	
Nickel	5.80	0.240	0.962	
Selenium	1.12	0.721	0.962	
Silver	ND	0.240	0.962	
Thallium	ND	0.721	0.962	
Vanadium	22.9	0.240	0.962	
Zinc	71.4	0.962	0.962	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 3050B
Method: EPA 6010B
Units: mg/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-4-0-1	**17-03-1154-13-B**	**03/14/17 16:25**	**Solid**	**ICP 7300**	**03/22/17**	**03/23/17 13:08**	**170322L05**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.739	0.985	
Arsenic	ND	0.739	0.985	
Barium	26.1	0.493	0.985	
Beryllium	ND	0.246	0.985	
Cadmium	0.672	0.493	0.985	
Chromium	8.68	0.246	0.985	
Cobalt	3.08	0.246	0.985	
Copper	5.79	0.493	0.985	
Lead	30.3	0.493	0.985	
Molybdenum	ND	0.246	0.985	
Nickel	4.16	0.246	0.985	
Selenium	0.836	0.739	0.985	
Silver	ND	0.246	0.985	
Thallium	ND	0.739	0.985	
Vanadium	15.3	0.246	0.985	
Zinc	62.0	0.985	0.985	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 3050B
Method: EPA 6010B
Units: mg/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-19-0-1	**17-03-1154-14-B**	**03/14/17 16:28**	**Solid**	**ICP 7300**	**03/22/17**	**03/23/17 13:11**	**170322L05**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.732	0.976	
Arsenic	ND	0.732	0.976	
Barium	15.8	0.488	0.976	
Beryllium	ND	0.244	0.976	
Cadmium	5.84	0.488	0.976	
Chromium	11.6	0.244	0.976	
Cobalt	4.65	0.244	0.976	
Copper	17.0	0.488	0.976	
Lead	3.33	0.488	0.976	
Molybdenum	ND	0.244	0.976	
Nickel	8.94	0.244	0.976	
Selenium	0.736	0.732	0.976	
Silver	ND	0.244	0.976	
Thallium	ND	0.732	0.976	
Vanadium	14.7	0.244	0.976	
Zinc	237	0.976	0.976	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 3050B
Method: EPA 6010B
Units: mg/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SBB2-1-0-1	**17-03-1154-15-B**	**03/15/17 09:05**	**Solid**	**ICP 7300**	**03/22/17**	**03/23/17 13:11**	**170322L05**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.735	0.980	
Arsenic	1.24	0.735	0.980	
Barium	17.4	0.490	0.980	
Beryllium	ND	0.245	0.980	
Cadmium	ND	0.490	0.980	
Chromium	15.2	0.245	0.980	
Cobalt	3.54	0.245	0.980	
Copper	2.73	0.490	0.980	
Lead	1.55	0.490	0.980	
Molybdenum	ND	0.245	0.980	
Nickel	6.53	0.245	0.980	
Selenium	ND	0.735	0.980	
Silver	ND	0.245	0.980	
Thallium	ND	0.735	0.980	
Vanadium	14.5	0.245	0.980	
Zinc	8.29	0.980	0.980	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 3050B
Method: EPA 6010B
Units: mg/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SBB2-4-0-1	**17-03-1154-16-B**	**03/15/17 09:35**	**Solid**	**ICP 7300**	**03/22/17**	**03/23/17 13:12**	**170322L05**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.721	0.962	
Arsenic	1.19	0.721	0.962	
Barium	20.7	0.481	0.962	
Beryllium	ND	0.240	0.962	
Cadmium	ND	0.481	0.962	
Chromium	13.9	0.240	0.962	
Cobalt	2.99	0.240	0.962	
Copper	4.21	0.481	0.962	
Lead	1.52	0.481	0.962	
Molybdenum	0.343	0.240	0.962	
Nickel	6.45	0.240	0.962	
Selenium	ND	0.721	0.962	
Silver	ND	0.240	0.962	
Thallium	ND	0.721	0.962	
Vanadium	15.0	0.240	0.962	
Zinc	9.20	0.962	0.962	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 3050B
Method: EPA 6010B
Units: mg/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SBB2-5-3-4	**17-03-1154-17-B**	**03/15/17 10:50**	**Solid**	**ICP 7300**	**03/22/17**	**03/23/17 13:13**	**170322L05**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.728	0.971	
Arsenic	2.61	0.728	0.971	
Barium	66.9	0.485	0.971	
Beryllium	ND	0.243	0.971	
Cadmium	2.61	0.485	0.971	
Chromium	17.8	0.243	0.971	
Cobalt	5.93	0.243	0.971	
Copper	17.9	0.485	0.971	
Lead	65.5	0.485	0.971	
Molybdenum	0.463	0.243	0.971	
Nickel	8.84	0.243	0.971	
Selenium	3.98	0.728	0.971	
Silver	ND	0.243	0.971	
Thallium	ND	0.728	0.971	
Vanadium	29.1	0.243	0.971	
Zinc	66.3	0.971	0.971	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 3050B
Method: EPA 6010B
Units: mg/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**097-01-002-24479**	**N/A**	**Solid**	**ICP 7300**	**03/22/17**	**03/23/17 11:37**	**170322L05**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.721	0.962	
Arsenic	ND	0.721	0.962	
Barium	ND	0.481	0.962	
Beryllium	ND	0.240	0.962	
Cadmium	ND	0.481	0.962	
Chromium	ND	0.240	0.962	
Cobalt	ND	0.240	0.962	
Copper	ND	0.481	0.962	
Lead	ND	0.481	0.962	
Molybdenum	ND	0.240	0.962	
Nickel	ND	0.240	0.962	
Selenium	ND	0.721	0.962	
Silver	ND	0.240	0.962	
Thallium	ND	0.721	0.962	
Vanadium	ND	0.240	0.962	
Zinc	ND	0.962	0.962	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: INFINEON - El Segundo / 0397848

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 7471A Total
Method: EPA 7471A
Units: mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-20-0-1	**17-03-1154-1-B**	**03/14/17 15:34**	**Solid**	**Mercury 08**	**03/22/17**	**03/22/17 19:05**	**170322L04**

Parameter	Result	RL	DF	Qualifiers
Mercury	ND	0.0806	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-11-0-1	**17-03-1154-2-B**	**03/14/17 15:44**	**Solid**	**Mercury 08**	**03/22/17**	**03/22/17 19:12**	**170322L04**

Parameter	Result	RL	DF	Qualifiers
Mercury	ND	0.0820	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-12-0-1	**17-03-1154-3-B**	**03/14/17 15:47**	**Solid**	**Mercury 08**	**03/22/17**	**03/22/17 19:14**	**170322L04**

Parameter	Result	RL	DF	Qualifiers
Mercury	ND	0.0794	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-13-0-1	**17-03-1154-4-B**	**03/14/17 15:50**	**Solid**	**Mercury 08**	**03/22/17**	**03/22/17 19:16**	**170322L04**

Parameter	Result	RL	DF	Qualifiers
Mercury	ND	0.0806	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-10-1-2	**17-03-1154-5-B**	**03/14/17 15:54**	**Solid**	**Mercury 08**	**03/22/17**	**03/22/17 19:18**	**170322L04**

Parameter	Result	RL	DF	Qualifiers
Mercury	ND	0.0794	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-1-0-1	**17-03-1154-6-B**	**03/14/17 15:57**	**Solid**	**Mercury 08**	**03/22/17**	**03/22/17 19:21**	**170322L04**

Parameter	Result	RL	DF	Qualifiers
Mercury	ND	0.0820	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-7-0-1	**17-03-1154-7-B**	**03/14/17 16:01**	**Solid**	**Mercury 08**	**03/22/17**	**03/22/17 19:28**	**170322L04**

Parameter	Result	RL	DF	Qualifiers
Mercury	ND	0.0806	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-5-0-1	**17-03-1154-8-B**	**03/14/17 16:04**	**Solid**	**Mercury 08**	**03/22/17**	**03/22/17 19:30**	**170322L04**

Parameter	Result	RL	DF	Qualifiers
Mercury	ND	0.0820	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 7471A Total
Method: EPA 7471A
Units: mg/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-6-0-1	**17-03-1154-9-B**	**03/14/17 16:11**	**Solid**	**Mercury 08**	**03/22/17**	**03/22/17 19:32**	**170322L04**

Parameter	Result	RL	DF	Qualifiers
Mercury	ND	0.0794	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-2-1-2	**17-03-1154-10-B**	**03/14/17 16:15**	**Solid**	**Mercury 08**	**03/22/17**	**03/22/17 19:35**	**170322L04**

Parameter	Result	RL	DF	Qualifiers
Mercury	ND	0.0806	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-3-0-1	**17-03-1154-11-B**	**03/14/17 16:18**	**Solid**	**Mercury 08**	**03/22/17**	**03/22/17 19:37**	**170322L04**

Parameter	Result	RL	DF	Qualifiers
Mercury	ND	0.0794	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-9-0-1	**17-03-1154-12-B**	**03/14/17 16:22**	**Solid**	**Mercury 08**	**03/22/17**	**03/22/17 19:39**	**170322L04**

Parameter	Result	RL	DF	Qualifiers
Mercury	ND	0.0806	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-4-0-1	**17-03-1154-13-B**	**03/14/17 16:25**	**Solid**	**Mercury 08**	**03/22/17**	**03/22/17 19:41**	**170322L04**

Parameter	Result	RL	DF	Qualifiers
Mercury	ND	0.0794	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-19-0-1	**17-03-1154-14-B**	**03/14/17 16:28**	**Solid**	**Mercury 08**	**03/22/17**	**03/22/17 19:44**	**170322L04**

Parameter	Result	RL	DF	Qualifiers
Mercury	ND	0.0820	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SBB2-1-0-1	**17-03-1154-15-B**	**03/15/17 09:05**	**Solid**	**Mercury 08**	**03/22/17**	**03/22/17 19:46**	**170322L04**

Parameter	Result	RL	DF	Qualifiers
Mercury	ND	0.0806	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SBB2-4-0-1	**17-03-1154-16-B**	**03/15/17 09:35**	**Solid**	**Mercury 08**	**03/22/17**	**03/22/17 19:48**	**170322L04**

Parameter	Result	RL	DF	Qualifiers
Mercury	ND	0.0820	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 7471A Total
Method: EPA 7471A
Units: mg/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SBB2-5-3-4	**17-03-1154-17-A**	**03/15/17 10:50**	**Solid**	**Mercury 08**	**03/22/17**	**03/22/17 19:55**	**170322L04**

Parameter	Result	RL	DF	Qualifiers
Mercury	ND	0.0794	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-16-272-2892**	**N/A**	**Solid**	**Mercury 08**	**03/22/17**	**03/22/17 19:00**	**170322L04**

Parameter	Result	RL	DF	Qualifiers
Mercury	ND	0.0833	1.00	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-20-0-1	**17-03-1154-1-B**	**03/14/17 15:34**	**Solid**	**GC/MS LL**	**03/16/17**	**03/16/17 12:54**	**170316L012**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	130	1.00	
Benzene	ND	5.1	1.00	
Bromobenzene	ND	5.1	1.00	
Bromochloromethane	ND	5.1	1.00	
Bromodichloromethane	ND	5.1	1.00	
Bromoform	ND	5.1	1.00	
Bromomethane	ND	25	1.00	
2-Butanone	ND	51	1.00	
n-Butylbenzene	ND	5.1	1.00	
sec-Butylbenzene	ND	5.1	1.00	
tert-Butylbenzene	ND	5.1	1.00	
Carbon Disulfide	ND	51	1.00	
Carbon Tetrachloride	ND	5.1	1.00	
Chlorobenzene	ND	5.1	1.00	
Chloroethane	ND	5.1	1.00	
Chloroform	ND	5.1	1.00	
Chloromethane	ND	25	1.00	
2-Chlorotoluene	ND	5.1	1.00	
4-Chlorotoluene	ND	5.1	1.00	
Dibromochloromethane	ND	5.1	1.00	
1,2-Dibromo-3-Chloropropane	ND	10	1.00	
1,2-Dibromoethane	ND	5.1	1.00	
Dibromomethane	ND	5.1	1.00	
1,2-Dichlorobenzene	ND	5.1	1.00	
1,3-Dichlorobenzene	ND	5.1	1.00	
1,4-Dichlorobenzene	ND	5.1	1.00	
Dichlorodifluoromethane	ND	5.1	1.00	
1,1-Dichloroethane	ND	5.1	1.00	
1,2-Dichloroethane	ND	5.1	1.00	
1,1-Dichloroethene	ND	5.1	1.00	
c-1,2-Dichloroethene	ND	5.1	1.00	
t-1,2-Dichloroethene	ND	5.1	1.00	
1,2-Dichloropropane	ND	5.1	1.00	
1,3-Dichloropropane	ND	5.1	1.00	
2,2-Dichloropropane	ND	5.1	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/15/17
1920 Main Street, Suite 300	Work Order:	17-03-1154
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/kg
Project: INFINEON - El Segundo / 0397848		Page 2 of 60

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	5.1	1.00	
c-1,3-Dichloropropene	ND	5.1	1.00	
t-1,3-Dichloropropene	ND	5.1	1.00	
Ethylbenzene	ND	5.1	1.00	
2-Hexanone	ND	51	1.00	
Isopropylbenzene	ND	5.1	1.00	
p-Isopropyltoluene	ND	5.1	1.00	
Methylene Chloride	ND	51	1.00	
4-Methyl-2-Pentanone	ND	51	1.00	
Naphthalene	ND	51	1.00	
n-Propylbenzene	ND	5.1	1.00	
Styrene	ND	5.1	1.00	
1,1,1,2-Tetrachloroethane	ND	5.1	1.00	
1,1,2,2-Tetrachloroethane	ND	5.1	1.00	
Tetrachloroethene	ND	5.1	1.00	
Toluene	ND	5.1	1.00	
1,2,3-Trichlorobenzene	ND	10	1.00	
1,2,4-Trichlorobenzene	ND	5.1	1.00	
1,1,1-Trichloroethane	ND	5.1	1.00	
1,1,2-Trichloroethane	ND	5.1	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	51	1.00	
Trichloroethene	ND	5.1	1.00	
1,2,3-Trichloropropane	ND	5.1	1.00	
1,2,4-Trimethylbenzene	ND	5.1	1.00	
Trichlorofluoromethane	ND	51	1.00	
1,3,5-Trimethylbenzene	ND	5.1	1.00	
Vinyl Acetate	ND	51	1.00	
Vinyl Chloride	ND	5.1	1.00	
p/m-Xylene	ND	5.1	1.00	
o-Xylene	ND	5.1	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	5.1	1.00	
Tert-Butyl Alcohol (TBA)	ND	51	1.00	
Diisopropyl Ether (DIPE)	ND	10	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	10	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	10	1.00	
Ethanol	ND	250	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	89	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/kg
Project: INFINEON - El Segundo / 0397848			Page 3 of 60

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	106	79-133	
1,2-Dichloroethane-d4	102	71-155	
Toluene-d8	101	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-11-0-1	**17-03-1154-2-B**	**03/14/17 15:44**	**Solid**	**GC/MS LL**	**03/16/17**	**03/16/17 14:50**	**170316L012**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	120	1.00	
Benzene	ND	5.0	1.00	
Bromobenzene	ND	5.0	1.00	
Bromochloromethane	ND	5.0	1.00	
Bromodichloromethane	ND	5.0	1.00	
Bromoform	ND	5.0	1.00	
Bromomethane	ND	25	1.00	
2-Butanone	ND	50	1.00	
n-Butylbenzene	ND	5.0	1.00	
sec-Butylbenzene	ND	5.0	1.00	
tert-Butylbenzene	ND	5.0	1.00	
Carbon Disulfide	ND	50	1.00	
Carbon Tetrachloride	ND	5.0	1.00	
Chlorobenzene	ND	5.0	1.00	
Chloroethane	ND	5.0	1.00	
Chloroform	ND	5.0	1.00	
Chloromethane	ND	25	1.00	
2-Chlorotoluene	ND	5.0	1.00	
4-Chlorotoluene	ND	5.0	1.00	
Dibromochloromethane	ND	5.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	9.9	1.00	
1,2-Dibromoethane	ND	5.0	1.00	
Dibromomethane	ND	5.0	1.00	
1,2-Dichlorobenzene	ND	5.0	1.00	
1,3-Dichlorobenzene	ND	5.0	1.00	
1,4-Dichlorobenzene	ND	5.0	1.00	
Dichlorodifluoromethane	ND	5.0	1.00	
1,1-Dichloroethane	ND	5.0	1.00	
1,2-Dichloroethane	ND	5.0	1.00	
1,1-Dichloroethene	ND	5.0	1.00	
c-1,2-Dichloroethene	ND	5.0	1.00	
t-1,2-Dichloroethene	ND	5.0	1.00	
1,2-Dichloropropane	ND	5.0	1.00	
1,3-Dichloropropane	ND	5.0	1.00	
2,2-Dichloropropane	ND	5.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/15/17
1920 Main Street, Suite 300	Work Order:	17-03-1154
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/kg
Project: INFINEON - El Segundo / 0397848		Page 5 of 60

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	5.0	1.00	
c-1,3-Dichloropropene	ND	5.0	1.00	
t-1,3-Dichloropropene	ND	5.0	1.00	
Ethylbenzene	ND	5.0	1.00	
2-Hexanone	ND	50	1.00	
Isopropylbenzene	ND	5.0	1.00	
p-Isopropyltoluene	ND	5.0	1.00	
Methylene Chloride	ND	50	1.00	
4-Methyl-2-Pentanone	ND	50	1.00	
Naphthalene	ND	50	1.00	
n-Propylbenzene	ND	5.0	1.00	
Styrene	ND	5.0	1.00	
1,1,1,2-Tetrachloroethane	ND	5.0	1.00	
1,1,2,2-Tetrachloroethane	ND	5.0	1.00	
Tetrachloroethene	ND	5.0	1.00	
Toluene	ND	5.0	1.00	
1,2,3-Trichlorobenzene	ND	9.9	1.00	
1,2,4-Trichlorobenzene	ND	5.0	1.00	
1,1,1-Trichloroethane	ND	5.0	1.00	
1,1,2-Trichloroethane	ND	5.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	50	1.00	
Trichloroethene	ND	5.0	1.00	
1,2,3-Trichloropropane	ND	5.0	1.00	
1,2,4-Trimethylbenzene	ND	5.0	1.00	
Trichlorofluoromethane	ND	50	1.00	
1,3,5-Trimethylbenzene	ND	5.0	1.00	
Vinyl Acetate	ND	50	1.00	
Vinyl Chloride	ND	5.0	1.00	
p/m-Xylene	ND	5.0	1.00	
o-Xylene	ND	5.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	5.0	1.00	
Tert-Butyl Alcohol (TBA)	ND	50	1.00	
Diisopropyl Ether (DIPE)	ND	9.9	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	9.9	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	9.9	1.00	
Ethanol	ND	250	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	88	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/kg
Project: INFINEON - El Segundo / 0397848			Page 6 of 60

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	105	79-133	
1,2-Dichloroethane-d4	102	71-155	
Toluene-d8	100	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-12-0-1	**17-03-1154-3-B**	**03/14/17 15:47**	**Solid**	**GC/MS LL**	**03/16/17**	**03/16/17 15:19**	**170316L012**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	130	1.00	
Benzene	ND	5.1	1.00	
Bromobenzene	ND	5.1	1.00	
Bromochloromethane	ND	5.1	1.00	
Bromodichloromethane	ND	5.1	1.00	
Bromoform	ND	5.1	1.00	
Bromomethane	ND	26	1.00	
2-Butanone	ND	51	1.00	
n-Butylbenzene	ND	5.1	1.00	
sec-Butylbenzene	ND	5.1	1.00	
tert-Butylbenzene	ND	5.1	1.00	
Carbon Disulfide	ND	51	1.00	
Carbon Tetrachloride	ND	5.1	1.00	
Chlorobenzene	ND	5.1	1.00	
Chloroethane	ND	5.1	1.00	
Chloroform	ND	5.1	1.00	
Chloromethane	ND	26	1.00	
2-Chlorotoluene	ND	5.1	1.00	
4-Chlorotoluene	ND	5.1	1.00	
Dibromochloromethane	ND	5.1	1.00	
1,2-Dibromo-3-Chloropropane	ND	10	1.00	
1,2-Dibromoethane	ND	5.1	1.00	
Dibromomethane	ND	5.1	1.00	
1,2-Dichlorobenzene	ND	5.1	1.00	
1,3-Dichlorobenzene	ND	5.1	1.00	
1,4-Dichlorobenzene	ND	5.1	1.00	
Dichlorodifluoromethane	ND	5.1	1.00	
1,1-Dichloroethane	ND	5.1	1.00	
1,2-Dichloroethane	ND	5.1	1.00	
1,1-Dichloroethene	ND	5.1	1.00	
c-1,2-Dichloroethene	ND	5.1	1.00	
t-1,2-Dichloroethene	ND	5.1	1.00	
1,2-Dichloropropane	ND	5.1	1.00	
1,3-Dichloropropane	ND	5.1	1.00	
2,2-Dichloropropane	ND	5.1	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/15/17
1920 Main Street, Suite 300	Work Order:	17-03-1154
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/kg
Project: INFINEON - El Segundo / 0397848		Page 8 of 60

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	5.1	1.00	
c-1,3-Dichloropropene	ND	5.1	1.00	
t-1,3-Dichloropropene	ND	5.1	1.00	
Ethylbenzene	ND	5.1	1.00	
2-Hexanone	ND	51	1.00	
Isopropylbenzene	ND	5.1	1.00	
p-Isopropyltoluene	ND	5.1	1.00	
Methylene Chloride	ND	51	1.00	
4-Methyl-2-Pentanone	ND	51	1.00	
Naphthalene	ND	51	1.00	
n-Propylbenzene	ND	5.1	1.00	
Styrene	ND	5.1	1.00	
1,1,1,2-Tetrachloroethane	ND	5.1	1.00	
1,1,2,2-Tetrachloroethane	ND	5.1	1.00	
Tetrachloroethene	ND	5.1	1.00	
Toluene	ND	5.1	1.00	
1,2,3-Trichlorobenzene	ND	10	1.00	
1,2,4-Trichlorobenzene	ND	5.1	1.00	
1,1,1-Trichloroethane	ND	5.1	1.00	
1,1,2-Trichloroethane	ND	5.1	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	51	1.00	
Trichloroethene	ND	5.1	1.00	
1,2,3-Trichloropropane	ND	5.1	1.00	
1,2,4-Trimethylbenzene	ND	5.1	1.00	
Trichlorofluoromethane	ND	51	1.00	
1,3,5-Trimethylbenzene	ND	5.1	1.00	
Vinyl Acetate	ND	51	1.00	
Vinyl Chloride	ND	5.1	1.00	
p/m-Xylene	ND	5.1	1.00	
o-Xylene	ND	5.1	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	5.1	1.00	
Tert-Butyl Alcohol (TBA)	ND	51	1.00	
Diisopropyl Ether (DIPE)	ND	10	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	10	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	10	1.00	
Ethanol	ND	260	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	88	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/kg
Project: INFINEON - El Segundo / 0397848			Page 9 of 60

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	110	79-133	
1,2-Dichloroethane-d4	107	71-155	
Toluene-d8	101	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-13-0-1	**17-03-1154-4-B**	**03/14/17 15:50**	**Solid**	**GC/MS LL**	**03/16/17**	**03/16/17 15:48**	**170316L012**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	120	1.00	
Benzene	ND	4.9	1.00	
Bromobenzene	ND	4.9	1.00	
Bromochloromethane	ND	4.9	1.00	
Bromodichloromethane	ND	4.9	1.00	
Bromoform	ND	4.9	1.00	
Bromomethane	ND	25	1.00	
2-Butanone	ND	49	1.00	
n-Butylbenzene	ND	4.9	1.00	
sec-Butylbenzene	ND	4.9	1.00	
tert-Butylbenzene	ND	4.9	1.00	
Carbon Disulfide	ND	49	1.00	
Carbon Tetrachloride	ND	4.9	1.00	
Chlorobenzene	ND	4.9	1.00	
Chloroethane	ND	4.9	1.00	
Chloroform	ND	4.9	1.00	
Chloromethane	ND	25	1.00	
2-Chlorotoluene	ND	4.9	1.00	
4-Chlorotoluene	ND	4.9	1.00	
Dibromochloromethane	ND	4.9	1.00	
1,2-Dibromo-3-Chloropropane	ND	9.9	1.00	
1,2-Dibromoethane	ND	4.9	1.00	
Dibromomethane	ND	4.9	1.00	
1,2-Dichlorobenzene	ND	4.9	1.00	
1,3-Dichlorobenzene	ND	4.9	1.00	
1,4-Dichlorobenzene	ND	4.9	1.00	
Dichlorodifluoromethane	ND	4.9	1.00	
1,1-Dichloroethane	ND	4.9	1.00	
1,2-Dichloroethane	ND	4.9	1.00	
1,1-Dichloroethene	ND	4.9	1.00	
c-1,2-Dichloroethene	ND	4.9	1.00	
t-1,2-Dichloroethene	ND	4.9	1.00	
1,2-Dichloropropane	ND	4.9	1.00	
1,3-Dichloropropane	ND	4.9	1.00	
2,2-Dichloropropane	ND	4.9	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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ERM-WEST	Date Received:	03/15/17
1920 Main Street, Suite 300	Work Order:	17-03-1154
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/kg
Project: INFINEON - El Segundo / 0397848		Page 11 of 60

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	4.9	1.00	
c-1,3-Dichloropropene	ND	4.9	1.00	
t-1,3-Dichloropropene	ND	4.9	1.00	
Ethylbenzene	ND	4.9	1.00	
2-Hexanone	ND	49	1.00	
Isopropylbenzene	ND	4.9	1.00	
p-Isopropyltoluene	ND	4.9	1.00	
Methylene Chloride	ND	49	1.00	
4-Methyl-2-Pentanone	ND	49	1.00	
Naphthalene	ND	49	1.00	
n-Propylbenzene	ND	4.9	1.00	
Styrene	ND	4.9	1.00	
1,1,1,2-Tetrachloroethane	ND	4.9	1.00	
1,1,2,2-Tetrachloroethane	ND	4.9	1.00	
Tetrachloroethene	ND	4.9	1.00	
Toluene	ND	4.9	1.00	
1,2,3-Trichlorobenzene	ND	9.9	1.00	
1,2,4-Trichlorobenzene	ND	4.9	1.00	
1,1,1-Trichloroethane	ND	4.9	1.00	
1,1,2-Trichloroethane	ND	4.9	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	49	1.00	
Trichloroethene	ND	4.9	1.00	
1,2,3-Trichloropropane	ND	4.9	1.00	
1,2,4-Trimethylbenzene	ND	4.9	1.00	
Trichlorofluoromethane	ND	49	1.00	
1,3,5-Trimethylbenzene	ND	4.9	1.00	
Vinyl Acetate	ND	49	1.00	
Vinyl Chloride	ND	4.9	1.00	
p/m-Xylene	ND	4.9	1.00	
o-Xylene	ND	4.9	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	4.9	1.00	
Tert-Butyl Alcohol (TBA)	ND	49	1.00	
Diisopropyl Ether (DIPE)	ND	9.9	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	9.9	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	9.9	1.00	
Ethanol	ND	250	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	92	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/15/17
1920 Main Street, Suite 300	Work Order:	17-03-1154
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/kg
Project: INFINEON - El Segundo / 0397848		Page 12 of 60

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	110	79-133	
1,2-Dichloroethane-d4	107	71-155	
Toluene-d8	101	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-10-1-2	**17-03-1154-5-B**	**03/14/17 15:54**	**Solid**	**GC/MS LL**	**03/16/17**	**03/16/17 16:18**	**170316L012**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	130	1.00	
Benzene	ND	5.0	1.00	
Bromobenzene	ND	5.0	1.00	
Bromochloromethane	ND	5.0	1.00	
Bromodichloromethane	ND	5.0	1.00	
Bromoform	ND	5.0	1.00	
Bromomethane	ND	25	1.00	
2-Butanone	ND	50	1.00	
n-Butylbenzene	ND	5.0	1.00	
sec-Butylbenzene	ND	5.0	1.00	
tert-Butylbenzene	ND	5.0	1.00	
Carbon Disulfide	ND	50	1.00	
Carbon Tetrachloride	ND	5.0	1.00	
Chlorobenzene	ND	5.0	1.00	
Chloroethane	ND	5.0	1.00	
Chloroform	ND	5.0	1.00	
Chloromethane	ND	25	1.00	
2-Chlorotoluene	ND	5.0	1.00	
4-Chlorotoluene	ND	5.0	1.00	
Dibromochloromethane	ND	5.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	10	1.00	
1,2-Dibromoethane	ND	5.0	1.00	
Dibromomethane	ND	5.0	1.00	
1,2-Dichlorobenzene	ND	5.0	1.00	
1,3-Dichlorobenzene	ND	5.0	1.00	
1,4-Dichlorobenzene	ND	5.0	1.00	
Dichlorodifluoromethane	ND	5.0	1.00	
1,1-Dichloroethane	ND	5.0	1.00	
1,2-Dichloroethane	ND	5.0	1.00	
1,1-Dichloroethene	ND	5.0	1.00	
c-1,2-Dichloroethene	ND	5.0	1.00	
t-1,2-Dichloroethene	ND	5.0	1.00	
1,2-Dichloropropane	ND	5.0	1.00	
1,3-Dichloropropane	ND	5.0	1.00	
2,2-Dichloropropane	ND	5.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/15/17
1920 Main Street, Suite 300	Work Order:	17-03-1154
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/kg
Project: INFINEON - El Segundo / 0397848		Page 14 of 60

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	5.0	1.00	
c-1,3-Dichloropropene	ND	5.0	1.00	
t-1,3-Dichloropropene	ND	5.0	1.00	
Ethylbenzene	ND	5.0	1.00	
2-Hexanone	ND	50	1.00	
Isopropylbenzene	ND	5.0	1.00	
p-Isopropyltoluene	ND	5.0	1.00	
Methylene Chloride	ND	50	1.00	
4-Methyl-2-Pentanone	ND	50	1.00	
Naphthalene	ND	50	1.00	
n-Propylbenzene	ND	5.0	1.00	
Styrene	ND	5.0	1.00	
1,1,1,2-Tetrachloroethane	ND	5.0	1.00	
1,1,2,2-Tetrachloroethane	ND	5.0	1.00	
Tetrachloroethene	ND	5.0	1.00	
Toluene	ND	5.0	1.00	
1,2,3-Trichlorobenzene	ND	10	1.00	
1,2,4-Trichlorobenzene	ND	5.0	1.00	
1,1,1-Trichloroethane	ND	5.0	1.00	
1,1,2-Trichloroethane	ND	5.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	50	1.00	
Trichloroethene	ND	5.0	1.00	
1,2,3-Trichloropropane	ND	5.0	1.00	
1,2,4-Trimethylbenzene	ND	5.0	1.00	
Trichlorofluoromethane	ND	50	1.00	
1,3,5-Trimethylbenzene	ND	5.0	1.00	
Vinyl Acetate	ND	50	1.00	
Vinyl Chloride	ND	5.0	1.00	
p/m-Xylene	ND	5.0	1.00	
o-Xylene	ND	5.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	5.0	1.00	
Tert-Butyl Alcohol (TBA)	ND	50	1.00	
Diisopropyl Ether (DIPE)	ND	10	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	10	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	10	1.00	
Ethanol	ND	250	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	89	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/kg
Project: INFINEON - El Segundo / 0397848			Page 15 of 60

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	106	79-133	
1,2-Dichloroethane-d4	105	71-155	
Toluene-d8	101	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-1-0-1	**17-03-1154-6-B**	**03/14/17 15:57**	**Solid**	**GC/MS LL**	**03/16/17**	**03/16/17 16:47**	**170316L012**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	130	1.00	
Benzene	ND	5.2	1.00	
Bromobenzene	ND	5.2	1.00	
Bromochloromethane	ND	5.2	1.00	
Bromodichloromethane	ND	5.2	1.00	
Bromoform	ND	5.2	1.00	
Bromomethane	ND	26	1.00	
2-Butanone	ND	52	1.00	
n-Butylbenzene	ND	5.2	1.00	
sec-Butylbenzene	ND	5.2	1.00	
tert-Butylbenzene	ND	5.2	1.00	
Carbon Disulfide	ND	52	1.00	
Carbon Tetrachloride	ND	5.2	1.00	
Chlorobenzene	ND	5.2	1.00	
Chloroethane	ND	5.2	1.00	
Chloroform	ND	5.2	1.00	
Chloromethane	ND	26	1.00	
2-Chlorotoluene	ND	5.2	1.00	
4-Chlorotoluene	ND	5.2	1.00	
Dibromochloromethane	ND	5.2	1.00	
1,2-Dibromo-3-Chloropropane	ND	10	1.00	
1,2-Dibromoethane	ND	5.2	1.00	
Dibromomethane	ND	5.2	1.00	
1,2-Dichlorobenzene	ND	5.2	1.00	
1,3-Dichlorobenzene	ND	5.2	1.00	
1,4-Dichlorobenzene	ND	5.2	1.00	
Dichlorodifluoromethane	ND	5.2	1.00	
1,1-Dichloroethane	ND	5.2	1.00	
1,2-Dichloroethane	ND	5.2	1.00	
1,1-Dichloroethene	ND	5.2	1.00	
c-1,2-Dichloroethene	ND	5.2	1.00	
t-1,2-Dichloroethene	ND	5.2	1.00	
1,2-Dichloropropane	ND	5.2	1.00	
1,3-Dichloropropane	ND	5.2	1.00	
2,2-Dichloropropane	ND	5.2	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/15/17
1920 Main Street, Suite 300	Work Order:	17-03-1154
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/kg
Project: INFINEON - El Segundo / 0397848		Page 17 of 60

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	5.2	1.00	
c-1,3-Dichloropropene	ND	5.2	1.00	
t-1,3-Dichloropropene	ND	5.2	1.00	
Ethylbenzene	ND	5.2	1.00	
2-Hexanone	ND	52	1.00	
Isopropylbenzene	ND	5.2	1.00	
p-Isopropyltoluene	ND	5.2	1.00	
Methylene Chloride	ND	52	1.00	
4-Methyl-2-Pentanone	ND	52	1.00	
Naphthalene	ND	52	1.00	
n-Propylbenzene	ND	5.2	1.00	
Styrene	ND	5.2	1.00	
1,1,1,2-Tetrachloroethane	ND	5.2	1.00	
1,1,2,2-Tetrachloroethane	ND	5.2	1.00	
Tetrachloroethene	ND	5.2	1.00	
Toluene	ND	5.2	1.00	
1,2,3-Trichlorobenzene	ND	10	1.00	
1,2,4-Trichlorobenzene	ND	5.2	1.00	
1,1,1-Trichloroethane	ND	5.2	1.00	
1,1,2-Trichloroethane	ND	5.2	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	52	1.00	
Trichloroethene	ND	5.2	1.00	
1,2,3-Trichloropropane	ND	5.2	1.00	
1,2,4-Trimethylbenzene	ND	5.2	1.00	
Trichlorofluoromethane	ND	52	1.00	
1,3,5-Trimethylbenzene	ND	5.2	1.00	
Vinyl Acetate	ND	52	1.00	
Vinyl Chloride	ND	5.2	1.00	
p/m-Xylene	ND	5.2	1.00	
o-Xylene	ND	5.2	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	5.2	1.00	
Tert-Butyl Alcohol (TBA)	ND	52	1.00	
Diisopropyl Ether (DIPE)	ND	10	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	10	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	10	1.00	
Ethanol	ND	260	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	89	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/15/17
1920 Main Street, Suite 300	Work Order:	17-03-1154
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/kg
Project: INFINEON - El Segundo / 0397848		Page 18 of 60

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	109	79-133	
1,2-Dichloroethane-d4	108	71-155	
Toluene-d8	100	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-7-0-1	**17-03-1154-7-B**	**03/14/17 16:01**	**Solid**	**GC/MS LL**	**03/16/17**	**03/16/17 17:16**	**170316L012**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	130	1.00	
Benzene	ND	5.1	1.00	
Bromobenzene	ND	5.1	1.00	
Bromochloromethane	ND	5.1	1.00	
Bromodichloromethane	ND	5.1	1.00	
Bromoform	ND	5.1	1.00	
Bromomethane	ND	26	1.00	
2-Butanone	ND	51	1.00	
n-Butylbenzene	ND	5.1	1.00	
sec-Butylbenzene	ND	5.1	1.00	
tert-Butylbenzene	ND	5.1	1.00	
Carbon Disulfide	ND	51	1.00	
Carbon Tetrachloride	ND	5.1	1.00	
Chlorobenzene	ND	5.1	1.00	
Chloroethane	ND	5.1	1.00	
Chloroform	ND	5.1	1.00	
Chloromethane	ND	26	1.00	
2-Chlorotoluene	ND	5.1	1.00	
4-Chlorotoluene	ND	5.1	1.00	
Dibromochloromethane	ND	5.1	1.00	
1,2-Dibromo-3-Chloropropane	ND	10	1.00	
1,2-Dibromoethane	ND	5.1	1.00	
Dibromomethane	ND	5.1	1.00	
1,2-Dichlorobenzene	ND	5.1	1.00	
1,3-Dichlorobenzene	ND	5.1	1.00	
1,4-Dichlorobenzene	ND	5.1	1.00	
Dichlorodifluoromethane	ND	5.1	1.00	
1,1-Dichloroethane	ND	5.1	1.00	
1,2-Dichloroethane	ND	5.1	1.00	
1,1-Dichloroethene	ND	5.1	1.00	
c-1,2-Dichloroethene	ND	5.1	1.00	
t-1,2-Dichloroethene	ND	5.1	1.00	
1,2-Dichloropropane	ND	5.1	1.00	
1,3-Dichloropropane	ND	5.1	1.00	
2,2-Dichloropropane	ND	5.1	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/15/17
1920 Main Street, Suite 300	Work Order:	17-03-1154
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/kg
Project: INFINEON - El Segundo / 0397848		Page 20 of 60

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	5.1	1.00	
c-1,3-Dichloropropene	ND	5.1	1.00	
t-1,3-Dichloropropene	ND	5.1	1.00	
Ethylbenzene	ND	5.1	1.00	
2-Hexanone	ND	51	1.00	
Isopropylbenzene	ND	5.1	1.00	
p-Isopropyltoluene	ND	5.1	1.00	
Methylene Chloride	ND	51	1.00	
4-Methyl-2-Pentanone	ND	51	1.00	
Naphthalene	ND	51	1.00	
n-Propylbenzene	ND	5.1	1.00	
Styrene	ND	5.1	1.00	
1,1,1,2-Tetrachloroethane	ND	5.1	1.00	
1,1,2,2-Tetrachloroethane	ND	5.1	1.00	
Tetrachloroethene	ND	5.1	1.00	
Toluene	ND	5.1	1.00	
1,2,3-Trichlorobenzene	ND	10	1.00	
1,2,4-Trichlorobenzene	ND	5.1	1.00	
1,1,1-Trichloroethane	ND	5.1	1.00	
1,1,2-Trichloroethane	ND	5.1	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	51	1.00	
Trichloroethene	ND	5.1	1.00	
1,2,3-Trichloropropane	ND	5.1	1.00	
1,2,4-Trimethylbenzene	ND	5.1	1.00	
Trichlorofluoromethane	ND	51	1.00	
1,3,5-Trimethylbenzene	ND	5.1	1.00	
Vinyl Acetate	ND	51	1.00	
Vinyl Chloride	ND	5.1	1.00	
p/m-Xylene	ND	5.1	1.00	
o-Xylene	ND	5.1	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	5.1	1.00	
Tert-Butyl Alcohol (TBA)	ND	51	1.00	
Diisopropyl Ether (DIPE)	ND	10	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	10	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	10	1.00	
Ethanol	ND	260	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	88	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/15/17
1920 Main Street, Suite 300	Work Order:	17-03-1154
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/kg
Project: INFINEON - El Segundo / 0397848		Page 21 of 60

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	110	79-133	
1,2-Dichloroethane-d4	105	71-155	
Toluene-d8	101	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-5-0-1	**17-03-1154-8-B**	**03/14/17 16:04**	**Solid**	**GC/MS LL**	**03/16/17**	**03/16/17 17:45**	**170316L012**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	130	1.00	
Benzene	ND	5.0	1.00	
Bromobenzene	ND	5.0	1.00	
Bromochloromethane	ND	5.0	1.00	
Bromodichloromethane	ND	5.0	1.00	
Bromoform	ND	5.0	1.00	
Bromomethane	ND	25	1.00	
2-Butanone	ND	50	1.00	
n-Butylbenzene	ND	5.0	1.00	
sec-Butylbenzene	ND	5.0	1.00	
tert-Butylbenzene	ND	5.0	1.00	
Carbon Disulfide	ND	50	1.00	
Carbon Tetrachloride	ND	5.0	1.00	
Chlorobenzene	ND	5.0	1.00	
Chloroethane	ND	5.0	1.00	
Chloroform	ND	5.0	1.00	
Chloromethane	ND	25	1.00	
2-Chlorotoluene	ND	5.0	1.00	
4-Chlorotoluene	ND	5.0	1.00	
Dibromochloromethane	ND	5.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	10	1.00	
1,2-Dibromoethane	ND	5.0	1.00	
Dibromomethane	ND	5.0	1.00	
1,2-Dichlorobenzene	ND	5.0	1.00	
1,3-Dichlorobenzene	ND	5.0	1.00	
1,4-Dichlorobenzene	ND	5.0	1.00	
Dichlorodifluoromethane	ND	5.0	1.00	
1,1-Dichloroethane	ND	5.0	1.00	
1,2-Dichloroethane	ND	5.0	1.00	
1,1-Dichloroethene	ND	5.0	1.00	
c-1,2-Dichloroethene	ND	5.0	1.00	
t-1,2-Dichloroethene	ND	5.0	1.00	
1,2-Dichloropropane	ND	5.0	1.00	
1,3-Dichloropropane	ND	5.0	1.00	
2,2-Dichloropropane	ND	5.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/15/17
1920 Main Street, Suite 300	Work Order:	17-03-1154
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/kg
Project: INFINEON - El Segundo / 0397848		Page 23 of 60

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	5.0	1.00	
c-1,3-Dichloropropene	ND	5.0	1.00	
t-1,3-Dichloropropene	ND	5.0	1.00	
Ethylbenzene	ND	5.0	1.00	
2-Hexanone	ND	50	1.00	
Isopropylbenzene	ND	5.0	1.00	
p-Isopropyltoluene	ND	5.0	1.00	
Methylene Chloride	ND	50	1.00	
4-Methyl-2-Pentanone	ND	50	1.00	
Naphthalene	ND	50	1.00	
n-Propylbenzene	ND	5.0	1.00	
Styrene	ND	5.0	1.00	
1,1,1,2-Tetrachloroethane	ND	5.0	1.00	
1,1,2,2-Tetrachloroethane	ND	5.0	1.00	
Tetrachloroethene	ND	5.0	1.00	
Toluene	ND	5.0	1.00	
1,2,3-Trichlorobenzene	ND	10	1.00	
1,2,4-Trichlorobenzene	ND	5.0	1.00	
1,1,1-Trichloroethane	ND	5.0	1.00	
1,1,2-Trichloroethane	ND	5.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	50	1.00	
Trichloroethene	ND	5.0	1.00	
1,2,3-Trichloropropane	ND	5.0	1.00	
1,2,4-Trimethylbenzene	ND	5.0	1.00	
Trichlorofluoromethane	ND	50	1.00	
1,3,5-Trimethylbenzene	ND	5.0	1.00	
Vinyl Acetate	ND	50	1.00	
Vinyl Chloride	ND	5.0	1.00	
p/m-Xylene	ND	5.0	1.00	
o-Xylene	ND	5.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	5.0	1.00	
Tert-Butyl Alcohol (TBA)	ND	50	1.00	
Diisopropyl Ether (DIPE)	ND	10	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	10	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	10	1.00	
Ethanol	ND	250	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	89	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/kg
Project: INFINEON - El Segundo / 0397848			Page 24 of 60

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	109	79-133	
1,2-Dichloroethane-d4	106	71-155	
Toluene-d8	102	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-6-0-1	**17-03-1154-9-B**	**03/14/17 16:11**	**Solid**	**GC/MS LL**	**03/16/17**	**03/16/17 18:14**	**170316L012**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	130	1.00	
Benzene	ND	5.1	1.00	
Bromobenzene	ND	5.1	1.00	
Bromochloromethane	ND	5.1	1.00	
Bromodichloromethane	ND	5.1	1.00	
Bromoform	ND	5.1	1.00	
Bromomethane	ND	26	1.00	
2-Butanone	ND	51	1.00	
n-Butylbenzene	ND	5.1	1.00	
sec-Butylbenzene	ND	5.1	1.00	
tert-Butylbenzene	ND	5.1	1.00	
Carbon Disulfide	ND	51	1.00	
Carbon Tetrachloride	ND	5.1	1.00	
Chlorobenzene	ND	5.1	1.00	
Chloroethane	ND	5.1	1.00	
Chloroform	ND	5.1	1.00	
Chloromethane	ND	26	1.00	
2-Chlorotoluene	ND	5.1	1.00	
4-Chlorotoluene	ND	5.1	1.00	
Dibromochloromethane	ND	5.1	1.00	
1,2-Dibromo-3-Chloropropane	ND	10	1.00	
1,2-Dibromoethane	ND	5.1	1.00	
Dibromomethane	ND	5.1	1.00	
1,2-Dichlorobenzene	ND	5.1	1.00	
1,3-Dichlorobenzene	ND	5.1	1.00	
1,4-Dichlorobenzene	ND	5.1	1.00	
Dichlorodifluoromethane	ND	5.1	1.00	
1,1-Dichloroethane	ND	5.1	1.00	
1,2-Dichloroethane	ND	5.1	1.00	
1,1-Dichloroethene	ND	5.1	1.00	
c-1,2-Dichloroethene	ND	5.1	1.00	
t-1,2-Dichloroethene	ND	5.1	1.00	
1,2-Dichloropropane	ND	5.1	1.00	
1,3-Dichloropropane	ND	5.1	1.00	
2,2-Dichloropropane	ND	5.1	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/15/17
1920 Main Street, Suite 300	Work Order:	17-03-1154
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/kg
Project: INFINEON - El Segundo / 0397848		Page 26 of 60

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	5.1	1.00	
c-1,3-Dichloropropene	ND	5.1	1.00	
t-1,3-Dichloropropene	ND	5.1	1.00	
Ethylbenzene	ND	5.1	1.00	
2-Hexanone	ND	51	1.00	
Isopropylbenzene	ND	5.1	1.00	
p-Isopropyltoluene	ND	5.1	1.00	
Methylene Chloride	ND	51	1.00	
4-Methyl-2-Pentanone	ND	51	1.00	
Naphthalene	ND	51	1.00	
n-Propylbenzene	ND	5.1	1.00	
Styrene	ND	5.1	1.00	
1,1,1,2-Tetrachloroethane	ND	5.1	1.00	
1,1,2,2-Tetrachloroethane	ND	5.1	1.00	
Tetrachloroethene	ND	5.1	1.00	
Toluene	ND	5.1	1.00	
1,2,3-Trichlorobenzene	ND	10	1.00	
1,2,4-Trichlorobenzene	ND	5.1	1.00	
1,1,1-Trichloroethane	ND	5.1	1.00	
1,1,2-Trichloroethane	ND	5.1	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	51	1.00	
Trichloroethene	ND	5.1	1.00	
1,2,3-Trichloropropane	ND	5.1	1.00	
1,2,4-Trimethylbenzene	ND	5.1	1.00	
Trichlorofluoromethane	ND	51	1.00	
1,3,5-Trimethylbenzene	ND	5.1	1.00	
Vinyl Acetate	ND	51	1.00	
Vinyl Chloride	ND	5.1	1.00	
p/m-Xylene	ND	5.1	1.00	
o-Xylene	ND	5.1	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	5.1	1.00	
Tert-Butyl Alcohol (TBA)	ND	51	1.00	
Diisopropyl Ether (DIPE)	ND	10	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	10	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	10	1.00	
Ethanol	ND	260	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	87	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/kg
Project: INFINEON - El Segundo / 0397848			Page 27 of 60

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	110	79-133	
1,2-Dichloroethane-d4	108	71-155	
Toluene-d8	101	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-2-1-2	**17-03-1154-10-B**	**03/14/17 16:15**	**Solid**	**GC/MS LL**	**03/16/17**	**03/17/17 01:30**	**170316L066**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	130	1.00	
Benzene	ND	5.1	1.00	
Bromobenzene	ND	5.1	1.00	
Bromochloromethane	ND	5.1	1.00	
Bromodichloromethane	ND	5.1	1.00	
Bromoform	ND	5.1	1.00	
Bromomethane	ND	26	1.00	
2-Butanone	ND	51	1.00	
n-Butylbenzene	ND	5.1	1.00	
sec-Butylbenzene	ND	5.1	1.00	
tert-Butylbenzene	ND	5.1	1.00	
Carbon Disulfide	ND	51	1.00	
Carbon Tetrachloride	ND	5.1	1.00	
Chlorobenzene	ND	5.1	1.00	
Chloroethane	ND	5.1	1.00	
Chloroform	ND	5.1	1.00	
Chloromethane	ND	26	1.00	
2-Chlorotoluene	ND	5.1	1.00	
4-Chlorotoluene	ND	5.1	1.00	
Dibromochloromethane	ND	5.1	1.00	
1,2-Dibromo-3-Chloropropane	ND	10	1.00	
1,2-Dibromoethane	ND	5.1	1.00	
Dibromomethane	ND	5.1	1.00	
1,2-Dichlorobenzene	ND	5.1	1.00	
1,3-Dichlorobenzene	ND	5.1	1.00	
1,4-Dichlorobenzene	ND	5.1	1.00	
Dichlorodifluoromethane	ND	5.1	1.00	
1,1-Dichloroethane	ND	5.1	1.00	
1,2-Dichloroethane	ND	5.1	1.00	
1,1-Dichloroethene	ND	5.1	1.00	
c-1,2-Dichloroethene	ND	5.1	1.00	
t-1,2-Dichloroethene	ND	5.1	1.00	
1,2-Dichloropropane	ND	5.1	1.00	
1,3-Dichloropropane	ND	5.1	1.00	
2,2-Dichloropropane	ND	5.1	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/15/17
1920 Main Street, Suite 300	Work Order:	17-03-1154
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/kg
Project: INFINEON - El Segundo / 0397848		Page 29 of 60

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	5.1	1.00	
c-1,3-Dichloropropene	ND	5.1	1.00	
t-1,3-Dichloropropene	ND	5.1	1.00	
Ethylbenzene	ND	5.1	1.00	
2-Hexanone	ND	51	1.00	
Isopropylbenzene	ND	5.1	1.00	
p-Isopropyltoluene	ND	5.1	1.00	
Methylene Chloride	ND	51	1.00	
4-Methyl-2-Pentanone	ND	51	1.00	
Naphthalene	ND	51	1.00	
n-Propylbenzene	ND	5.1	1.00	
Styrene	ND	5.1	1.00	
1,1,1,2-Tetrachloroethane	ND	5.1	1.00	
1,1,2,2-Tetrachloroethane	ND	5.1	1.00	
Tetrachloroethene	ND	5.1	1.00	
Toluene	ND	5.1	1.00	
1,2,3-Trichlorobenzene	ND	10	1.00	
1,2,4-Trichlorobenzene	ND	5.1	1.00	
1,1,1-Trichloroethane	ND	5.1	1.00	
1,1,2-Trichloroethane	ND	5.1	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	51	1.00	
Trichloroethene	ND	5.1	1.00	
1,2,3-Trichloropropane	ND	5.1	1.00	
1,2,4-Trimethylbenzene	ND	5.1	1.00	
Trichlorofluoromethane	ND	51	1.00	
1,3,5-Trimethylbenzene	ND	5.1	1.00	
Vinyl Acetate	ND	51	1.00	
Vinyl Chloride	ND	5.1	1.00	
p/m-Xylene	ND	5.1	1.00	
o-Xylene	ND	5.1	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	5.1	1.00	
Tert-Butyl Alcohol (TBA)	ND	51	1.00	
Diisopropyl Ether (DIPE)	ND	10	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	10	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	10	1.00	
Ethanol	ND	260	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	87	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/kg
Project: INFINEON - El Segundo / 0397848			Page 30 of 60

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	109	79-133	
1,2-Dichloroethane-d4	105	71-155	
Toluene-d8	101	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-3-0-1	**17-03-1154-11-B**	**03/14/17 16:18**	**Solid**	**GC/MS LL**	**03/16/17**	**03/16/17 23:34**	**170316L066**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	120	1.00	
Benzene	ND	5.0	1.00	
Bromobenzene	ND	5.0	1.00	
Bromochloromethane	ND	5.0	1.00	
Bromodichloromethane	ND	5.0	1.00	
Bromoform	ND	5.0	1.00	
Bromomethane	ND	25	1.00	
2-Butanone	ND	50	1.00	
n-Butylbenzene	ND	5.0	1.00	
sec-Butylbenzene	ND	5.0	1.00	
tert-Butylbenzene	ND	5.0	1.00	
Carbon Disulfide	ND	50	1.00	
Carbon Tetrachloride	ND	5.0	1.00	
Chlorobenzene	ND	5.0	1.00	
Chloroethane	ND	5.0	1.00	
Chloroform	ND	5.0	1.00	
Chloromethane	ND	25	1.00	
2-Chlorotoluene	ND	5.0	1.00	
4-Chlorotoluene	ND	5.0	1.00	
Dibromochloromethane	ND	5.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	10	1.00	
1,2-Dibromoethane	ND	5.0	1.00	
Dibromomethane	ND	5.0	1.00	
1,2-Dichlorobenzene	ND	5.0	1.00	
1,3-Dichlorobenzene	ND	5.0	1.00	
1,4-Dichlorobenzene	ND	5.0	1.00	
Dichlorodifluoromethane	ND	5.0	1.00	
1,1-Dichloroethane	ND	5.0	1.00	
1,2-Dichloroethane	ND	5.0	1.00	
1,1-Dichloroethene	ND	5.0	1.00	
c-1,2-Dichloroethene	ND	5.0	1.00	
t-1,2-Dichloroethene	ND	5.0	1.00	
1,2-Dichloropropane	ND	5.0	1.00	
1,3-Dichloropropane	ND	5.0	1.00	
2,2-Dichloropropane	ND	5.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/kg
Project: INFINEON - El Segundo / 0397848			Page 32 of 60

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	5.0	1.00	
c-1,3-Dichloropropene	ND	5.0	1.00	
t-1,3-Dichloropropene	ND	5.0	1.00	
Ethylbenzene	ND	5.0	1.00	
2-Hexanone	ND	50	1.00	
Isopropylbenzene	ND	5.0	1.00	
p-Isopropyltoluene	ND	5.0	1.00	
Methylene Chloride	ND	50	1.00	
4-Methyl-2-Pentanone	ND	50	1.00	
Naphthalene	ND	50	1.00	
n-Propylbenzene	ND	5.0	1.00	
Styrene	ND	5.0	1.00	
1,1,1,2-Tetrachloroethane	ND	5.0	1.00	
1,1,2,2-Tetrachloroethane	ND	5.0	1.00	
Tetrachloroethene	ND	5.0	1.00	
Toluene	ND	5.0	1.00	
1,2,3-Trichlorobenzene	ND	10	1.00	
1,2,4-Trichlorobenzene	ND	5.0	1.00	
1,1,1-Trichloroethane	ND	5.0	1.00	
1,1,2-Trichloroethane	ND	5.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	50	1.00	
Trichloroethene	ND	5.0	1.00	
1,2,3-Trichloropropane	ND	5.0	1.00	
1,2,4-Trimethylbenzene	ND	5.0	1.00	
Trichlorofluoromethane	ND	50	1.00	
1,3,5-Trimethylbenzene	ND	5.0	1.00	
Vinyl Acetate	ND	50	1.00	
Vinyl Chloride	ND	5.0	1.00	
p/m-Xylene	ND	5.0	1.00	
o-Xylene	ND	5.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	5.0	1.00	
Tert-Butyl Alcohol (TBA)	ND	50	1.00	
Diisopropyl Ether (DIPE)	ND	10	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	10	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	10	1.00	
Ethanol	ND	250	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	88	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/kg
Project: INFINEON - El Segundo / 0397848			Page 33 of 60

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	110	79-133	
1,2-Dichloroethane-d4	106	71-155	
Toluene-d8	101	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-9-0-1	**17-03-1154-12-B**	**03/14/17 16:22**	**Solid**	**GC/MS LL**	**03/16/17**	**03/17/17 01:59**	**170316L066**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	120	1.00	
Benzene	ND	5.0	1.00	
Bromobenzene	ND	5.0	1.00	
Bromochloromethane	ND	5.0	1.00	
Bromodichloromethane	ND	5.0	1.00	
Bromoform	ND	5.0	1.00	
Bromomethane	ND	25	1.00	
2-Butanone	ND	50	1.00	
n-Butylbenzene	ND	5.0	1.00	
sec-Butylbenzene	ND	5.0	1.00	
tert-Butylbenzene	ND	5.0	1.00	
Carbon Disulfide	ND	50	1.00	
Carbon Tetrachloride	ND	5.0	1.00	
Chlorobenzene	ND	5.0	1.00	
Chloroethane	ND	5.0	1.00	
Chloroform	ND	5.0	1.00	
Chloromethane	ND	25	1.00	
2-Chlorotoluene	ND	5.0	1.00	
4-Chlorotoluene	ND	5.0	1.00	
Dibromochloromethane	ND	5.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	9.9	1.00	
1,2-Dibromoethane	ND	5.0	1.00	
Dibromomethane	ND	5.0	1.00	
1,2-Dichlorobenzene	ND	5.0	1.00	
1,3-Dichlorobenzene	ND	5.0	1.00	
1,4-Dichlorobenzene	ND	5.0	1.00	
Dichlorodifluoromethane	ND	5.0	1.00	
1,1-Dichloroethane	ND	5.0	1.00	
1,2-Dichloroethane	ND	5.0	1.00	
1,1-Dichloroethene	ND	5.0	1.00	
c-1,2-Dichloroethene	ND	5.0	1.00	
t-1,2-Dichloroethene	ND	5.0	1.00	
1,2-Dichloropropane	ND	5.0	1.00	
1,3-Dichloropropane	ND	5.0	1.00	
2,2-Dichloropropane	ND	5.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/15/17
1920 Main Street, Suite 300	Work Order:	17-03-1154
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/kg
Project: INFINEON - El Segundo / 0397848		Page 35 of 60

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	5.0	1.00	
c-1,3-Dichloropropene	ND	5.0	1.00	
t-1,3-Dichloropropene	ND	5.0	1.00	
Ethylbenzene	ND	5.0	1.00	
2-Hexanone	ND	50	1.00	
Isopropylbenzene	ND	5.0	1.00	
p-Isopropyltoluene	ND	5.0	1.00	
Methylene Chloride	ND	50	1.00	
4-Methyl-2-Pentanone	ND	50	1.00	
Naphthalene	ND	50	1.00	
n-Propylbenzene	ND	5.0	1.00	
Styrene	ND	5.0	1.00	
1,1,1,2-Tetrachloroethane	ND	5.0	1.00	
1,1,2,2-Tetrachloroethane	ND	5.0	1.00	
Tetrachloroethene	ND	5.0	1.00	
Toluene	ND	5.0	1.00	
1,2,3-Trichlorobenzene	ND	9.9	1.00	
1,2,4-Trichlorobenzene	ND	5.0	1.00	
1,1,1-Trichloroethane	ND	5.0	1.00	
1,1,2-Trichloroethane	ND	5.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	50	1.00	
Trichloroethene	ND	5.0	1.00	
1,2,3-Trichloropropane	ND	5.0	1.00	
1,2,4-Trimethylbenzene	ND	5.0	1.00	
Trichlorofluoromethane	ND	50	1.00	
1,3,5-Trimethylbenzene	ND	5.0	1.00	
Vinyl Acetate	ND	50	1.00	
Vinyl Chloride	ND	5.0	1.00	
p/m-Xylene	ND	5.0	1.00	
o-Xylene	ND	5.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	5.0	1.00	
Tert-Butyl Alcohol (TBA)	ND	50	1.00	
Diisopropyl Ether (DIPE)	ND	9.9	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	9.9	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	9.9	1.00	
Ethanol	ND	250	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	88	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/15/17
1920 Main Street, Suite 300	Work Order:	17-03-1154
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/kg
Project: INFINEON - El Segundo / 0397848		Page 36 of 60

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	112	79-133	
1,2-Dichloroethane-d4	109	71-155	
Toluene-d8	101	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-4-0-1	**17-03-1154-13-B**	**03/14/17 16:25**	**Solid**	**GC/MS LL**	**03/16/17**	**03/17/17 02:28**	**170316L066**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	130	1.00	
Benzene	ND	5.1	1.00	
Bromobenzene	ND	5.1	1.00	
Bromochloromethane	ND	5.1	1.00	
Bromodichloromethane	ND	5.1	1.00	
Bromoform	ND	5.1	1.00	
Bromomethane	ND	26	1.00	
2-Butanone	ND	51	1.00	
n-Butylbenzene	ND	5.1	1.00	
sec-Butylbenzene	ND	5.1	1.00	
tert-Butylbenzene	ND	5.1	1.00	
Carbon Disulfide	ND	51	1.00	
Carbon Tetrachloride	ND	5.1	1.00	
Chlorobenzene	ND	5.1	1.00	
Chloroethane	ND	5.1	1.00	
Chloroform	ND	5.1	1.00	
Chloromethane	ND	26	1.00	
2-Chlorotoluene	ND	5.1	1.00	
4-Chlorotoluene	ND	5.1	1.00	
Dibromochloromethane	ND	5.1	1.00	
1,2-Dibromo-3-Chloropropane	ND	10	1.00	
1,2-Dibromoethane	ND	5.1	1.00	
Dibromomethane	ND	5.1	1.00	
1,2-Dichlorobenzene	ND	5.1	1.00	
1,3-Dichlorobenzene	ND	5.1	1.00	
1,4-Dichlorobenzene	ND	5.1	1.00	
Dichlorodifluoromethane	ND	5.1	1.00	
1,1-Dichloroethane	ND	5.1	1.00	
1,2-Dichloroethane	ND	5.1	1.00	
1,1-Dichloroethene	ND	5.1	1.00	
c-1,2-Dichloroethene	ND	5.1	1.00	
t-1,2-Dichloroethene	ND	5.1	1.00	
1,2-Dichloropropane	ND	5.1	1.00	
1,3-Dichloropropane	ND	5.1	1.00	
2,2-Dichloropropane	ND	5.1	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/15/17
1920 Main Street, Suite 300	Work Order:	17-03-1154
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/kg
Project: INFINEON - El Segundo / 0397848		Page 38 of 60

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	5.1	1.00	
c-1,3-Dichloropropene	ND	5.1	1.00	
t-1,3-Dichloropropene	ND	5.1	1.00	
Ethylbenzene	ND	5.1	1.00	
2-Hexanone	ND	51	1.00	
Isopropylbenzene	ND	5.1	1.00	
p-Isopropyltoluene	ND	5.1	1.00	
Methylene Chloride	ND	51	1.00	
4-Methyl-2-Pentanone	ND	51	1.00	
Naphthalene	ND	51	1.00	
n-Propylbenzene	ND	5.1	1.00	
Styrene	ND	5.1	1.00	
1,1,1,2-Tetrachloroethane	ND	5.1	1.00	
1,1,2,2-Tetrachloroethane	ND	5.1	1.00	
Tetrachloroethene	ND	5.1	1.00	
Toluene	ND	5.1	1.00	
1,2,3-Trichlorobenzene	ND	10	1.00	
1,2,4-Trichlorobenzene	ND	5.1	1.00	
1,1,1-Trichloroethane	ND	5.1	1.00	
1,1,2-Trichloroethane	ND	5.1	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	51	1.00	
Trichloroethene	ND	5.1	1.00	
1,2,3-Trichloropropane	ND	5.1	1.00	
1,2,4-Trimethylbenzene	ND	5.1	1.00	
Trichlorofluoromethane	ND	51	1.00	
1,3,5-Trimethylbenzene	ND	5.1	1.00	
Vinyl Acetate	ND	51	1.00	
Vinyl Chloride	ND	5.1	1.00	
p/m-Xylene	ND	5.1	1.00	
o-Xylene	ND	5.1	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	5.1	1.00	
Tert-Butyl Alcohol (TBA)	ND	51	1.00	
Diisopropyl Ether (DIPE)	ND	10	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	10	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	10	1.00	
Ethanol	ND	260	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	88	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/kg
Project: INFINEON - El Segundo / 0397848			Page 39 of 60

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	109	79-133	
1,2-Dichloroethane-d4	106	71-155	
Toluene-d8	102	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-19-0-1	**17-03-1154-14-B**	**03/14/17 16:28**	**Solid**	**GC/MS LL**	**03/16/17**	**03/17/17 02:57**	**170316L066**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	130	1.00	
Benzene	ND	5.0	1.00	
Bromobenzene	ND	5.0	1.00	
Bromochloromethane	ND	5.0	1.00	
Bromodichloromethane	ND	5.0	1.00	
Bromoform	ND	5.0	1.00	
Bromomethane	ND	25	1.00	
2-Butanone	ND	50	1.00	
n-Butylbenzene	ND	5.0	1.00	
sec-Butylbenzene	ND	5.0	1.00	
tert-Butylbenzene	ND	5.0	1.00	
Carbon Disulfide	ND	50	1.00	
Carbon Tetrachloride	ND	5.0	1.00	
Chlorobenzene	ND	5.0	1.00	
Chloroethane	ND	5.0	1.00	
Chloroform	ND	5.0	1.00	
Chloromethane	ND	25	1.00	
2-Chlorotoluene	ND	5.0	1.00	
4-Chlorotoluene	ND	5.0	1.00	
Dibromochloromethane	ND	5.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	10	1.00	
1,2-Dibromoethane	ND	5.0	1.00	
Dibromomethane	ND	5.0	1.00	
1,2-Dichlorobenzene	ND	5.0	1.00	
1,3-Dichlorobenzene	ND	5.0	1.00	
1,4-Dichlorobenzene	ND	5.0	1.00	
Dichlorodifluoromethane	ND	5.0	1.00	
1,1-Dichloroethane	ND	5.0	1.00	
1,2-Dichloroethane	ND	5.0	1.00	
1,1-Dichloroethene	ND	5.0	1.00	
c-1,2-Dichloroethene	ND	5.0	1.00	
t-1,2-Dichloroethene	ND	5.0	1.00	
1,2-Dichloropropane	ND	5.0	1.00	
1,3-Dichloropropane	ND	5.0	1.00	
2,2-Dichloropropane	ND	5.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/15/17
1920 Main Street, Suite 300	Work Order:	17-03-1154
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/kg
Project: INFINEON - El Segundo / 0397848		Page 41 of 60

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	5.0	1.00	
c-1,3-Dichloropropene	ND	5.0	1.00	
t-1,3-Dichloropropene	ND	5.0	1.00	
Ethylbenzene	ND	5.0	1.00	
2-Hexanone	ND	50	1.00	
Isopropylbenzene	ND	5.0	1.00	
p-Isopropyltoluene	ND	5.0	1.00	
Methylene Chloride	ND	50	1.00	
4-Methyl-2-Pentanone	ND	50	1.00	
Naphthalene	ND	50	1.00	
n-Propylbenzene	ND	5.0	1.00	
Styrene	ND	5.0	1.00	
1,1,1,2-Tetrachloroethane	ND	5.0	1.00	
1,1,2,2-Tetrachloroethane	ND	5.0	1.00	
Tetrachloroethene	ND	5.0	1.00	
Toluene	ND	5.0	1.00	
1,2,3-Trichlorobenzene	ND	10	1.00	
1,2,4-Trichlorobenzene	ND	5.0	1.00	
1,1,1-Trichloroethane	ND	5.0	1.00	
1,1,2-Trichloroethane	ND	5.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	50	1.00	
Trichloroethene	ND	5.0	1.00	
1,2,3-Trichloropropane	ND	5.0	1.00	
1,2,4-Trimethylbenzene	ND	5.0	1.00	
Trichlorofluoromethane	ND	50	1.00	
1,3,5-Trimethylbenzene	ND	5.0	1.00	
Vinyl Acetate	ND	50	1.00	
Vinyl Chloride	ND	5.0	1.00	
p/m-Xylene	ND	5.0	1.00	
o-Xylene	ND	5.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	5.0	1.00	
Tert-Butyl Alcohol (TBA)	ND	50	1.00	
Diisopropyl Ether (DIPE)	ND	10	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	10	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	10	1.00	
Ethanol	ND	250	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	87	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/15/17
1920 Main Street, Suite 300	Work Order:	17-03-1154
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/kg
Project: INFINEON - El Segundo / 0397848		Page 42 of 60

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	109	79-133	
1,2-Dichloroethane-d4	106	71-155	
Toluene-d8	102	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SBB2-1-0-1	**17-03-1154-15-B**	**03/15/17 09:05**	**Solid**	**GC/MS LL**	**03/16/17**	**03/17/17 03:26**	**170316L066**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	130	1.00	
Benzene	ND	5.2	1.00	
Bromobenzene	ND	5.2	1.00	
Bromochloromethane	ND	5.2	1.00	
Bromodichloromethane	ND	5.2	1.00	
Bromoform	ND	5.2	1.00	
Bromomethane	ND	26	1.00	
2-Butanone	ND	52	1.00	
n-Butylbenzene	ND	5.2	1.00	
sec-Butylbenzene	ND	5.2	1.00	
tert-Butylbenzene	ND	5.2	1.00	
Carbon Disulfide	ND	52	1.00	
Carbon Tetrachloride	ND	5.2	1.00	
Chlorobenzene	ND	5.2	1.00	
Chloroethane	ND	5.2	1.00	
Chloroform	ND	5.2	1.00	
Chloromethane	ND	26	1.00	
2-Chlorotoluene	ND	5.2	1.00	
4-Chlorotoluene	ND	5.2	1.00	
Dibromochloromethane	ND	5.2	1.00	
1,2-Dibromo-3-Chloropropane	ND	10	1.00	
1,2-Dibromoethane	ND	5.2	1.00	
Dibromomethane	ND	5.2	1.00	
1,2-Dichlorobenzene	ND	5.2	1.00	
1,3-Dichlorobenzene	ND	5.2	1.00	
1,4-Dichlorobenzene	ND	5.2	1.00	
Dichlorodifluoromethane	ND	5.2	1.00	
1,1-Dichloroethane	ND	5.2	1.00	
1,2-Dichloroethane	ND	5.2	1.00	
1,1-Dichloroethene	ND	5.2	1.00	
c-1,2-Dichloroethene	ND	5.2	1.00	
t-1,2-Dichloroethene	ND	5.2	1.00	
1,2-Dichloropropane	ND	5.2	1.00	
1,3-Dichloropropane	ND	5.2	1.00	
2,2-Dichloropropane	ND	5.2	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/15/17
1920 Main Street, Suite 300	Work Order:	17-03-1154
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/kg
Project: INFINEON - El Segundo / 0397848		Page 44 of 60

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	5.2	1.00	
c-1,3-Dichloropropene	ND	5.2	1.00	
t-1,3-Dichloropropene	ND	5.2	1.00	
Ethylbenzene	ND	5.2	1.00	
2-Hexanone	ND	52	1.00	
Isopropylbenzene	ND	5.2	1.00	
p-Isopropyltoluene	ND	5.2	1.00	
Methylene Chloride	ND	52	1.00	
4-Methyl-2-Pentanone	ND	52	1.00	
Naphthalene	ND	52	1.00	
n-Propylbenzene	ND	5.2	1.00	
Styrene	ND	5.2	1.00	
1,1,1,2-Tetrachloroethane	ND	5.2	1.00	
1,1,2,2-Tetrachloroethane	ND	5.2	1.00	
Tetrachloroethene	ND	5.2	1.00	
Toluene	ND	5.2	1.00	
1,2,3-Trichlorobenzene	ND	10	1.00	
1,2,4-Trichlorobenzene	ND	5.2	1.00	
1,1,1-Trichloroethane	ND	5.2	1.00	
1,1,2-Trichloroethane	ND	5.2	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	52	1.00	
Trichloroethene	ND	5.2	1.00	
1,2,3-Trichloropropane	ND	5.2	1.00	
1,2,4-Trimethylbenzene	ND	5.2	1.00	
Trichlorofluoromethane	ND	52	1.00	
1,3,5-Trimethylbenzene	ND	5.2	1.00	
Vinyl Acetate	ND	52	1.00	
Vinyl Chloride	ND	5.2	1.00	
p/m-Xylene	ND	5.2	1.00	
o-Xylene	ND	5.2	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	5.2	1.00	
Tert-Butyl Alcohol (TBA)	ND	52	1.00	
Diisopropyl Ether (DIPE)	ND	10	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	10	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	10	1.00	
Ethanol	ND	260	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	87	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/kg
Project: INFINEON - El Segundo / 0397848			Page 45 of 60

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	112	79-133	
1,2-Dichloroethane-d4	110	71-155	
Toluene-d8	101	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SBB2-4-0-1	**17-03-1154-16-B**	**03/15/17 09:35**	**Solid**	**GC/MS GGG**	**03/16/17**	**03/17/17 18:04**	**170317L038**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	130	1.00	
Benzene	ND	5.2	1.00	
Bromobenzene	ND	5.2	1.00	
Bromochloromethane	ND	5.2	1.00	
Bromodichloromethane	ND	5.2	1.00	
Bromoform	ND	5.2	1.00	
Bromomethane	ND	26	1.00	
2-Butanone	ND	52	1.00	
n-Butylbenzene	ND	5.2	1.00	
sec-Butylbenzene	ND	5.2	1.00	
tert-Butylbenzene	ND	5.2	1.00	
Carbon Disulfide	ND	52	1.00	
Carbon Tetrachloride	ND	5.2	1.00	
Chlorobenzene	ND	5.2	1.00	
Chloroethane	ND	5.2	1.00	
Chloroform	ND	5.2	1.00	
Chloromethane	ND	26	1.00	
2-Chlorotoluene	ND	5.2	1.00	
4-Chlorotoluene	ND	5.2	1.00	
Dibromochloromethane	ND	5.2	1.00	
1,2-Dibromo-3-Chloropropane	ND	10	1.00	
1,2-Dibromoethane	ND	5.2	1.00	
Dibromomethane	ND	5.2	1.00	
1,2-Dichlorobenzene	ND	5.2	1.00	
1,3-Dichlorobenzene	ND	5.2	1.00	
1,4-Dichlorobenzene	ND	5.2	1.00	
Dichlorodifluoromethane	ND	5.2	1.00	
1,1-Dichloroethane	ND	5.2	1.00	
1,2-Dichloroethane	ND	5.2	1.00	
1,1-Dichloroethene	ND	5.2	1.00	
c-1,2-Dichloroethene	ND	5.2	1.00	
t-1,2-Dichloroethene	ND	5.2	1.00	
1,2-Dichloropropane	ND	5.2	1.00	
1,3-Dichloropropane	ND	5.2	1.00	
2,2-Dichloropropane	ND	5.2	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/15/17
1920 Main Street, Suite 300	Work Order:	17-03-1154
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/kg
Project: INFINEON - El Segundo / 0397848		Page 47 of 60

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	5.2	1.00	
c-1,3-Dichloropropene	ND	5.2	1.00	
t-1,3-Dichloropropene	ND	5.2	1.00	
Ethylbenzene	ND	5.2	1.00	
2-Hexanone	ND	52	1.00	
Isopropylbenzene	ND	5.2	1.00	
p-Isopropyltoluene	ND	5.2	1.00	
Methylene Chloride	ND	52	1.00	
4-Methyl-2-Pentanone	ND	52	1.00	
Naphthalene	ND	52	1.00	
n-Propylbenzene	ND	5.2	1.00	
Styrene	ND	5.2	1.00	
1,1,1,2-Tetrachloroethane	ND	5.2	1.00	
1,1,2,2-Tetrachloroethane	ND	5.2	1.00	
Tetrachloroethene	ND	5.2	1.00	
Toluene	ND	5.2	1.00	
1,2,3-Trichlorobenzene	ND	10	1.00	
1,2,4-Trichlorobenzene	ND	5.2	1.00	
1,1,1-Trichloroethane	ND	5.2	1.00	
1,1,2-Trichloroethane	ND	5.2	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	52	1.00	
Trichloroethene	ND	5.2	1.00	
1,2,3-Trichloropropane	ND	5.2	1.00	
1,2,4-Trimethylbenzene	ND	5.2	1.00	
Trichlorofluoromethane	ND	52	1.00	
1,3,5-Trimethylbenzene	ND	5.2	1.00	
Vinyl Acetate	ND	52	1.00	
Vinyl Chloride	ND	5.2	1.00	
p/m-Xylene	ND	5.2	1.00	
o-Xylene	ND	5.2	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	5.2	1.00	
Tert-Butyl Alcohol (TBA)	ND	52	1.00	
Diisopropyl Ether (DIPE)	ND	10	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	10	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	10	1.00	
Ethanol	ND	260	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	89	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/kg
Project: INFINEON - El Segundo / 0397848			Page 48 of 60

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	73	79-133	2,6
1,2-Dichloroethane-d4	107	71-155	
Toluene-d8	97	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SBB2-5-3-4	**17-03-1154-17-B**	**03/15/17 10:50**	**Solid**	**GC/MS LL**	**03/16/17**	**03/17/17 04:24**	**170316L066**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	120	1.00	
Benzene	ND	4.9	1.00	
Bromobenzene	ND	4.9	1.00	
Bromochloromethane	ND	4.9	1.00	
Bromodichloromethane	ND	4.9	1.00	
Bromoform	ND	4.9	1.00	
Bromomethane	ND	25	1.00	
2-Butanone	ND	49	1.00	
n-Butylbenzene	ND	4.9	1.00	
sec-Butylbenzene	ND	4.9	1.00	
tert-Butylbenzene	ND	4.9	1.00	
Carbon Disulfide	ND	49	1.00	
Carbon Tetrachloride	ND	4.9	1.00	
Chlorobenzene	ND	4.9	1.00	
Chloroethane	ND	4.9	1.00	
Chloroform	ND	4.9	1.00	
Chloromethane	ND	25	1.00	
2-Chlorotoluene	ND	4.9	1.00	
4-Chlorotoluene	ND	4.9	1.00	
Dibromochloromethane	ND	4.9	1.00	
1,2-Dibromo-3-Chloropropane	ND	9.8	1.00	
1,2-Dibromoethane	ND	4.9	1.00	
Dibromomethane	ND	4.9	1.00	
1,2-Dichlorobenzene	ND	4.9	1.00	
1,3-Dichlorobenzene	ND	4.9	1.00	
1,4-Dichlorobenzene	ND	4.9	1.00	
Dichlorodifluoromethane	ND	4.9	1.00	
1,1-Dichloroethane	ND	4.9	1.00	
1,2-Dichloroethane	ND	4.9	1.00	
1,1-Dichloroethene	ND	4.9	1.00	
c-1,2-Dichloroethene	ND	4.9	1.00	
t-1,2-Dichloroethene	ND	4.9	1.00	
1,2-Dichloropropane	ND	4.9	1.00	
1,3-Dichloropropane	ND	4.9	1.00	
2,2-Dichloropropane	ND	4.9	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/kg

Project: INFINEON - El Segundo / 0397848

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	4.9	1.00	
c-1,3-Dichloropropene	ND	4.9	1.00	
t-1,3-Dichloropropene	ND	4.9	1.00	
Ethylbenzene	ND	4.9	1.00	
2-Hexanone	ND	49	1.00	
Isopropylbenzene	ND	4.9	1.00	
p-Isopropyltoluene	ND	4.9	1.00	
Methylene Chloride	ND	49	1.00	
4-Methyl-2-Pentanone	ND	49	1.00	
Naphthalene	ND	49	1.00	
n-Propylbenzene	ND	4.9	1.00	
Styrene	ND	4.9	1.00	
1,1,1,2-Tetrachloroethane	ND	4.9	1.00	
1,1,2,2-Tetrachloroethane	ND	4.9	1.00	
Tetrachloroethene	21	4.9	1.00	
Toluene	ND	4.9	1.00	
1,2,3-Trichlorobenzene	ND	9.8	1.00	
1,2,4-Trichlorobenzene	ND	4.9	1.00	
1,1,1-Trichloroethane	ND	4.9	1.00	
1,1,2-Trichloroethane	ND	4.9	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	49	1.00	
Trichloroethene	ND	4.9	1.00	
1,2,3-Trichloropropane	ND	4.9	1.00	
1,2,4-Trimethylbenzene	ND	4.9	1.00	
Trichlorofluoromethane	ND	49	1.00	
1,3,5-Trimethylbenzene	ND	4.9	1.00	
Vinyl Acetate	ND	49	1.00	
Vinyl Chloride	ND	4.9	1.00	
p/m-Xylene	ND	4.9	1.00	
o-Xylene	ND	4.9	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	4.9	1.00	
Tert-Butyl Alcohol (TBA)	ND	49	1.00	
Diisopropyl Ether (DIPE)	ND	9.8	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	9.8	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	9.8	1.00	
Ethanol	ND	250	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	87	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/kg
Project: INFINEON - El Segundo / 0397848			Page 51 of 60

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	110	79-133	
1,2-Dichloroethane-d4	108	71-155	
Toluene-d8	101	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-796-12455**	**N/A**	**Solid**	**GC/MS LL**	**03/16/17**	**03/16/17 11:19**	**170316L012**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	120	1.00	
Benzene	ND	5.0	1.00	
Bromobenzene	ND	5.0	1.00	
Bromochloromethane	ND	5.0	1.00	
Bromodichloromethane	ND	5.0	1.00	
Bromoform	ND	5.0	1.00	
Bromomethane	ND	25	1.00	
2-Butanone	ND	50	1.00	
n-Butylbenzene	ND	5.0	1.00	
sec-Butylbenzene	ND	5.0	1.00	
tert-Butylbenzene	ND	5.0	1.00	
Carbon Disulfide	ND	50	1.00	
Carbon Tetrachloride	ND	5.0	1.00	
Chlorobenzene	ND	5.0	1.00	
Chloroethane	ND	5.0	1.00	
Chloroform	ND	5.0	1.00	
Chloromethane	ND	25	1.00	
2-Chlorotoluene	ND	5.0	1.00	
4-Chlorotoluene	ND	5.0	1.00	
Dibromochloromethane	ND	5.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	10	1.00	
1,2-Dibromoethane	ND	5.0	1.00	
Dibromomethane	ND	5.0	1.00	
1,2-Dichlorobenzene	ND	5.0	1.00	
1,3-Dichlorobenzene	ND	5.0	1.00	
1,4-Dichlorobenzene	ND	5.0	1.00	
Dichlorodifluoromethane	ND	5.0	1.00	
1,1-Dichloroethane	ND	5.0	1.00	
1,2-Dichloroethane	ND	5.0	1.00	
1,1-Dichloroethene	ND	5.0	1.00	
c-1,2-Dichloroethene	ND	5.0	1.00	
t-1,2-Dichloroethene	ND	5.0	1.00	
1,2-Dichloropropane	ND	5.0	1.00	
1,3-Dichloropropane	ND	5.0	1.00	
2,2-Dichloropropane	ND	5.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/15/17
1920 Main Street, Suite 300	Work Order:	17-03-1154
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/kg
Project: INFINEON - El Segundo / 0397848		Page 53 of 60

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	5.0	1.00	
c-1,3-Dichloropropene	ND	5.0	1.00	
t-1,3-Dichloropropene	ND	5.0	1.00	
Ethylbenzene	ND	5.0	1.00	
2-Hexanone	ND	50	1.00	
Isopropylbenzene	ND	5.0	1.00	
p-Isopropyltoluene	ND	5.0	1.00	
Methylene Chloride	ND	50	1.00	
4-Methyl-2-Pentanone	ND	50	1.00	
Naphthalene	ND	50	1.00	
n-Propylbenzene	ND	5.0	1.00	
Styrene	ND	5.0	1.00	
1,1,1,2-Tetrachloroethane	ND	5.0	1.00	
1,1,2,2-Tetrachloroethane	ND	5.0	1.00	
Tetrachloroethene	ND	5.0	1.00	
Toluene	ND	5.0	1.00	
1,2,3-Trichlorobenzene	ND	10	1.00	
1,2,4-Trichlorobenzene	ND	5.0	1.00	
1,1,1-Trichloroethane	ND	5.0	1.00	
1,1,2-Trichloroethane	ND	5.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	50	1.00	
Trichloroethene	ND	5.0	1.00	
1,2,3-Trichloropropane	ND	5.0	1.00	
1,2,4-Trimethylbenzene	ND	5.0	1.00	
Trichlorofluoromethane	ND	50	1.00	
1,3,5-Trimethylbenzene	ND	5.0	1.00	
Vinyl Acetate	ND	50	1.00	
Vinyl Chloride	ND	5.0	1.00	
p/m-Xylene	ND	5.0	1.00	
o-Xylene	ND	5.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	5.0	1.00	
Tert-Butyl Alcohol (TBA)	ND	50	1.00	
Diisopropyl Ether (DIPE)	ND	10	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	10	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	10	1.00	
Ethanol	ND	250	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	89	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/kg
Project: INFINEON - El Segundo / 0397848			Page 54 of 60

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	110	79-133	
1,2-Dichloroethane-d4	105	71-155	
Toluene-d8	99	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-796-12463**	**N/A**	**Solid**	**GC/MS LL**	**03/16/17**	**03/16/17 22:35**	**170316L066**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	120	1.00	
Benzene	ND	5.0	1.00	
Bromobenzene	ND	5.0	1.00	
Bromochloromethane	ND	5.0	1.00	
Bromodichloromethane	ND	5.0	1.00	
Bromoform	ND	5.0	1.00	
Bromomethane	ND	25	1.00	
2-Butanone	ND	50	1.00	
n-Butylbenzene	ND	5.0	1.00	
sec-Butylbenzene	ND	5.0	1.00	
tert-Butylbenzene	ND	5.0	1.00	
Carbon Disulfide	ND	50	1.00	
Carbon Tetrachloride	ND	5.0	1.00	
Chlorobenzene	ND	5.0	1.00	
Chloroethane	ND	5.0	1.00	
Chloroform	ND	5.0	1.00	
Chloromethane	ND	25	1.00	
2-Chlorotoluene	ND	5.0	1.00	
4-Chlorotoluene	ND	5.0	1.00	
Dibromochloromethane	ND	5.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	10	1.00	
1,2-Dibromoethane	ND	5.0	1.00	
Dibromomethane	ND	5.0	1.00	
1,2-Dichlorobenzene	ND	5.0	1.00	
1,3-Dichlorobenzene	ND	5.0	1.00	
1,4-Dichlorobenzene	ND	5.0	1.00	
Dichlorodifluoromethane	ND	5.0	1.00	
1,1-Dichloroethane	ND	5.0	1.00	
1,2-Dichloroethane	ND	5.0	1.00	
1,1-Dichloroethene	ND	5.0	1.00	
c-1,2-Dichloroethene	ND	5.0	1.00	
t-1,2-Dichloroethene	ND	5.0	1.00	
1,2-Dichloropropane	ND	5.0	1.00	
1,3-Dichloropropane	ND	5.0	1.00	
2,2-Dichloropropane	ND	5.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/kg
Project: INFINEON - El Segundo / 0397848			Page 56 of 60

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	5.0	1.00	
c-1,3-Dichloropropene	ND	5.0	1.00	
t-1,3-Dichloropropene	ND	5.0	1.00	
Ethylbenzene	ND	5.0	1.00	
2-Hexanone	ND	50	1.00	
Isopropylbenzene	ND	5.0	1.00	
p-Isopropyltoluene	ND	5.0	1.00	
Methylene Chloride	ND	50	1.00	
4-Methyl-2-Pentanone	ND	50	1.00	
Naphthalene	ND	50	1.00	
n-Propylbenzene	ND	5.0	1.00	
Styrene	ND	5.0	1.00	
1,1,1,2-Tetrachloroethane	ND	5.0	1.00	
1,1,2,2-Tetrachloroethane	ND	5.0	1.00	
Tetrachloroethene	ND	5.0	1.00	
Toluene	ND	5.0	1.00	
1,2,3-Trichlorobenzene	ND	10	1.00	
1,2,4-Trichlorobenzene	ND	5.0	1.00	
1,1,1-Trichloroethane	ND	5.0	1.00	
1,1,2-Trichloroethane	ND	5.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	50	1.00	
Trichloroethene	ND	5.0	1.00	
1,2,3-Trichloropropane	ND	5.0	1.00	
1,2,4-Trimethylbenzene	ND	5.0	1.00	
Trichlorofluoromethane	ND	50	1.00	
1,3,5-Trimethylbenzene	ND	5.0	1.00	
Vinyl Acetate	ND	50	1.00	
Vinyl Chloride	ND	5.0	1.00	
p/m-Xylene	ND	5.0	1.00	
o-Xylene	ND	5.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	5.0	1.00	
Tert-Butyl Alcohol (TBA)	ND	50	1.00	
Diisopropyl Ether (DIPE)	ND	10	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	10	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	10	1.00	
Ethanol	ND	250	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	88	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/15/17
1920 Main Street, Suite 300	Work Order:	17-03-1154
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/kg
Project: INFINEON - El Segundo / 0397848		Page 57 of 60

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	109	79-133	
1,2-Dichloroethane-d4	107	71-155	
Toluene-d8	101	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-796-12465**	**N/A**	**Solid**	**GC/MS GGG**	**03/17/17**	**03/17/17 15:50**	**170317L038**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	120	1.00	
Benzene	ND	5.0	1.00	
Bromobenzene	ND	5.0	1.00	
Bromochloromethane	ND	5.0	1.00	
Bromodichloromethane	ND	5.0	1.00	
Bromoform	ND	5.0	1.00	
Bromomethane	ND	25	1.00	
2-Butanone	ND	50	1.00	
n-Butylbenzene	ND	5.0	1.00	
sec-Butylbenzene	ND	5.0	1.00	
tert-Butylbenzene	ND	5.0	1.00	
Carbon Disulfide	ND	50	1.00	
Carbon Tetrachloride	ND	5.0	1.00	
Chlorobenzene	ND	5.0	1.00	
Chloroethane	ND	5.0	1.00	
Chloroform	ND	5.0	1.00	
Chloromethane	ND	25	1.00	
2-Chlorotoluene	ND	5.0	1.00	
4-Chlorotoluene	ND	5.0	1.00	
Dibromochloromethane	ND	5.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	10	1.00	
1,2-Dibromoethane	ND	5.0	1.00	
Dibromomethane	ND	5.0	1.00	
1,2-Dichlorobenzene	ND	5.0	1.00	
1,3-Dichlorobenzene	ND	5.0	1.00	
1,4-Dichlorobenzene	ND	5.0	1.00	
Dichlorodifluoromethane	ND	5.0	1.00	
1,1-Dichloroethane	ND	5.0	1.00	
1,2-Dichloroethane	ND	5.0	1.00	
1,1-Dichloroethene	ND	5.0	1.00	
c-1,2-Dichloroethene	ND	5.0	1.00	
t-1,2-Dichloroethene	ND	5.0	1.00	
1,2-Dichloropropane	ND	5.0	1.00	
1,3-Dichloropropane	ND	5.0	1.00	
2,2-Dichloropropane	ND	5.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/15/17
1920 Main Street, Suite 300	Work Order:	17-03-1154
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/kg
Project: INFINEON - El Segundo / 0397848		Page 59 of 60

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	5.0	1.00	
c-1,3-Dichloropropene	ND	5.0	1.00	
t-1,3-Dichloropropene	ND	5.0	1.00	
Ethylbenzene	ND	5.0	1.00	
2-Hexanone	ND	50	1.00	
Isopropylbenzene	ND	5.0	1.00	
p-Isopropyltoluene	ND	5.0	1.00	
Methylene Chloride	ND	50	1.00	
4-Methyl-2-Pentanone	ND	50	1.00	
Naphthalene	ND	50	1.00	
n-Propylbenzene	ND	5.0	1.00	
Styrene	ND	5.0	1.00	
1,1,1,2-Tetrachloroethane	ND	5.0	1.00	
1,1,2,2-Tetrachloroethane	ND	5.0	1.00	
Tetrachloroethene	ND	5.0	1.00	
Toluene	ND	5.0	1.00	
1,2,3-Trichlorobenzene	ND	10	1.00	
1,2,4-Trichlorobenzene	ND	5.0	1.00	
1,1,1-Trichloroethane	ND	5.0	1.00	
1,1,2-Trichloroethane	ND	5.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	50	1.00	
Trichloroethene	ND	5.0	1.00	
1,2,3-Trichloropropane	ND	5.0	1.00	
1,2,4-Trimethylbenzene	ND	5.0	1.00	
Trichlorofluoromethane	ND	50	1.00	
1,3,5-Trimethylbenzene	ND	5.0	1.00	
Vinyl Acetate	ND	50	1.00	
Vinyl Chloride	ND	5.0	1.00	
p/m-Xylene	ND	5.0	1.00	
o-Xylene	ND	5.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	5.0	1.00	
Tert-Butyl Alcohol (TBA)	ND	50	1.00	
Diisopropyl Ether (DIPE)	ND	10	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	10	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	10	1.00	
Ethanol	ND	250	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	91	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/kg
Project: INFINEON - El Segundo / 0397848			Page 60 of 60

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	95	79-133	
1,2-Dichloroethane-d4	112	71-155	
Toluene-d8	98	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Quality Control - Spike/Spike Duplicate

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)
Project: INFINEON - El Segundo / 0397848			Page 1 of 6

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
SB-20-0-1	**Sample**	**Solid**	**GC 45**	**03/17/17**	**03/18/17 20:14**	**170317S17**
SB-20-0-1	**Matrix Spike**	**Solid**	**GC 45**	**03/17/17**	**03/18/17 19:32**	**170317S17**
SB-20-0-1	**Matrix Spike Duplicate**	**Solid**	**GC 45**	**03/17/17**	**03/18/17 19:53**	**170317S17**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
TPH as Diesel	ND	400.0	378.0	95	369.5	92	64-130	2	0-15	

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - Spike/Spike Duplicate

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 3050B
		Method:	EPA 6010B
Project: INFINEON - El Segundo / 0397848			Page 2 of 6

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
SB-20-0-1	**Sample**	**Solid**	**ICP 7300**	**03/22/17**	**03/23/17 12:53**	**170322S05**
SB-20-0-1	**Matrix Spike**	**Solid**	**ICP 7300**	**03/22/17**	**03/23/17 12:54**	**170322S05**
SB-20-0-1	**Matrix Spike Duplicate**	**Solid**	**ICP 7300**	**03/22/17**	**03/23/17 12:55**	**170322S05**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Antimony	ND	25.00	13.75	55	13.69	55	50-115	0	0-20	
Arsenic	ND	25.00	25.15	101	23.81	95	75-125	5	0-20	
Barium	20.32	25.00	52.57	129	45.94	102	75-125	13	0-20	3
Beryllium	ND	25.00	25.86	103	24.76	99	75-125	4	0-20	
Cadmium	ND	25.00	25.82	103	24.61	98	75-125	5	0-20	
Chromium	9.833	25.00	39.73	120	35.86	104	75-125	10	0-20	
Cobalt	2.447	25.00	29.90	110	27.97	102	75-125	7	0-20	
Copper	2.385	25.00	29.68	109	27.99	102	75-125	6	0-20	
Lead	2.730	25.00	29.70	108	28.04	101	75-125	6	0-20	
Molybdenum	ND	25.00	24.08	96	22.68	91	75-125	6	0-20	
Nickel	3.652	25.00	30.17	106	27.87	97	75-125	8	0-20	
Selenium	ND	25.00	24.97	100	23.94	96	75-125	4	0-20	
Silver	ND	12.50	12.37	99	11.70	94	75-125	6	0-20	
Thallium	ND	25.00	24.80	99	23.72	95	75-125	4	0-20	
Vanadium	13.10	25.00	42.84	119	37.47	97	75-125	13	0-20	
Zinc	12.42	25.00	47.14	139	44.64	129	75-125	5	0-20	3

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - Spike/Spike Duplicate

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 7471A Total
		Method:	EPA 7471A
Project: INFINEON - El Segundo / 0397848			Page 3 of 6

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
SB-20-0-1	**Sample**	**Solid**	**Mercury 08**	**03/22/17**	**03/22/17 19:05**	**170322S04**
SB-20-0-1	**Matrix Spike**	**Solid**	**Mercury 08**	**03/22/17**	**03/22/17 19:07**	**170322S04**
SB-20-0-1	**Matrix Spike Duplicate**	**Solid**	**Mercury 08**	**03/22/17**	**03/22/17 19:09**	**170322S04**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Mercury	ND	0.8350	0.9945	119	1.002	120	71-137	1	0-14	

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - Spike/Spike Duplicate

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
Project: INFINEON - El Segundo / 0397848			Page 4 of 6

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
SB-20-0-1	**Sample**	**Solid**	**GC/MS LL**	**03/16/17**	**03/16/17 12:54**	**170316S002**
SB-20-0-1	**Matrix Spike**	**Solid**	**GC/MS LL**	**03/16/17**	**03/16/17 13:23**	**170316S002**
SB-20-0-1	**Matrix Spike Duplicate**	**Solid**	**GC/MS LL**	**03/16/17**	**03/16/17 13:52**	**170316S002**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Benzene	ND	50.00	46.92	94	46.40	93	61-127	1	0-20	
Carbon Tetrachloride	ND	50.00	51.59	103	52.58	105	51-135	2	0-29	
Chlorobenzene	ND	50.00	47.53	95	47.37	95	57-123	0	0-20	
1,2-Dibromoethane	ND	50.00	45.55	91	45.82	92	64-124	1	0-20	
1,2-Dichlorobenzene	ND	50.00	45.37	91	45.52	91	35-131	0	0-25	
1,2-Dichloroethane	ND	50.00	44.57	89	45.11	90	80-120	1	0-20	
1,1-Dichloroethene	ND	50.00	51.71	103	51.06	102	47-143	1	0-25	
Ethylbenzene	ND	50.00	48.54	97	48.07	96	57-129	1	0-22	
Toluene	ND	50.00	47.85	96	46.74	93	63-123	2	0-20	
Trichloroethene	ND	50.00	50.00	100	49.88	100	44-158	0	0-20	
Vinyl Chloride	ND	50.00	51.20	102	50.34	101	49-139	2	0-47	
p/m-Xylene	ND	100.0	93.60	94	93.65	94	70-130	0	0-30	
o-Xylene	ND	50.00	45.83	92	45.92	92	70-130	0	0-30	
Methyl-t-Butyl Ether (MTBE)	ND	50.00	42.70	85	43.86	88	57-123	3	0-21	
Tert-Butyl Alcohol (TBA)	ND	250.0	219.7	88	218.5	87	30-168	1	0-34	
Diisopropyl Ether (DIPE)	ND	50.00	44.75	90	43.98	88	57-129	2	0-20	
Ethyl-t-Butyl Ether (ETBE)	ND	50.00	41.99	84	42.37	85	55-127	1	0-20	
Tert-Amyl-Methyl Ether (TAME)	ND	50.00	39.93	80	40.18	80	58-124	1	0-20	
Ethanol	ND	500.0	504.1	101	477.5	96	17-167	5	0-47	

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - Spike/Spike Duplicate

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
Project: INFINEON - El Segundo / 0397848			Page 5 of 6

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
SB-3-0-1	**Sample**	**Solid**	**GC/MS LL**	**03/16/17**	**03/16/17 23:34**	**170316S018**
SB-3-0-1	**Matrix Spike**	**Solid**	**GC/MS LL**	**03/16/17**	**03/17/17 00:02**	**170316S018**
SB-3-0-1	**Matrix Spike Duplicate**	**Solid**	**GC/MS LL**	**03/16/17**	**03/17/17 00:31**	**170316S018**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Benzene	ND	50.00	42.68	85	41.54	83	61-127	3	0-20	
Carbon Tetrachloride	ND	50.00	43.30	87	42.32	85	51-135	2	0-29	
Chlorobenzene	ND	50.00	37.45	75	36.44	73	57-123	3	0-20	
1,2-Dibromoethane	ND	50.00	40.18	80	40.08	80	64-124	0	0-20	
1,2-Dichlorobenzene	ND	50.00	25.91	52	25.70	51	35-131	1	0-25	
1,2-Dichloroethane	ND	50.00	42.67	85	42.04	84	80-120	1	0-20	
1,1-Dichloroethene	ND	50.00	48.97	98	46.59	93	47-143	5	0-25	
Ethylbenzene	ND	50.00	35.73	71	34.73	69	57-129	3	0-22	
Toluene	ND	50.00	40.26	81	39.27	79	63-123	2	0-20	
Trichloroethene	ND	50.00	42.18	84	40.91	82	44-158	3	0-20	
Vinyl Chloride	ND	50.00	49.78	100	47.96	96	49-139	4	0-47	
p/m-Xylene	ND	100.0	67.53	68	65.95	66	70-130	2	0-30	3
o-Xylene	ND	50.00	33.77	68	32.84	66	70-130	3	0-30	3
Methyl-t-Butyl Ether (MTBE)	ND	50.00	41.66	83	40.52	81	57-123	3	0-21	
Tert-Butyl Alcohol (TBA)	ND	250.0	218.8	88	207.8	83	30-168	5	0-34	
Diisopropyl Ether (DIPE)	ND	50.00	46.71	93	45.59	91	57-129	2	0-20	
Ethyl-t-Butyl Ether (ETBE)	ND	50.00	40.62	81	39.42	79	55-127	3	0-20	
Tert-Amyl-Methyl Ether (TAME)	ND	50.00	37.76	76	37.27	75	58-124	1	0-20	
Ethanol	ND	500.0	342.5	69	301.9	60	17-167	13	0-47	

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - Spike/Spike Duplicate

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
Project: INFINEON - El Segundo / 0397848			Page 6 of 6

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
17-03-1223-1	**Sample**	**Solid**	**GC/MS GGG**	**03/16/17**	**03/17/17 16:16**	**170317S005**
17-03-1223-1	**Matrix Spike**	**Solid**	**GC/MS GGG**	**03/16/17**	**03/17/17 16:44**	**170317S005**
17-03-1223-1	**Matrix Spike Duplicate**	**Solid**	**GC/MS GGG**	**03/16/17**	**03/17/17 17:10**	**170317S005**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Benzene	ND	50.00	53.05	106	52.57	105	61-127	1	0-20	
Carbon Tetrachloride	ND	50.00	52.26	105	52.33	105	51-135	0	0-29	
Chlorobenzene	ND	50.00	54.80	110	55.05	110	57-123	0	0-20	
1,2-Dibromoethane	ND	50.00	55.21	110	56.05	112	64-124	2	0-20	
1,2-Dichlorobenzene	ND	50.00	53.81	108	54.22	108	35-131	1	0-25	
1,2-Dichloroethane	ND	50.00	55.38	111	55.14	110	80-120	0	0-20	
1,1-Dichloroethene	ND	50.00	52.92	106	53.22	106	47-143	1	0-25	
Ethylbenzene	ND	50.00	55.00	110	55.11	110	57-129	0	0-22	
Toluene	ND	50.00	54.00	108	53.73	107	63-123	1	0-20	
Trichloroethene	ND	50.00	52.84	106	52.56	105	44-158	1	0-20	
Vinyl Chloride	ND	50.00	51.93	104	52.96	106	49-139	2	0-47	
p/m-Xylene	ND	100.0	110.8	111	111.2	111	70-130	0	0-30	
o-Xylene	ND	50.00	53.71	107	53.50	107	70-130	0	0-30	
Methyl-t-Butyl Ether (MTBE)	ND	50.00	49.12	98	50.19	100	57-123	2	0-21	
Tert-Butyl Alcohol (TBA)	ND	250.0	283.3	113	290.5	116	30-168	2	0-34	
Diisopropyl Ether (DIPE)	ND	50.00	49.48	99	49.57	99	57-129	0	0-20	
Ethyl-t-Butyl Ether (ETBE)	ND	50.00	45.69	91	46.00	92	55-127	1	0-20	
Tert-Amyl-Methyl Ether (TAME)	ND	50.00	45.65	91	45.58	91	58-124	0	0-20	
Ethanol	ND	500.0	590.5	118	588.7	118	17-167	0	0-47	

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)
Project: INFINEON - El Segundo / 0397848			Page 1 of 6

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-15-490-2537	**LCS**	**Solid**	**GC 45**	**03/17/17**	**03/18/17 19:11**	**170317B17**

Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	Qualifiers
TPH as Diesel	400.0	388.6	97	75-123	

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 3050B
		Method:	EPA 6010B
Project: INFINEON - El Segundo / 0397848			Page 2 of 6

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
097-01-002-24479	**LCS**	**Solid**	**ICP 7300**	**03/22/17**	**03/23/17 11:40**	**170322L05**

Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	ME CL	Qualifiers
Antimony	25.00	22.35	89	80-120	73-127	
Arsenic	25.00	22.55	90	80-120	73-127	
Barium	25.00	25.47	102	80-120	73-127	
Beryllium	25.00	22.56	90	80-120	73-127	
Cadmium	25.00	23.81	95	80-120	73-127	
Chromium	25.00	23.86	95	80-120	73-127	
Cobalt	25.00	24.92	100	80-120	73-127	
Copper	25.00	23.90	96	80-120	73-127	
Lead	25.00	24.88	100	80-120	73-127	
Molybdenum	25.00	23.45	94	80-120	73-127	
Nickel	25.00	23.48	94	80-120	73-127	
Selenium	25.00	22.66	91	80-120	73-127	
Silver	12.50	11.55	92	80-120	73-127	
Thallium	25.00	24.31	97	80-120	73-127	
Vanadium	25.00	22.77	91	80-120	73-127	
Zinc	25.00	23.67	95	80-120	73-127	

Total number of LCS compounds: 16
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 7471A Total
		Method:	EPA 7471A
Project: INFINEON - El Segundo / 0397848			Page 3 of 6

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-16-272-2892	**LCS**	**Solid**	**Mercury 08**	**03/22/17**	**03/22/17 19:02**	**170322L04**

Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	Qualifiers
Mercury	0.8350	0.9886	118	85-121	

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
Project: INFINEON - El Segundo / 0397848			Page 4 of 6

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-12-796-12455	**LCS**	**Solid**	**GC/MS LL**	**03/16/17**	**03/16/17 09:50**	**170316L012**

Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	ME CL	Qualifiers
Benzene	50.00	49.96	100	80-120	73-127	
Carbon Tetrachloride	50.00	56.76	114	65-137	53-149	
Chlorobenzene	50.00	52.29	105	80-120	73-127	
1,2-Dibromoethane	50.00	48.25	96	80-120	73-127	
1,2-Dichlorobenzene	50.00	50.66	101	80-120	73-127	
1,2-Dichloroethane	50.00	47.09	94	80-120	73-127	
1,1-Dichloroethene	50.00	55.06	110	68-128	58-138	
Ethylbenzene	50.00	52.74	105	80-120	73-127	
Toluene	50.00	51.18	102	80-120	73-127	
Trichloroethene	50.00	52.54	105	80-120	73-127	
Vinyl Chloride	50.00	55.17	110	67-127	57-137	
p/m-Xylene	100.0	101.8	102	75-125	67-133	
o-Xylene	50.00	49.93	100	75-125	67-133	
Methyl-t-Butyl Ether (MTBE)	50.00	44.93	90	70-124	61-133	
Tert-Butyl Alcohol (TBA)	250.0	231.1	92	73-121	65-129	
Diisopropyl Ether (DIPE)	50.00	45.54	91	69-129	59-139	
Ethyl-t-Butyl Ether (ETBE)	50.00	44.36	89	70-124	61-133	
Tert-Amyl-Methyl Ether (TAME)	50.00	42.12	84	74-122	66-130	
Ethanol	500.0	485.3	97	51-135	37-149	

Total number of LCS compounds: 19
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
Project: INFINEON - El Segundo / 0397848			Page 5 of 6

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-12-796-12463	**LCS**	**Solid**	**GC/MS LL**	**03/16/17**	**03/16/17 21:37**	**170316L066**

Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	ME CL	Qualifiers
Benzene	50.00	49.71	99	80-120	73-127	
Carbon Tetrachloride	50.00	52.74	105	65-137	53-149	
Chlorobenzene	50.00	50.92	102	80-120	73-127	
1,2-Dibromoethane	50.00	50.22	100	80-120	73-127	
1,2-Dichlorobenzene	50.00	50.45	101	80-120	73-127	
1,2-Dichloroethane	50.00	49.07	98	80-120	73-127	
1,1-Dichloroethene	50.00	53.87	108	68-128	58-138	
Ethylbenzene	50.00	50.34	101	80-120	73-127	
Toluene	50.00	50.43	101	80-120	73-127	
Trichloroethene	50.00	51.43	103	80-120	73-127	
Vinyl Chloride	50.00	52.46	105	67-127	57-137	
p/m-Xylene	100.0	97.70	98	75-125	67-133	
o-Xylene	50.00	48.46	97	75-125	67-133	
Methyl-t-Butyl Ether (MTBE)	50.00	47.48	95	70-124	61-133	
Tert-Butyl Alcohol (TBA)	250.0	244.3	98	73-121	65-129	
Diisopropyl Ether (DIPE)	50.00	47.83	96	69-129	59-139	
Ethyl-t-Butyl Ether (ETBE)	50.00	46.09	92	70-124	61-133	
Tert-Amyl-Methyl Ether (TAME)	50.00	43.90	88	74-122	66-130	
Ethanol	500.0	518.3	104	51-135	37-149	

Total number of LCS compounds: 19
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
Project: INFINEON - El Segundo / 0397848			Page 6 of 6

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-12-796-12465	**LCS**	**Solid**	**GC/MS GGG**	**03/17/17**	**03/17/17 14:29**	**170317L038**

Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	ME CL	Qualifiers
Benzene	50.00	52.01	104	80-120	73-127	
Carbon Tetrachloride	50.00	51.90	104	65-137	53-149	
Chlorobenzene	50.00	55.26	111	80-120	73-127	
1,2-Dibromoethane	50.00	53.76	108	80-120	73-127	
1,2-Dichlorobenzene	50.00	56.11	112	80-120	73-127	
1,2-Dichloroethane	50.00	53.24	106	80-120	73-127	
1,1-Dichloroethene	50.00	51.93	104	68-128	58-138	
Ethylbenzene	50.00	54.62	109	80-120	73-127	
Toluene	50.00	53.49	107	80-120	73-127	
Trichloroethene	50.00	51.35	103	80-120	73-127	
Vinyl Chloride	50.00	50.75	101	67-127	57-137	
p/m-Xylene	100.0	110.5	111	75-125	67-133	
o-Xylene	50.00	53.95	108	75-125	67-133	
Methyl-t-Butyl Ether (MTBE)	50.00	48.13	96	70-124	61-133	
Tert-Butyl Alcohol (TBA)	250.0	281.1	112	73-121	65-129	
Diisopropyl Ether (DIPE)	50.00	48.89	98	69-129	59-139	
Ethyl-t-Butyl Ether (ETBE)	50.00	45.56	91	70-124	61-133	
Tert-Amyl-Methyl Ether (TAME)	50.00	45.03	90	74-122	66-130	
Ethanol	500.0	550.6	110	51-135	37-149	

Total number of LCS compounds: 19
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

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RPD: Relative Percent Difference. CL: Control Limits

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Sample Analysis Summary Report

Work Order: 17-03-1154 Page 1 of 1

Method	Extraction	Chemist ID	Instrument	Analytical Location
EPA 6010B	EPA 3050B	935	ICP 7300	1
EPA 7471A	EPA 7471A Total	868	Mercury 08	1
EPA 8015B (M)	EPA 3550B	972	GC 45	1
EPA 8260B	EPA 5030C	867	GC/MS LL	2
EPA 8260B	EPA 5030C	1023	GC/MS GGG	2

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Glossary of Terms and Qualifiers

Work Order: 17-03-1154 Page 1 of 1

Qualifiers	Definition
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
CI	See case narrative.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

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Virendra Patel

From: Marlene Dawes <Marlene.Dawes@erm.com>
Sent: Thursday, March 16, 2017 10:29 AM
To: Virendra Patel
Cc: Erick Ovalle
Subject: RE: SRC for INFINEON - El Segundo -- 17-03-1154 <Response requested>

This is correct. The project number is 0397848.

From: Virendra Patel [mailto:VirendraPatel@eurofinsUS.com]
Sent: Thursday, March 16, 2017 10:16 AM
To: Marlene Dawes
Cc: Erick Ovalle
Subject: SRC for INFINEON - El Segundo -- 17-03-1154 <Response requested>
Importance: High

Sample receipt confirmation attached. **Please review and advise of any changes required.**

Please supply the project number for this site.

Please call with any questions or concerns.

Best Regards,

Virendra Patel
Project Manager

Eurofins Calscience, Inc.
7440 Lincoln Way
Garden Grove, CA 92841
USA
P: +1 714 895 5494
F: +1 714 894 7501

Email: virendrapatel@eurofinsUS.com
Website: www.eurofinsUS.com/Calscience

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CHAIN-OF-CUSTODY RECORD

Date 3/14/17
Page 1 of 2

WO NO. / LAB USE ONLY
17-03-1154

LABORATORY CLIENT: ERM
ADDRESS: 1920 MAIN STREET, SUITE 300
CITY: IRVINE STATE: CA ZIP: 92614
TEL: 949-623-4670 E-MAIL: MARLEN.DAWES@ERM.COM

CLIENT PROJECT NAME / NO.: INFINEON - EL SEGUNDO
PROJECT CONTACT: MARLENE DAWES
GLOBAL ID:
LOG CODE:
P.O. NO.:
LAB CONTACT OR QUOTE NO:
SAMPLER(S): (PRINT) MELISSA MEEUWSEN

TURNAROUND TIME (Rush surcharges may apply to any TAT not "STANDARD"):
☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAYS ☒ STANDARD

EDD
☐ COELT EDF ☐ OTHER

SPECIAL INSTRUCTIONS:

REQUESTED ANALYSES
Please check box or fill in blank as needed.

LAB USE ONLY	SAMPLE ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	Unpreserved	Preserved	Field Filtered	TPH(g) ☐ GRO	TPH(d) ☐ DRO	TPH ☐ C6-C36 ☒ C6-C44	TPH ____	BTEX / MTBE ☐ 8260 ☐ ____	VOCs (8260)	Oxygenates (8260)	Prep (5035) ☐ En Core ☐ Terra Core	SVOCs (8270)	Pesticides (8081)	PCBs (8082)	PAHs ☐ 8270 ☐ 8270 SIM	T22 Metals ☒ 6010/747X ☐ 6020/747X	Cr(VI) ☐ 7196 ☐ 7199 ☐ 218.6				
1	SB-20-0-1	3/14/17	1534	Soil	3	3	—				X			X							X				
2	SB-11-0-1		1544	Soil	3						X			X							X				
3	SB-12-0-1		1547	Soil	3						X			X							X				
4	SB-13-0-1		1550	Soil	3						X			X							X				
5	SB-10-1-2		1554	Soil	3						X			X							X				
6	SB-1-0-1		1557	Soil	3						X			X							X				
7	SB-7-0-1		1601	Soil	3						X			X							X				
8	SB-5-0-1		1604	Soil	3						X			X							X				
9	SB-6-0-1		1611	Soil	3						X			X							X				
10	SB-2-1-2		1615	Soil	3						X			X							X				

Relinquished by: (Signature) MELISSA MEEUWSEN ERM	Received by: (Signature/Affiliation) EC2	Date: 3/15/17	Time: 1530
Relinquished by: (Signature)	Received by: (Signature/Affiliation) EC1	Date: 3/15/17	Time: 1830
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:

2016-04-01-Revision

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CHAIN-OF-CUSTODY RECORD

WO NO. / LAB USE ONLY: 17-03-1154

Date 3/14/17
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LABORATORY CLIENT: ERM
ADDRESS: 1920 Main Street, Suite 300
CITY: Irvine STATE: CA ZIP: 92614
TEL: 949-623-4670 E-MAIL: marlene.dawes@erm.com

CLIENT PROJECT NAME / NO.: INFINEON - EL SEGUNDO
PROJECT CONTACT: Marlene Dawes
GLOBAL ID:
LOG CODE:
P.O. NO.:
LAB CONTACT OR QUOTE NO:
SAMPLER(S): (PRINT) Melissa Meerdsen

TURNAROUND TIME (Rush surcharges may apply to any TAT not "STANDARD"):
☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAYS ☑ STANDARD

EDD
☐ COELT EDF ☐ OTHER

SPECIAL INSTRUCTIONS:

REQUESTED ANALYSES
Please check box or fill in blank as needed.

LAB USE ONLY	SAMPLE ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	Unpreserved	Preserved	Field Filtered	TPH(g) ☐ GRO	TPH(d) ☐ DRO	TPH ☐ C6-C36 ☒ C6-C44	TPH ____	BTEX / MTBE ☐ 8260 ☐ ____	VOCs (8260)	Oxygenates (8260)	Prep (5035) ☐ En Core ☐ Terra Core	SVOCs (8270)	Pesticides (8081)	PCBs (8082)	PAHs ☐ 8270 ☐ 8270 SIM	T22 Metals ☒ 6010/747X ☐ 6020/747X	Cr(VI) ☐ 7196 ☐ 7199 ☐ 218.6
11	SB-3-0-1	3/14/17	1618	Soil	3	3					X			X							X	
12	SB-9-0-1	"	1622	Soil	3	3					X			X							X	
13	SB-4-0-1	"	1625	Soil	3	3					X			X							X	
14	SB-19-0-1	"	1628	Soil	3	3					X			X							X	
15	SBB2-1-0-1	3/15/17	905	Soil	3	3					X			X							X	
16	SBB2-4-0-1	"	935	Soil	3	3					X			X							X	
17	SBB2-5-3-4	"	1050	Soil	3	3					X			X							X	

Relinquished by: (Signature) Melissa Meerdsen — Received by: (Signature/Affiliation) ECT — Date: 3/15/17 — Time: 1530
Relinquished by: (Signature) — Received by: (Signature/Affiliation) ECT — Date: 3/15/17 — Time: 1830
Relinquished by: (Signature) — Received by: (Signature/Affiliation) — Date: — Time:

2016-04-01-Revision

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WORK ORDER NUMBER: 17-03- 1154

SAMPLE RECEIPT CHECKLIST

COOLER 1 OF 2

CLIENT: ERM

DATE: 03 / 15 / 2017

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)

Thermometer ID: SC3B (CF: 0.0°C); Temperature (w/o CF): 3.7 °C (w/ CF): 3.7 °C; ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____)

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling

☐ Sample(s) received at ambient temperature; placed on ice for transport by courier

Ambient Temperature: ☐ Air ☐ Filter Checked by: 638

CUSTODY SEAL:

Cooler ☐ Present and Intact ☐ Present but Not Intact ☐ Not Present ☐ N/A Checked by: 678

Sample(s) ☐ Present and Intact ☐ Present but Not Intact ☑ Not Present ☐ N/A Checked by: 1053

SAMPLE CONDITION:	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ Sampling date ☐ Sampling time ☐ Matrix ☐ Number of containers			
☐ No analysis requested ☐ Not relinquished ☐ No relinquished date ☐ No relinquished time			
Sampler's name indicated on COC	☑	☐	☐
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and in good condition	☑	☐	☐
Proper containers for analyses requested	☑	☐	☐
Sufficient volume/mass for analyses requested	☑	☐	☐
Samples received within holding time	☑	☐	☐
Aqueous samples for certain analyses received within 15-minute holding time			
☐ pH ☐ Residual Chlorine ☐ Dissolved Sulfide ☐ Dissolved Oxygen	☐	☐	☑
Proper preservation chemical(s) noted on COC and/or sample container	☐	☐	☑
Unpreserved aqueous sample(s) received for certain analyses			
☐ Volatile Organics ☐ Total Metals ☐ Dissolved Metals			
Container(s) for certain analysis free of headspace	☐	☐	☑
☐ Volatile Organics ☐ Dissolved Gases (RSK-175) ☐ Dissolved Oxygen (SM 4500)			
☐ Carbon Dioxide (SM 4500) ☐ Ferrous Iron (SM 3500) ☐ Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE: **(Trip Blank Lot Number:** _____)

Aqueous: ☐ VOA ☐ VOA**h** ☐ VOA**na$_2$** ☐ 100PJ ☐ 100PJ**na$_2$** ☐ 125AGB ☐ 125AGB**h** ☐ 125AGB**p** ☐ 125PB

☐ 125PB**znna** ☐ 250AGB ☐ 250CGB ☐ 250CGB**s** ☐ 250PB ☐ 250PB**n** ☐ 500AGB ☐ 500AGJ ☐ 500AGJ**s**

☐ 500PB ☐ 1AGB ☐ 1AGB**na$_2$** ☐ 1AGB**s** ☐ 1PB ☐ 1PB**na** ☐ _____ ☐ _____ ☐ _____ ☐ _____

Solid: ☐ 4ozCGJ ☑ 8ozCGJ 3 ☐ 16ozCGJ ☐ Sleeve (_____) ☐ EnCores® (_____) ☐ TerraCores® (_____) ☐ _____

Air: ☐ Tedlar™ ☐ Canister ☐ Sorbent Tube ☐ PUF ☐ _____ **Other Matrix** (_____): ☐ _____ ☐ _____

Container: **A** = Amber, **B** = Bottle, **C** = Clear, **E** = Envelope, **G** = Glass, **J** = Jar, **P** = Plastic, and **Z** = Ziploc/Resealable Bag

Preservative: **b** = buffered, **f** = filtered, **h** = HCl, **n** = HNO_3, **na** = NaOH, **na$_2$** = $Na_2S_2O_3$, **p** = H_3PO_4, **s** = H_2SO_4, **u** = ultra-pure, **x** = Na_2SO_3+$NaHSO_4.H_2O$, **znna** = Zn $(CH_3CO_2)_2$ + NaOH

Labeled/Checked by: 1053

Reviewed by: 459

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WORK ORDER NUMBER: 17-03- 1154

SAMPLE RECEIPT CHECKLIST

COOLER 2 OF 2

CLIENT: ERM

DATE: 03 / 15 / 2017

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)

Thermometer ID: SC3B (CF: 0.0°C); Temperature (w/o CF): 3.9 °C (w/ CF): 3.9 °C; ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____)

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling

☐ Sample(s) received at ambient temperature; placed on ice for transport by courier

Ambient Temperature: ☐ Air ☐ Filter Checked by: 678

CUSTODY SEAL:

Cooler ☐ Present and Intact ☐ Present but Not Intact ☑ Not Present ☐ N/A Checked by: 678

Sample(s) ☐ Present and Intact ☐ Present but Not Intact ☑ Not Present ☐ N/A Checked by: 1053

SAMPLE CONDITION:	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ Sampling date ☐ Sampling time ☐ Matrix ☐ Number of containers			
☐ No analysis requested ☐ Not relinquished ☐ No relinquished date ☐ No relinquished time			
Sampler's name indicated on COC	☑	☐	☐
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and in good condition	☑	☐	☐
Proper containers for analyses requested	☑	☐	☐
Sufficient volume/mass for analyses requested	☑	☐	☐
Samples received within holding time	☑	☐	☐
Aqueous samples for certain analyses received within 15-minute holding time			
☐ pH ☐ Residual Chlorine ☐ Dissolved Sulfide ☐ Dissolved Oxygen	☐	☐	☑
Proper preservation chemical(s) noted on COC and/or sample container	☐	☐	☑
Unpreserved aqueous sample(s) received for certain analyses			
☐ Volatile Organics ☐ Total Metals ☐ Dissolved Metals			
Container(s) for certain analysis free of headspace	☐	☐	☑
☐ Volatile Organics ☐ Dissolved Gases (RSK-175) ☐ Dissolved Oxygen (SM 4500)			
☐ Carbon Dioxide (SM 4500) ☐ Ferrous Iron (SM 3500) ☐ Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE: (Trip Blank Lot Number: _____)

Aqueous: ☐ VOA ☐ VOA**h** ☐ VOA**na$_2$** ☐ 100PJ ☐ 100PJ**na$_2$** ☐ 125AGB ☐ 125AGB**h** ☐ 125AGB**p** ☐ 125PB

☐ 125PB**znna** ☐ 250AGB ☐ 250CGB ☐ 250CGB**s** ☐ 250PB ☐ 250PB**n** ☐ 500AGB ☐ 500AGJ ☐ 500AGJ**s**

☐ 500PB ☐ 1AGB ☐ 1AGB**na$_2$** ☐ 1AGB**s** ☐ 1PB ☐ 1PB**na** ☐ _____ ☐ _____ ☐ _____ ☐ _____

Solid: ☐ 4ozCGJ ☑ 8ozCGJ ☐ 16ozCGJ ☐ Sleeve (_____) ☐ EnCores® (_____) ☐ TerraCores® (_____) ☐ _____

Air: ☐ Tedlar™ ☐ Canister ☐ Sorbent Tube ☐ PUF ☐ _____ **Other Matrix** (_____): ☐ _____ ☐ _____

Container: **A** = Amber, **B** = Bottle, **C** = Clear, **E** = Envelope, **G** = Glass, **J** = Jar, **P** = Plastic, and **Z** = Ziploc/Resealable Bag

Preservative: **b** = buffered, **f** = filtered, **h** = HCl, **n** = HNO_3, **na** = NaOH, **na$_2$** = $Na_2S_2O_3$, **p** = H_3PO_4, Labeled/Checked by: 1053

s = H_2SO_4, **u** = ultra-pure, **x** = Na_2SO_3+$NaHSO_4.H_2O$, **znna** = Zn $(CH_3CO_2)_2$ + NaOH Reviewed by: [illegible]

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Work Order Number: 17-03-1154

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Work Order Narrative

Work Order: 17-03-1154 Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 03/15/17. They were assigned to Work Order 17-03-1154.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

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Sample Summary

Client:	ERM-WEST 1920 Main Street, Suite 300 Irvine, CA 92614-7279	Work Order:	17-03-1154
		Project Name:	INFINEON - El Segundo / 0397848
		PO Number:	0397848
		Date/Time Received:	03/15/17 18:30
		Number of Containers:	51
Attn:	Marlene Dawes		

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
SB-20-0-1	17-03-1154-1	03/14/17 15:34	3	Solid
SB-11-0-1	17-03-1154-2	03/14/17 15:44	3	Solid
SB-12-0-1	17-03-1154-3	03/14/17 15:47	3	Solid
SB-13-0-1	17-03-1154-4	03/14/17 15:50	3	Solid
SB-10-1-2	17-03-1154-5	03/14/17 15:54	3	Solid
SB-1-0-1	17-03-1154-6	03/14/17 15:57	3	Solid
SB-7-0-1	17-03-1154-7	03/14/17 16:01	3	Solid
SB-5-0-1	17-03-1154-8	03/14/17 16:04	3	Solid
SB-6-0-1	17-03-1154-9	03/14/17 16:11	3	Solid
SB-2-1-2	17-03-1154-10	03/14/17 16:15	3	Solid
SB-3-0-1	17-03-1154-11	03/14/17 16:18	3	Solid
SB-9-0-1	17-03-1154-12	03/14/17 16:22	3	Solid
SB-4-0-1	17-03-1154-13	03/14/17 16:25	3	Solid
SB-19-0-1	17-03-1154-14	03/14/17 16:28	3	Solid
SBB2-1-0-1	17-03-1154-15	03/15/17 09:05	3	Solid
SBB2-4-0-1	17-03-1154-16	03/15/17 09:35	3	Solid
SBB2-5-3-4	17-03-1154-17	03/15/17 10:50	3	Solid

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: N/A
Method: EPA 7196A
Units: mg/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-10-1-2	**17-03-1154-5-B**	**03/14/17 15:54**	**Solid**	**UV 7**	**04/01/17**	**04/01/17 16:17**	**H0401CRL1**

Parameter	Result	RL	DF	Qualifiers
Chromium, Hexavalent	ND	0.80	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-19-0-1	**17-03-1154-14-B**	**03/14/17 16:28**	**Solid**	**UV 7**	**04/01/17**	**04/01/17 16:17**	**H0401CRL1**

Parameter	Result	RL	DF	Qualifiers
Chromium, Hexavalent	ND	0.80	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-05-001-5991**	**N/A**	**Solid**	**UV 7**	**04/01/17**	**04/01/17 16:17**	**H0401CRL1**

Parameter	Result	RL	DF	Qualifiers
Chromium, Hexavalent	ND	0.020	0.0250	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Quality Control - Spike/Spike Duplicate

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	N/A
		Method:	EPA 7196A
Project: INFINEON - El Segundo / 0397848			Page 1 of 1

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
17-03-1223-4	**Sample**	**Solid**	**UV 7**	**04/01/17**	**04/01/17 16:17**	**H0401CRS1**
17-03-1223-4	**Matrix Spike**	**Solid**	**UV 7**	**04/01/17**	**04/01/17 16:17**	**H0401CRS1**
17-03-1223-4	**Matrix Spike Duplicate**	**Solid**	**UV 7**	**04/01/17**	**04/01/17 16:17**	**H0401CRS1**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Chromium, Hexavalent	1.115	20.00	19.16	90	19.00	89	75-125	1	0-25	

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS/LCSD

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: INFINEON - El Segundo / 0397848

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: N/A
Method: EPA 7196A

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-05-001-5991	**LCS**	**Solid**	**UV 7**	**04/01/17**	**04/01/17 16:17**	**H0401CRL1**
099-05-001-5991	**LCSD**	**Solid**	**UV 7**	**04/01/17**	**04/01/17 16:17**	**H0401CRL1**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Chromium, Hexavalent	0.5000	0.4655	93	0.4779	96	80-120	3	0-20	

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RPD: Relative Percent Difference. CL: Control Limits

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Sample Analysis Summary Report

Work Order: 17-03-1154 Page 1 of 1

Method	Extraction	Chemist ID	Instrument	Analytical Location
EPA 7196A	N/A	990	UV 7	1

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Glossary of Terms and Qualifiers

Work Order: 17-03-1154 Page 1 of 1

Qualifiers	Definition
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
CI	See case narrative.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

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APPENDIX D SOIL BORING LOGS - ERM 2017 PHASE II SITE INVESTIGATION BLOCK 2

ERM
1920 Main Street, Suite 300
Irvine, CA 92614
Phone: (949) 623-4700
Fax: (949) 623-4711

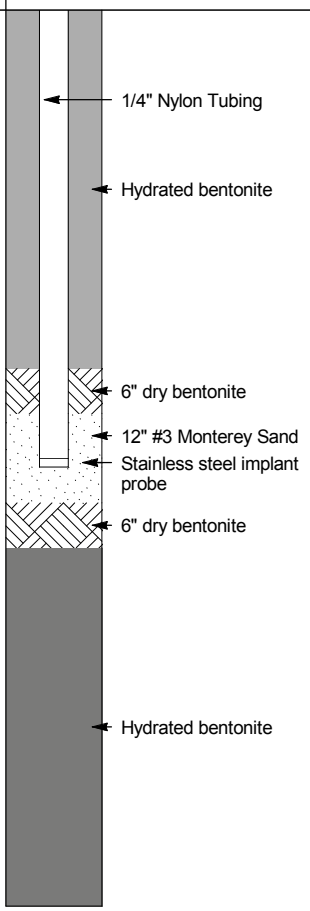
LOG OF MONITORING WELL: SBB2-1

Project Number: 0397848
Project Name: Infineon - Block 2
Location: El Segundo, CA
Contractor: Cascade Drilling
Drilling Method: Hand Auger
Logged By: M. Meeuwsen
Reviewed By:
Surface Elevation: feet MSL

Date Started: 3/15/2017
Date Completed: 3/15/2017
Total Depth: 10 feet
Borehole Diameter: 5 inches
Initial Water Level: feet bgs
Notes:

Depth (ft)	Sample Interval	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations
					Concrete.
		0.8	SP		SAND (SP), very fine to fine grained, mostly fine, little silt, loose, brown, moist.
		0.8			
2		0.7			
		1.7			
4		0.6			
		0.6			
6		0.8			
		1.5			
8		1.4			
		0.8			
10					Total Depth - 10 feet bgs
12					
14					

WELL DIAGRAM



ERM
1920 Main Street, Suite 300
Irvine, CA 92614
Phone: (949) 623-4700
Fax: (949) 623-4711

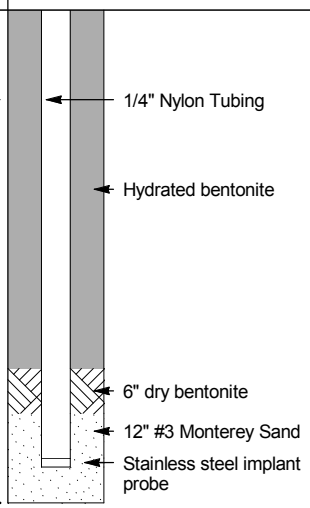
LOG OF MONITORING WELL: SBB2-3

Project Number: 0397848
Project Name: Infineon - Block 2
Location: El Segundo, CA
Contractor: Cascade Drilling
Drilling Method: Hand Auger
Logged By: M. Meeuwsen
Reviewed By:
Surface Elevation: feet MSL

Date Started: 3/15/2017
Date Completed: 3/15/2017
Total Depth: 5.5 feet
Borehole Diameter: 5 inches
Initial Water Level: feet bgs
Notes:

Depth (ft)	Sample Interval	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations
					Concrete.
		0.6	SP		SAND (SP), very fine to fine grained, mostly fine, little silt, loose, brown, moist.
2		0.7			
		1.0			
4		0.6			
		0.6			
					Total Depth - 5.5 feet bgs
6					
8					
10					
12					
14					

WELL DIAGRAM



ERM
1920 Main Street, Suite 300
Irvine, CA 92614
Phone: (949) 623-4700
Fax: (949) 623-4711

LOG OF MONITORING WELL: SBB2-4

Project Number: 0397848
Project Name: Infineon - Block 2
Location: El Segundo, CA
Contractor: Cascade Drilling
Drilling Method: Hand Auger
Logged By: M. Meeuwsen
Reviewed By:
Surface Elevation: feet MSL

Date Started: 3/15/2017
Date Completed: 3/15/2017
Total Depth: 10 feet
Borehole Diameter: 5 inches
Initial Water Level: feet bgs
Notes:

Depth (ft)	Sample Interval	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations	WELL DIAGRAM
0					Concrete.	
		0.2	SP		SAND with Gravel (SPG), fine gravel, angular.	
					SAND (SP), very fine to fine grained, mostly fine, little silt, loose, brown, moist.	
		0.3				
2		0.3				
		0.3				
4		0.3				
		0.4	SP			
6		0.3				
		0.2				
8		0.3				
		0.3				
10					Total Depth - 10 feet bgs	
12						
14						

ERM
1920 Main Street, Suite 300
Irvine, CA 92614
Phone: (949) 623-4700
Fax: (949) 623-4711

LOG OF MONITORING WELL: SBB2-5

Project Number: 0397848
Project Name: Infineon - Block 2
Location: El Segundo, CA
Contractor: Cascade Drilling
Drilling Method: Hand Auger
Logged By: M. Meeuwsen
Reviewed By:
Surface Elevation: feet MSL

Date Started: 3/15/2017
Date Completed: 3/15/2017
Total Depth: 5 feet
Borehole Diameter: 5 inches
Initial Water Level: feet bgs
Notes:

Depth (ft)	Sample Interval	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations	WELL DIAGRAM
					Asphalt.	
		1.0			SAND (SP), very fine to fine grained, mostly fine, little silt, loose, brown, moist.	1/4" Nylon Tubing
		16.2				Hydrated bentonite
2			SP			
		41.3				
		399.9				6" dry bentonite
4						
			SP		SAND with Gravel (SPG), very fine to fine sand, mostly fine, large angular gravel, trace concrete and asphalt, poorly graded.	12" #3 Monterey Sand
		4.8				Stainless steel implant probe
					Total Depth - 5 feet bgs	
6						
8						
10						
12						
14						

ERM
1920 Main Street, Suite 300
Irvine, CA 92614
Phone: (949) 623-4700
Fax: (949) 623-4711

LOG OF MONITORING WELL: SBB2-8

Project Number: 0397848
Project Name: Infineon - Block 2
Location: El Segundo, CA
Contractor: Cascade Drilling
Drilling Method: Hand Auger
Logged By: M. Meeuwsen
Reviewed By:
Surface Elevation: feet MSL

Date Started: 3/15/2017
Date Completed: 3/15/2017
Total Depth: 5.5 feet
Borehole Diameter: 5 inches
Initial Water Level: feet bgs
Notes:

Depth (ft)	Sample Interval	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations	WELL DIAGRAM
					Concrete.	
		0.0			SAND (SP), very fine to fine grained, mostly fine, little silt, loose, brown, moist.	1/4" Nylon Tubing
2		0.1				Hydrated bentonite
		0.2	SP			
		0.2				
4		0.0				6" dry bentonite
						12" #3 Monterey Sand
						Stainless steel implant probe
					Total Depth - 5.5 feet bgs	
6						
8						
10						
12						
14						

ERM
1920 Main Street, Suite 300
Irvine, CA 92614
Phone: (949) 623-4700
Fax: (949) 623-4711

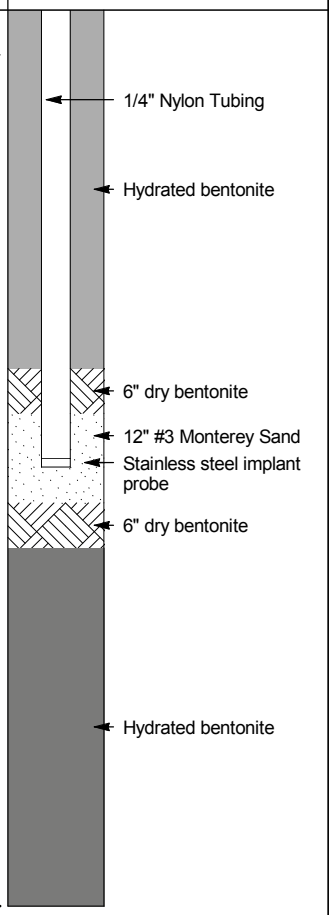
LOG OF MONITORING WELL: SBB2-9

Project Number: 0397848
Project Name: Infineon - Block 2
Location: El Segundo, CA
Contractor: Cascade Drilling
Drilling Method: Hand Auger and Direct Push
Logged By: M. Meeuwsen
Reviewed By:
Surface Elevation: feet MSL

Date Started: 3/15/2017
Date Completed: 3/15/2017
Total Depth: 10 feet
Borehole Diameter: 5 inches to 5 feet bgs; 2.2 inches to 10 feet bgs
Initial Water Level: feet bgs
Notes:

Depth (ft)	Sample Interval	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations
					Asphalt.
		0.6			SAND (SP), very fine to fine grained, mostly fine, little silt, loose, brown, moist.
		1.2			
2		2.0			
		3.1			
4					
		2.8			
			SP		Same as above, becomes dry.
		0.5			
6					
		0.7			
		1.0			
8					
		1.3			
		1.2			
10					Total Depth - 10 feet bgs
12					
14					

WELL DIAGRAM



ERM
1920 Main Street, Suite 300
Irvine, CA 92614
Phone: (949) 623-4700
Fax: (949) 623-4711

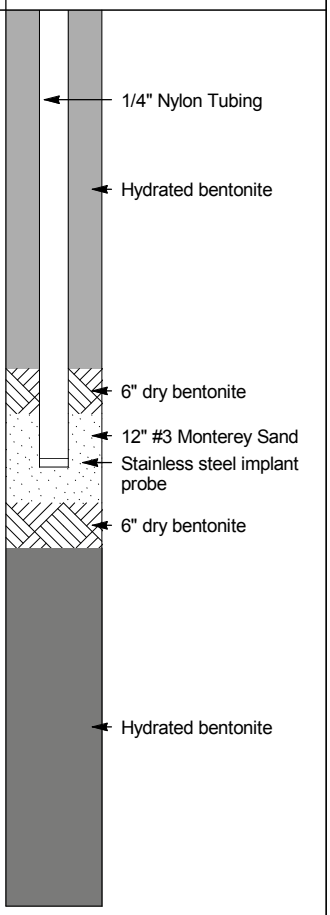
LOG OF MONITORING WELL: SBB2-10

Project Number: 0397848
Project Name: Infineon - Block 2
Location: El Segundo, CA
Contractor: Cascade Drilling
Drilling Method: Hand Auger and Direct Push
Logged By: M. Meeuwsen
Reviewed By:
Surface Elevation: feet MSL

Date Started: 3/15/2017
Date Completed: 3/15/2017
Total Depth: 10 feet
Borehole Diameter: 5 inches to 5 feet bgs; 2.2 inches to 10 feet bgs
Initial Water Level: feet bgs
Notes:

Depth (ft)	Sample Interval	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations
					Asphalt.
		13.5			SAND (SP), very fine to fine grained, mostly fine, trace large angular gravel, little silt, loose, brown, moist.
		14.9			
2		17.8			
		14.8			
4		10.2			
			SP		
		0.2			
6					Same as above, becomes dry.
		0.3			
		0.0			
8		0.2			
		0.2			
10					Total Depth - 10 feet bgs
12					
14					

WELL DIAGRAM



ERM
1920 Main Street, Suite 300
Irvine, CA 92614
Phone: (949) 623-4700
Fax: (949) 623-4711

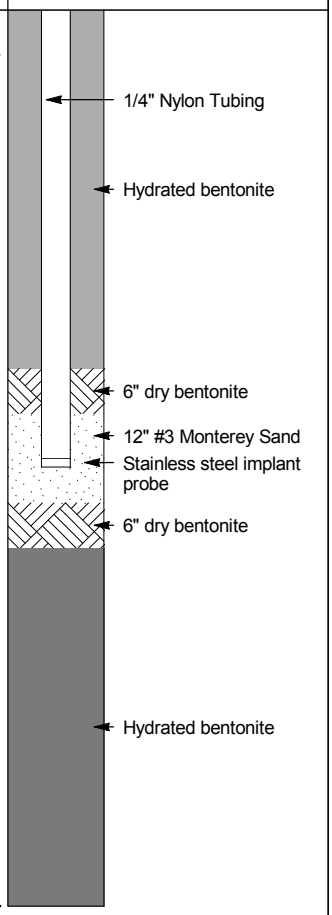
LOG OF MONITORING WELL: SBB2-11

Project Number: 0397848
Project Name: Infineon - Block 2
Location: El Segundo, CA
Contractor: Cascade Drilling
Drilling Method: Hand Auger
Logged By: M. Meeuwsen
Reviewed By:
Surface Elevation: feet MSL

Date Started: 3/15/2017
Date Completed: 3/15/2017
Total Depth: 10 feet
Borehole Diameter: 5 inches
Initial Water Level: feet bgs
Notes:

Depth (ft)	Sample Interval	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations
					Concrete.
		3.2			SAND (SP), very fine to fine grained, mostly fine, little silt, loose, brown, moist.
2					
4			SP		
6					
8					
10					Total Depth - 10 feet bgs
12					
14					

WELL DIAGRAM



ERM
1920 Main Street, Suite 300
Irvine, CA 92614
Phone: (949) 623-4700
Fax: (949) 623-4711

LOG OF MONITORING WELL: SBB2-12

Project Number: 0397848
Project Name: Infineon - Block 2
Location: El Segundo, CA
Contractor: Cascade Drilling
Drilling Method: Hand Auger
Logged By: M. Meeuwsen
Reviewed By:
Surface Elevation: feet MSL

Date Started: 3/17/2017
Date Completed: 3/17/2017
Total Depth: 10 feet
Borehole Diameter: 5 inches
Initial Water Level: feet bgs
Notes:

Depth (ft)	Sample Interval	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations	WELL DIAGRAM
		0.8			Concrete.	
		0.5			SAND (SP), very fine to fine grained, mostly fine, little silt, loose, brown, moist.	
2		0.3				
		0.3				
4					Same as above, becomes dry.	
		0.9				
		0.7	SP			
6		1.5				
	X					
	X	9.3				
8	X					
		5.5				
		2.0				
10					Total Depth - 10 feet bgs	
12						
14						

ERM
1920 Main Street, Suite 300
Irvine, CA 92614
Phone: (949) 623-4700
Fax: (949) 623-4711

LOG OF MONITORING WELL: SBB2-13

Project Number: 0397848
Project Name: Infineon - Block 2
Location: El Segundo, CA
Contractor: Cascade Drilling
Drilling Method: Hand Auger
Logged By: M. Meeuwsen
Reviewed By:
Surface Elevation: feet MSL

Date Started: 3/15/2017
Date Completed: 3/15/2017
Total Depth: 10 feet
Borehole Diameter: 5 inches
Initial Water Level: feet bgs
Notes:

Depth (ft)	Sample Interval	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations	WELL DIAGRAM
		13.2			Concrete.	
		106.9			SAND (SP), very fine to fine grained, mostly fine, little silt, loose, brown, moist.	
2		105.9				
		81.8				
4		50.2				
		21	SP			
6		11.4				
		67				
8		7.9				
		4.8				
10					Total Depth - 10 feet bgs	
12						
14						

APPENDIX E LABORATORY REPORTS ERM 2017 PHASE II SITE INVESTIGATION - BLOCK 2

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Client Project Name: INFINEON - El Segundo / 0397848
Work Order Number: 17-03-1154

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Work Order Narrative

Work Order: 17-03-1154 Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 03/15/17. They were assigned to Work Order 17-03-1154.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

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Sample Summary

Client:	ERM-WEST 1920 Main Street, Suite 300 Irvine, CA 92614-7279	Work Order:	17-03-1154
		Project Name:	INFINEON - El Segundo / 0397848
		PO Number:	
		Date/Time Received:	03/15/17 18:30
		Number of Containers:	51
Attn:	Marlene Dawes		

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
SB-20-0-1	17-03-1154-1	03/14/17 15:34	3	Solid
SB-11-0-1	17-03-1154-2	03/14/17 15:44	3	Solid
SB-12-0-1	17-03-1154-3	03/14/17 15:47	3	Solid
SB-13-0-1	17-03-1154-4	03/14/17 15:50	3	Solid
SB-10-1-2	17-03-1154-5	03/14/17 15:54	3	Solid
SB-1-0-1	17-03-1154-6	03/14/17 15:57	3	Solid
SB-7-0-1	17-03-1154-7	03/14/17 16:01	3	Solid
SB-5-0-1	17-03-1154-8	03/14/17 16:04	3	Solid
SB-6-0-1	17-03-1154-9	03/14/17 16:11	3	Solid
SB-2-1-2	17-03-1154-10	03/14/17 16:15	3	Solid
SB-3-0-1	17-03-1154-11	03/14/17 16:18	3	Solid
SB-9-0-1	17-03-1154-12	03/14/17 16:22	3	Solid
SB-4-0-1	17-03-1154-13	03/14/17 16:25	3	Solid
SB-19-0-1	17-03-1154-14	03/14/17 16:28	3	Solid
SBB2-1-0-1	17-03-1154-15	03/15/17 09:05	3	Solid
SBB2-4-0-1	17-03-1154-16	03/15/17 09:35	3	Solid
SBB2-5-3-4	17-03-1154-17	03/15/17 10:50	3	Solid

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Detections Summary

Client:	ERM-WEST	Work Order:	17-03-1154
	1920 Main Street, Suite 300	Project Name:	INFINEON - El Segundo / 0397848
	Irvine, CA 92614-7279	Received:	03/15/17
Attn:	Marlene Dawes		

Client SampleID / Analyte	Result	Qualifiers	RL	Units	Method	Extraction
SB-20-0-1 (17-03-1154-1)						
Barium	20.3		0.483	mg/kg	EPA 6010B	EPA 3050B
Chromium	9.83		0.242	mg/kg	EPA 6010B	EPA 3050B
Cobalt	2.45		0.242	mg/kg	EPA 6010B	EPA 3050B
Copper	2.38		0.483	mg/kg	EPA 6010B	EPA 3050B
Lead	2.73		0.483	mg/kg	EPA 6010B	EPA 3050B
Nickel	3.65		0.242	mg/kg	EPA 6010B	EPA 3050B
Vanadium	13.1		0.242	mg/kg	EPA 6010B	EPA 3050B
Zinc	12.4		0.966	mg/kg	EPA 6010B	EPA 3050B
SB-11-0-1 (17-03-1154-2)						
Barium	41.5		0.493	mg/kg	EPA 6010B	EPA 3050B
Chromium	9.31		0.246	mg/kg	EPA 6010B	EPA 3050B
Cobalt	3.27		0.246	mg/kg	EPA 6010B	EPA 3050B
Copper	5.58		0.493	mg/kg	EPA 6010B	EPA 3050B
Lead	7.39		0.493	mg/kg	EPA 6010B	EPA 3050B
Nickel	4.46		0.246	mg/kg	EPA 6010B	EPA 3050B
Vanadium	15.3		0.246	mg/kg	EPA 6010B	EPA 3050B
Zinc	21.0		0.985	mg/kg	EPA 6010B	EPA 3050B
SB-12-0-1 (17-03-1154-3)						
Arsenic	0.991		0.728	mg/kg	EPA 6010B	EPA 3050B
Barium	34.5		0.485	mg/kg	EPA 6010B	EPA 3050B
Chromium	10.2		0.243	mg/kg	EPA 6010B	EPA 3050B
Cobalt	3.34		0.243	mg/kg	EPA 6010B	EPA 3050B
Copper	5.43		0.485	mg/kg	EPA 6010B	EPA 3050B
Lead	18.1		0.485	mg/kg	EPA 6010B	EPA 3050B
Nickel	4.30		0.243	mg/kg	EPA 6010B	EPA 3050B
Selenium	1.02		0.728	mg/kg	EPA 6010B	EPA 3050B
Vanadium	16.3		0.243	mg/kg	EPA 6010B	EPA 3050B
Zinc	41.8		0.971	mg/kg	EPA 6010B	EPA 3050B

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* MDL is shown

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Detections Summary

Client:	ERM-WEST	Work Order:	17-03-1154
	1920 Main Street, Suite 300	Project Name:	INFINEON - El Segundo / 0397848
	Irvine, CA 92614-7279	Received:	03/15/17
Attn:	Marlene Dawes		Page 2 of 7

Client SampleID / Analyte	Result	Qualifiers	RL	Units	Method	Extraction
SB-13-0-1 (17-03-1154-4)						
Arsenic	1.04		0.721	mg/kg	EPA 6010B	EPA 3050B
Barium	44.3		0.481	mg/kg	EPA 6010B	EPA 3050B
Chromium	9.55		0.240	mg/kg	EPA 6010B	EPA 3050B
Cobalt	3.52		0.240	mg/kg	EPA 6010B	EPA 3050B
Copper	3.70		0.481	mg/kg	EPA 6010B	EPA 3050B
Lead	2.08		0.481	mg/kg	EPA 6010B	EPA 3050B
Nickel	4.34		0.240	mg/kg	EPA 6010B	EPA 3050B
Selenium	0.854		0.721	mg/kg	EPA 6010B	EPA 3050B
Vanadium	14.6		0.240	mg/kg	EPA 6010B	EPA 3050B
Zinc	10.3		0.962	mg/kg	EPA 6010B	EPA 3050B
SB-10-1-2 (17-03-1154-5)						
Arsenic	1.31		0.735	mg/kg	EPA 6010B	EPA 3050B
Barium	40.3		0.490	mg/kg	EPA 6010B	EPA 3050B
Chromium	12.5		0.245	mg/kg	EPA 6010B	EPA 3050B
Cobalt	4.29		0.245	mg/kg	EPA 6010B	EPA 3050B
Copper	4.25		0.490	mg/kg	EPA 6010B	EPA 3050B
Lead	3.07		0.490	mg/kg	EPA 6010B	EPA 3050B
Nickel	5.41		0.245	mg/kg	EPA 6010B	EPA 3050B
Selenium	0.793		0.735	mg/kg	EPA 6010B	EPA 3050B
Vanadium	17.0		0.245	mg/kg	EPA 6010B	EPA 3050B
Zinc	13.4		0.980	mg/kg	EPA 6010B	EPA 3050B
SB-1-0-1 (17-03-1154-6)						
Arsenic	0.828		0.714	mg/kg	EPA 6010B	EPA 3050B
Barium	36.6		0.476	mg/kg	EPA 6010B	EPA 3050B
Chromium	8.73		0.238	mg/kg	EPA 6010B	EPA 3050B
Cobalt	3.17		0.238	mg/kg	EPA 6010B	EPA 3050B
Copper	3.39		0.476	mg/kg	EPA 6010B	EPA 3050B
Lead	2.15		0.476	mg/kg	EPA 6010B	EPA 3050B
Nickel	3.71		0.238	mg/kg	EPA 6010B	EPA 3050B
Selenium	0.778		0.714	mg/kg	EPA 6010B	EPA 3050B
Vanadium	13.0		0.238	mg/kg	EPA 6010B	EPA 3050B
Zinc	10.0		0.952	mg/kg	EPA 6010B	EPA 3050B

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Detections Summary

Client:	ERM-WEST	Work Order:	17-03-1154
	1920 Main Street, Suite 300	Project Name:	INFINEON - El Segundo / 0397848
	Irvine, CA 92614-7279	Received:	03/15/17
Attn:	Marlene Dawes		Page 3 of 7

Client SampleID / Analyte	Result	Qualifiers	RL	Units	Method	Extraction
SB-7-0-1 (17-03-1154-7)						
Arsenic	0.956		0.721	mg/kg	EPA 6010B	EPA 3050B
Barium	31.0		0.481	mg/kg	EPA 6010B	EPA 3050B
Cadmium	0.557		0.481	mg/kg	EPA 6010B	EPA 3050B
Chromium	8.42		0.240	mg/kg	EPA 6010B	EPA 3050B
Cobalt	11.1		0.240	mg/kg	EPA 6010B	EPA 3050B
Copper	9.63		0.481	mg/kg	EPA 6010B	EPA 3050B
Lead	17.4		0.481	mg/kg	EPA 6010B	EPA 3050B
Nickel	4.45		0.240	mg/kg	EPA 6010B	EPA 3050B
Selenium	0.751		0.721	mg/kg	EPA 6010B	EPA 3050B
Vanadium	14.2		0.240	mg/kg	EPA 6010B	EPA 3050B
Zinc	40.0		0.962	mg/kg	EPA 6010B	EPA 3050B
C29-C32	6.4		5.0	mg/kg	EPA 8015B (M)	EPA 3550B
C6-C44 Total	16		5.0	mg/kg	EPA 8015B (M)	EPA 3550B
SB-5-0-1 (17-03-1154-8)						
Arsenic	0.783		0.718	mg/kg	EPA 6010B	EPA 3050B
Barium	40.7		0.478	mg/kg	EPA 6010B	EPA 3050B
Chromium	10.1		0.239	mg/kg	EPA 6010B	EPA 3050B
Cobalt	4.83		0.239	mg/kg	EPA 6010B	EPA 3050B
Copper	5.29		0.478	mg/kg	EPA 6010B	EPA 3050B
Lead	2.28		0.478	mg/kg	EPA 6010B	EPA 3050B
Nickel	5.11		0.239	mg/kg	EPA 6010B	EPA 3050B
Vanadium	15.4		0.239	mg/kg	EPA 6010B	EPA 3050B
Zinc	12.8		0.957	mg/kg	EPA 6010B	EPA 3050B
SB-6-0-1 (17-03-1154-9)						
Barium	48.9		0.485	mg/kg	EPA 6010B	EPA 3050B
Cadmium	0.795		0.485	mg/kg	EPA 6010B	EPA 3050B
Chromium	8.34		0.243	mg/kg	EPA 6010B	EPA 3050B
Cobalt	14.5		0.243	mg/kg	EPA 6010B	EPA 3050B
Copper	13.2		0.485	mg/kg	EPA 6010B	EPA 3050B
Lead	31.7		0.485	mg/kg	EPA 6010B	EPA 3050B
Nickel	4.50		0.243	mg/kg	EPA 6010B	EPA 3050B
Selenium	1.01		0.728	mg/kg	EPA 6010B	EPA 3050B
Vanadium	17.9		0.243	mg/kg	EPA 6010B	EPA 3050B
Zinc	60.1		0.971	mg/kg	EPA 6010B	EPA 3050B
C6-C44 Total	12		5.0	mg/kg	EPA 8015B (M)	EPA 3550B

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Detections Summary

Client:	ERM-WEST	Work Order:	17-03-1154
	1920 Main Street, Suite 300	Project Name:	INFINEON - El Segundo / 0397848
	Irvine, CA 92614-7279	Received:	03/15/17
Attn:	Marlene Dawes		Page 4 of 7

Client SampleID

Analyte	Result	Qualifiers	RL	Units	Method	Extraction
SB-2-1-2 (17-03-1154-10)						
Arsenic	0.949		0.714	mg/kg	EPA 6010B	EPA 3050B
Barium	24.7		0.476	mg/kg	EPA 6010B	EPA 3050B
Chromium	6.82		0.238	mg/kg	EPA 6010B	EPA 3050B
Cobalt	2.27		0.238	mg/kg	EPA 6010B	EPA 3050B
Copper	2.68		0.476	mg/kg	EPA 6010B	EPA 3050B
Lead	3.53		0.476	mg/kg	EPA 6010B	EPA 3050B
Nickel	2.79		0.238	mg/kg	EPA 6010B	EPA 3050B
Vanadium	12.5		0.238	mg/kg	EPA 6010B	EPA 3050B
Zinc	9.45		0.952	mg/kg	EPA 6010B	EPA 3050B
SB-3-0-1 (17-03-1154-11)						
Arsenic	0.814		0.728	mg/kg	EPA 6010B	EPA 3050B
Barium	27.1		0.485	mg/kg	EPA 6010B	EPA 3050B
Cadmium	0.783		0.485	mg/kg	EPA 6010B	EPA 3050B
Chromium	10.2		0.243	mg/kg	EPA 6010B	EPA 3050B
Cobalt	6.25		0.243	mg/kg	EPA 6010B	EPA 3050B
Copper	10.1		0.485	mg/kg	EPA 6010B	EPA 3050B
Lead	32.1		0.485	mg/kg	EPA 6010B	EPA 3050B
Nickel	4.30		0.243	mg/kg	EPA 6010B	EPA 3050B
Selenium	0.947		0.728	mg/kg	EPA 6010B	EPA 3050B
Vanadium	13.9		0.243	mg/kg	EPA 6010B	EPA 3050B
Zinc	94.1		0.971	mg/kg	EPA 6010B	EPA 3050B
C25-C28	28		25	mg/kg	EPA 8015B (M)	EPA 3550B
C29-C32	44		25	mg/kg	EPA 8015B (M)	EPA 3550B
C33-C36	26		25	mg/kg	EPA 8015B (M)	EPA 3550B
C6-C44 Total	120		25	mg/kg	EPA 8015B (M)	EPA 3550B

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Detections Summary

Client:	ERM-WEST	Work Order:	17-03-1154
	1920 Main Street, Suite 300	Project Name:	INFINEON - El Segundo / 0397848
	Irvine, CA 92614-7279	Received:	03/15/17
Attn:	Marlene Dawes		Page 5 of 7

Client SampleID / Analyte	Result	Qualifiers	RL	Units	Method	Extraction
SB-9-0-1 (17-03-1154-12)						
Arsenic	1.17		0.721	mg/kg	EPA 6010B	EPA 3050B
Barium	59.0		0.481	mg/kg	EPA 6010B	EPA 3050B
Cadmium	1.20		0.481	mg/kg	EPA 6010B	EPA 3050B
Chromium	10.4		0.240	mg/kg	EPA 6010B	EPA 3050B
Cobalt	9.33		0.240	mg/kg	EPA 6010B	EPA 3050B
Copper	12.0		0.481	mg/kg	EPA 6010B	EPA 3050B
Lead	65.0		0.481	mg/kg	EPA 6010B	EPA 3050B
Nickel	5.80		0.240	mg/kg	EPA 6010B	EPA 3050B
Selenium	1.12		0.721	mg/kg	EPA 6010B	EPA 3050B
Vanadium	22.9		0.240	mg/kg	EPA 6010B	EPA 3050B
Zinc	71.4		0.962	mg/kg	EPA 6010B	EPA 3050B
C25-C28	18		4.9	mg/kg	EPA 8015B (M)	EPA 3550B
C29-C32	30		4.9	mg/kg	EPA 8015B (M)	EPA 3550B
C33-C36	19		4.9	mg/kg	EPA 8015B (M)	EPA 3550B
C37-C40	12		4.9	mg/kg	EPA 8015B (M)	EPA 3550B
C6-C44 Total	88		4.9	mg/kg	EPA 8015B (M)	EPA 3550B
SB-4-0-1 (17-03-1154-13)						
Barium	26.1		0.493	mg/kg	EPA 6010B	EPA 3050B
Cadmium	0.672		0.493	mg/kg	EPA 6010B	EPA 3050B
Chromium	8.68		0.246	mg/kg	EPA 6010B	EPA 3050B
Cobalt	3.08		0.246	mg/kg	EPA 6010B	EPA 3050B
Copper	5.79		0.493	mg/kg	EPA 6010B	EPA 3050B
Lead	30.3		0.493	mg/kg	EPA 6010B	EPA 3050B
Nickel	4.16		0.246	mg/kg	EPA 6010B	EPA 3050B
Selenium	0.836		0.739	mg/kg	EPA 6010B	EPA 3050B
Vanadium	15.3		0.246	mg/kg	EPA 6010B	EPA 3050B
Zinc	62.0		0.985	mg/kg	EPA 6010B	EPA 3050B
C25-C28	13		5.0	mg/kg	EPA 8015B (M)	EPA 3550B
C29-C32	23		5.0	mg/kg	EPA 8015B (M)	EPA 3550B
C33-C36	16		5.0	mg/kg	EPA 8015B (M)	EPA 3550B
C37-C40	8.6		5.0	mg/kg	EPA 8015B (M)	EPA 3550B
C6-C44 Total	65		5.0	mg/kg	EPA 8015B (M)	EPA 3550B

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Detections Summary

Client:	ERM-WEST	Work Order:	17-03-1154
	1920 Main Street, Suite 300	Project Name:	INFINEON - El Segundo / 0397848
	Irvine, CA 92614-7279	Received:	03/15/17
Attn:	Marlene Dawes		Page 6 of 7

Client SampleID / Analyte	Result	Qualifiers	RL	Units	Method	Extraction
SB-19-0-1 (17-03-1154-14)						
Barium	15.8		0.488	mg/kg	EPA 6010B	EPA 3050B
Cadmium	5.84		0.488	mg/kg	EPA 6010B	EPA 3050B
Chromium	11.6		0.244	mg/kg	EPA 6010B	EPA 3050B
Cobalt	4.65		0.244	mg/kg	EPA 6010B	EPA 3050B
Copper	17.0		0.488	mg/kg	EPA 6010B	EPA 3050B
Lead	3.33		0.488	mg/kg	EPA 6010B	EPA 3050B
Nickel	8.94		0.244	mg/kg	EPA 6010B	EPA 3050B
Selenium	0.736		0.732	mg/kg	EPA 6010B	EPA 3050B
Vanadium	14.7		0.244	mg/kg	EPA 6010B	EPA 3050B
Zinc	237		0.976	mg/kg	EPA 6010B	EPA 3050B
SBB2-1-0-1 (17-03-1154-15)						
Arsenic	1.24		0.735	mg/kg	EPA 6010B	EPA 3050B
Barium	17.4		0.490	mg/kg	EPA 6010B	EPA 3050B
Chromium	15.2		0.245	mg/kg	EPA 6010B	EPA 3050B
Cobalt	3.54		0.245	mg/kg	EPA 6010B	EPA 3050B
Copper	2.73		0.490	mg/kg	EPA 6010B	EPA 3050B
Lead	1.55		0.490	mg/kg	EPA 6010B	EPA 3050B
Nickel	6.53		0.245	mg/kg	EPA 6010B	EPA 3050B
Vanadium	14.5		0.245	mg/kg	EPA 6010B	EPA 3050B
Zinc	8.29		0.980	mg/kg	EPA 6010B	EPA 3050B
SBB2-4-0-1 (17-03-1154-16)						
Arsenic	1.19		0.721	mg/kg	EPA 6010B	EPA 3050B
Barium	20.7		0.481	mg/kg	EPA 6010B	EPA 3050B
Chromium	13.9		0.240	mg/kg	EPA 6010B	EPA 3050B
Cobalt	2.99		0.240	mg/kg	EPA 6010B	EPA 3050B
Copper	4.21		0.481	mg/kg	EPA 6010B	EPA 3050B
Lead	1.52		0.481	mg/kg	EPA 6010B	EPA 3050B
Molybdenum	0.343		0.240	mg/kg	EPA 6010B	EPA 3050B
Nickel	6.45		0.240	mg/kg	EPA 6010B	EPA 3050B
Vanadium	15.0		0.240	mg/kg	EPA 6010B	EPA 3050B
Zinc	9.20		0.962	mg/kg	EPA 6010B	EPA 3050B

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Detections Summary

Client:	ERM-WEST	Work Order:	17-03-1154
	1920 Main Street, Suite 300	Project Name:	INFINEON - El Segundo / 0397848
	Irvine, CA 92614-7279	Received:	03/15/17
Attn:	Marlene Dawes		Page 7 of 7

Client SampleID

Analyte	Result	Qualifiers	RL	Units	Method	Extraction
SBB2-5-3-4 (17-03-1154-17)						
Arsenic	2.61		0.728	mg/kg	EPA 6010B	EPA 3050B
Barium	66.9		0.485	mg/kg	EPA 6010B	EPA 3050B
Cadmium	2.61		0.485	mg/kg	EPA 6010B	EPA 3050B
Chromium	17.8		0.243	mg/kg	EPA 6010B	EPA 3050B
Cobalt	5.93		0.243	mg/kg	EPA 6010B	EPA 3050B
Copper	17.9		0.485	mg/kg	EPA 6010B	EPA 3050B
Lead	65.5		0.485	mg/kg	EPA 6010B	EPA 3050B
Molybdenum	0.463		0.243	mg/kg	EPA 6010B	EPA 3050B
Nickel	8.84		0.243	mg/kg	EPA 6010B	EPA 3050B
Selenium	3.98		0.728	mg/kg	EPA 6010B	EPA 3050B
Vanadium	29.1		0.243	mg/kg	EPA 6010B	EPA 3050B
Zinc	66.3		0.971	mg/kg	EPA 6010B	EPA 3050B
C19-C20	15		5.1	mg/kg	EPA 8015B (M)	EPA 3550B
C21-C22	11		5.1	mg/kg	EPA 8015B (M)	EPA 3550B
C23-C24	14		5.1	mg/kg	EPA 8015B (M)	EPA 3550B
C25-C28	36		5.1	mg/kg	EPA 8015B (M)	EPA 3550B
C29-C32	52		5.1	mg/kg	EPA 8015B (M)	EPA 3550B
C33-C36	33		5.1	mg/kg	EPA 8015B (M)	EPA 3550B
C37-C40	16		5.1	mg/kg	EPA 8015B (M)	EPA 3550B
C6-C44 Total	180		5.1	mg/kg	EPA 8015B (M)	EPA 3550B
Tetrachloroethene	21		4.9	ug/kg	EPA 8260B	EPA 5030C

Subcontracted analyses, if any, are not included in this summary.

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Analytical Report

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)
		Units:	mg/kg
Project: INFINEON - El Segundo / 0397848			Page 1 of 18

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-20-0-1	**17-03-1154-1-B**	**03/14/17 15:34**	**Solid**	**GC 45**	**03/17/17**	**03/18/17 20:14**	**170317B17**

Comment(s): - The total concentration includes individual carbon range concentrations (estimated), if any, below the RL reported as ND.

Parameter	Result	RL	DF	Qualifiers
C6	ND	4.9	1.00	
C7	ND	4.9	1.00	
C8	ND	4.9	1.00	
C9-C10	ND	4.9	1.00	
C11-C12	ND	4.9	1.00	
C13-C14	ND	4.9	1.00	
C15-C16	ND	4.9	1.00	
C17-C18	ND	4.9	1.00	
C19-C20	ND	4.9	1.00	
C21-C22	ND	4.9	1.00	
C23-C24	ND	4.9	1.00	
C25-C28	ND	4.9	1.00	
C29-C32	ND	4.9	1.00	
C33-C36	ND	4.9	1.00	
C37-C40	ND	4.9	1.00	
C41-C44	ND	4.9	1.00	
C6-C44 Total	ND	4.9	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	97	61-145	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)
		Units:	mg/kg
Project: INFINEON - El Segundo / 0397848			Page 2 of 18

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-11-0-1	**17-03-1154-2-B**	**03/14/17 15:44**	**Solid**	**GC 45**	**03/17/17**	**03/18/17 20:35**	**170317B17**

Comment(s): - The total concentration includes individual carbon range concentrations (estimated), if any, below the RL reported as ND.

Parameter	Result	RL	DF	Qualifiers
C6	ND	4.9	1.00	
C7	ND	4.9	1.00	
C8	ND	4.9	1.00	
C9-C10	ND	4.9	1.00	
C11-C12	ND	4.9	1.00	
C13-C14	ND	4.9	1.00	
C15-C16	ND	4.9	1.00	
C17-C18	ND	4.9	1.00	
C19-C20	ND	4.9	1.00	
C21-C22	ND	4.9	1.00	
C23-C24	ND	4.9	1.00	
C25-C28	ND	4.9	1.00	
C29-C32	ND	4.9	1.00	
C33-C36	ND	4.9	1.00	
C37-C40	ND	4.9	1.00	
C41-C44	ND	4.9	1.00	
C6-C44 Total	ND	4.9	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	95	61-145	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)
		Units:	mg/kg
Project: INFINEON - El Segundo / 0397848			Page 3 of 18

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-12-0-1	**17-03-1154-3-B**	**03/14/17 15:47**	**Solid**	**GC 45**	**03/17/17**	**03/18/17 20:56**	**170317B17**

Comment(s): - The total concentration includes individual carbon range concentrations (estimated), if any, below the RL reported as ND.

Parameter	Result	RL	DF	Qualifiers
C6	ND	5.0	1.00	
C7	ND	5.0	1.00	
C8	ND	5.0	1.00	
C9-C10	ND	5.0	1.00	
C11-C12	ND	5.0	1.00	
C13-C14	ND	5.0	1.00	
C15-C16	ND	5.0	1.00	
C17-C18	ND	5.0	1.00	
C19-C20	ND	5.0	1.00	
C21-C22	ND	5.0	1.00	
C23-C24	ND	5.0	1.00	
C25-C28	ND	5.0	1.00	
C29-C32	ND	5.0	1.00	
C33-C36	ND	5.0	1.00	
C37-C40	ND	5.0	1.00	
C41-C44	ND	5.0	1.00	
C6-C44 Total	ND	5.0	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	98	61-145	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)
		Units:	mg/kg
Project: INFINEON - El Segundo / 0397848			Page 4 of 18

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-13-0-1	**17-03-1154-4-B**	**03/14/17 15:50**	**Solid**	**GC 45**	**03/17/17**	**03/18/17 21:17**	**170317B17**

Comment(s): - The total concentration includes individual carbon range concentrations (estimated), if any, below the RL reported as ND.

Parameter	Result	RL	DF	Qualifiers
C6	ND	5.0	1.00	
C7	ND	5.0	1.00	
C8	ND	5.0	1.00	
C9-C10	ND	5.0	1.00	
C11-C12	ND	5.0	1.00	
C13-C14	ND	5.0	1.00	
C15-C16	ND	5.0	1.00	
C17-C18	ND	5.0	1.00	
C19-C20	ND	5.0	1.00	
C21-C22	ND	5.0	1.00	
C23-C24	ND	5.0	1.00	
C25-C28	ND	5.0	1.00	
C29-C32	ND	5.0	1.00	
C33-C36	ND	5.0	1.00	
C37-C40	ND	5.0	1.00	
C41-C44	ND	5.0	1.00	
C6-C44 Total	ND	5.0	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	104	61-145	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)
		Units:	mg/kg
Project: INFINEON - El Segundo / 0397848			Page 5 of 18

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-10-1-2	**17-03-1154-5-B**	**03/14/17 15:54**	**Solid**	**GC 45**	**03/17/17**	**03/18/17 21:38**	**170317B17**

Comment(s): - The total concentration includes individual carbon range concentrations (estimated), if any, below the RL reported as ND.

Parameter	Result	RL	DF	Qualifiers
C6	ND	5.1	1.00	
C7	ND	5.1	1.00	
C8	ND	5.1	1.00	
C9-C10	ND	5.1	1.00	
C11-C12	ND	5.1	1.00	
C13-C14	ND	5.1	1.00	
C15-C16	ND	5.1	1.00	
C17-C18	ND	5.1	1.00	
C19-C20	ND	5.1	1.00	
C21-C22	ND	5.1	1.00	
C23-C24	ND	5.1	1.00	
C25-C28	ND	5.1	1.00	
C29-C32	ND	5.1	1.00	
C33-C36	ND	5.1	1.00	
C37-C40	ND	5.1	1.00	
C41-C44	ND	5.1	1.00	
C6-C44 Total	ND	5.1	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	94	61-145	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)
		Units:	mg/kg
Project: INFINEON - El Segundo / 0397848			Page 6 of 18

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-1-0-1	**17-03-1154-6-B**	**03/14/17 15:57**	**Solid**	**GC 45**	**03/17/17**	**03/18/17 22:00**	**170317B17**

Comment(s): - The total concentration includes individual carbon range concentrations (estimated), if any, below the RL reported as ND.

Parameter	Result	RL	DF	Qualifiers
C6	ND	5.0	1.00	
C7	ND	5.0	1.00	
C8	ND	5.0	1.00	
C9-C10	ND	5.0	1.00	
C11-C12	ND	5.0	1.00	
C13-C14	ND	5.0	1.00	
C15-C16	ND	5.0	1.00	
C17-C18	ND	5.0	1.00	
C19-C20	ND	5.0	1.00	
C21-C22	ND	5.0	1.00	
C23-C24	ND	5.0	1.00	
C25-C28	ND	5.0	1.00	
C29-C32	ND	5.0	1.00	
C33-C36	ND	5.0	1.00	
C37-C40	ND	5.0	1.00	
C41-C44	ND	5.0	1.00	
C6-C44 Total	ND	5.0	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	92	61-145	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)
		Units:	mg/kg
Project: INFINEON - El Segundo / 0397848			Page 7 of 18

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-7-0-1	**17-03-1154-7-B**	**03/14/17 16:01**	**Solid**	**GC 45**	**03/17/17**	**03/18/17 22:22**	**170317B17**

Comment(s): - The total concentration includes individual carbon range concentrations (estimated), if any, below the RL reported as ND.

Parameter	Result	RL	DF	Qualifiers
C6	ND	5.0	1.00	
C7	ND	5.0	1.00	
C8	ND	5.0	1.00	
C9-C10	ND	5.0	1.00	
C11-C12	ND	5.0	1.00	
C13-C14	ND	5.0	1.00	
C15-C16	ND	5.0	1.00	
C17-C18	ND	5.0	1.00	
C19-C20	ND	5.0	1.00	
C21-C22	ND	5.0	1.00	
C23-C24	ND	5.0	1.00	
C25-C28	ND	5.0	1.00	
C29-C32	6.4	5.0	1.00	
C33-C36	ND	5.0	1.00	
C37-C40	ND	5.0	1.00	
C41-C44	ND	5.0	1.00	
C6-C44 Total	16	5.0	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	102	61-145	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)
		Units:	mg/kg
Project: INFINEON - El Segundo / 0397848			Page 8 of 18

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-5-0-1	**17-03-1154-8-B**	**03/14/17 16:04**	**Solid**	**GC 45**	**03/17/17**	**03/18/17 22:44**	**170317B17**

Comment(s): - The total concentration includes individual carbon range concentrations (estimated), if any, below the RL reported as ND.

Parameter	Result	RL	DF	Qualifiers
C6	ND	4.9	1.00	
C7	ND	4.9	1.00	
C8	ND	4.9	1.00	
C9-C10	ND	4.9	1.00	
C11-C12	ND	4.9	1.00	
C13-C14	ND	4.9	1.00	
C15-C16	ND	4.9	1.00	
C17-C18	ND	4.9	1.00	
C19-C20	ND	4.9	1.00	
C21-C22	ND	4.9	1.00	
C23-C24	ND	4.9	1.00	
C25-C28	ND	4.9	1.00	
C29-C32	ND	4.9	1.00	
C33-C36	ND	4.9	1.00	
C37-C40	ND	4.9	1.00	
C41-C44	ND	4.9	1.00	
C6-C44 Total	ND	4.9	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	95	61-145	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)
		Units:	mg/kg
Project: INFINEON - El Segundo / 0397848			Page 9 of 18

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-6-0-1	**17-03-1154-9-B**	**03/14/17 16:11**	**Solid**	**GC 45**	**03/17/17**	**03/18/17 23:06**	**170317B17**

Comment(s): - The total concentration includes individual carbon range concentrations (estimated), if any, below the RL reported as ND.

Parameter	Result	RL	DF	Qualifiers
C6	ND	5.0	1.00	
C7	ND	5.0	1.00	
C8	ND	5.0	1.00	
C9-C10	ND	5.0	1.00	
C11-C12	ND	5.0	1.00	
C13-C14	ND	5.0	1.00	
C15-C16	ND	5.0	1.00	
C17-C18	ND	5.0	1.00	
C19-C20	ND	5.0	1.00	
C21-C22	ND	5.0	1.00	
C23-C24	ND	5.0	1.00	
C25-C28	ND	5.0	1.00	
C29-C32	ND	5.0	1.00	
C33-C36	ND	5.0	1.00	
C37-C40	ND	5.0	1.00	
C41-C44	ND	5.0	1.00	
C6-C44 Total	12	5.0	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	98	61-145	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)
		Units:	mg/kg
Project: INFINEON - El Segundo / 0397848			Page 10 of 18

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-2-1-2	**17-03-1154-10-B**	**03/14/17 16:15**	**Solid**	**GC 45**	**03/17/17**	**03/18/17 23:28**	**170317B17**

Comment(s): - The total concentration includes individual carbon range concentrations (estimated), if any, below the RL reported as ND.

Parameter	Result	RL	DF	Qualifiers
C6	ND	4.9	1.00	
C7	ND	4.9	1.00	
C8	ND	4.9	1.00	
C9-C10	ND	4.9	1.00	
C11-C12	ND	4.9	1.00	
C13-C14	ND	4.9	1.00	
C15-C16	ND	4.9	1.00	
C17-C18	ND	4.9	1.00	
C19-C20	ND	4.9	1.00	
C21-C22	ND	4.9	1.00	
C23-C24	ND	4.9	1.00	
C25-C28	ND	4.9	1.00	
C29-C32	ND	4.9	1.00	
C33-C36	ND	4.9	1.00	
C37-C40	ND	4.9	1.00	
C41-C44	ND	4.9	1.00	
C6-C44 Total	ND	4.9	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	100	61-145	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)
		Units:	mg/kg
Project: INFINEON - El Segundo / 0397848			Page 11 of 18

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-3-0-1	**17-03-1154-11-B**	**03/14/17 16:18**	**Solid**	**GC 45**	**03/17/17**	**03/19/17 00:12**	**170317B17**

Comment(s): - The total concentration includes individual carbon range concentrations (estimated), if any, below the RL reported as ND.

Parameter	Result	RL	DF	Qualifiers
C6	ND	25	5.00	
C7	ND	25	5.00	
C8	ND	25	5.00	
C9-C10	ND	25	5.00	
C11-C12	ND	25	5.00	
C13-C14	ND	25	5.00	
C15-C16	ND	25	5.00	
C17-C18	ND	25	5.00	
C19-C20	ND	25	5.00	
C21-C22	ND	25	5.00	
C23-C24	ND	25	5.00	
C25-C28	28	25	5.00	
C29-C32	44	25	5.00	
C33-C36	26	25	5.00	
C37-C40	ND	25	5.00	
C41-C44	ND	25	5.00	
C6-C44 Total	120	25	5.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	97	61-145	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 3550B
Method: EPA 8015B (M)
Units: mg/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-9-0-1	**17-03-1154-12-B**	**03/14/17 16:22**	**Solid**	**GC 45**	**03/17/17**	**03/19/17 00:33**	**170317B17**

Comment(s): - The total concentration includes individual carbon range concentrations (estimated), if any, below the RL reported as ND.

Parameter	Result	RL	DF	Qualifiers
C6	ND	4.9	1.00	
C7	ND	4.9	1.00	
C8	ND	4.9	1.00	
C9-C10	ND	4.9	1.00	
C11-C12	ND	4.9	1.00	
C13-C14	ND	4.9	1.00	
C15-C16	ND	4.9	1.00	
C17-C18	ND	4.9	1.00	
C19-C20	ND	4.9	1.00	
C21-C22	ND	4.9	1.00	
C23-C24	ND	4.9	1.00	
C25-C28	18	4.9	1.00	
C29-C32	30	4.9	1.00	
C33-C36	19	4.9	1.00	
C37-C40	12	4.9	1.00	
C41-C44	ND	4.9	1.00	
C6-C44 Total	88	4.9	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	101	61-145	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)
		Units:	mg/kg
Project: INFINEON - El Segundo / 0397848			Page 13 of 18

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-4-0-1	**17-03-1154-13-B**	**03/14/17 16:25**	**Solid**	**GC 45**	**03/17/17**	**03/19/17 00:54**	**170317B17**

Comment(s): - The total concentration includes individual carbon range concentrations (estimated), if any, below the RL reported as ND.

Parameter	Result	RL	DF	Qualifiers
C6	ND	5.0	1.00	
C7	ND	5.0	1.00	
C8	ND	5.0	1.00	
C9-C10	ND	5.0	1.00	
C11-C12	ND	5.0	1.00	
C13-C14	ND	5.0	1.00	
C15-C16	ND	5.0	1.00	
C17-C18	ND	5.0	1.00	
C19-C20	ND	5.0	1.00	
C21-C22	ND	5.0	1.00	
C23-C24	ND	5.0	1.00	
C25-C28	13	5.0	1.00	
C29-C32	23	5.0	1.00	
C33-C36	16	5.0	1.00	
C37-C40	8.6	5.0	1.00	
C41-C44	ND	5.0	1.00	
C6-C44 Total	65	5.0	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	104	61-145	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)
		Units:	mg/kg
Project: INFINEON - El Segundo / 0397848			Page 14 of 18

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-19-0-1	**17-03-1154-14-B**	**03/14/17 16:28**	**Solid**	**GC 45**	**03/17/17**	**03/19/17 01:16**	**170317B17**

Comment(s): - The total concentration includes individual carbon range concentrations (estimated), if any, below the RL reported as ND.

Parameter	Result	RL	DF	Qualifiers
C6	ND	4.9	1.00	
C7	ND	4.9	1.00	
C8	ND	4.9	1.00	
C9-C10	ND	4.9	1.00	
C11-C12	ND	4.9	1.00	
C13-C14	ND	4.9	1.00	
C15-C16	ND	4.9	1.00	
C17-C18	ND	4.9	1.00	
C19-C20	ND	4.9	1.00	
C21-C22	ND	4.9	1.00	
C23-C24	ND	4.9	1.00	
C25-C28	ND	4.9	1.00	
C29-C32	ND	4.9	1.00	
C33-C36	ND	4.9	1.00	
C37-C40	ND	4.9	1.00	
C41-C44	ND	4.9	1.00	
C6-C44 Total	ND	4.9	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	102	61-145	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)
		Units:	mg/kg
Project: INFINEON - El Segundo / 0397848			Page 15 of 18

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SBB2-1-0-1	**17-03-1154-15-B**	**03/15/17 09:05**	**Solid**	**GC 45**	**03/17/17**	**03/19/17 01:37**	**170317B17**

Comment(s): - The total concentration includes individual carbon range concentrations (estimated), if any, below the RL reported as ND.

Parameter	Result	RL	DF	Qualifiers
C6	ND	5.0	1.00	
C7	ND	5.0	1.00	
C8	ND	5.0	1.00	
C9-C10	ND	5.0	1.00	
C11-C12	ND	5.0	1.00	
C13-C14	ND	5.0	1.00	
C15-C16	ND	5.0	1.00	
C17-C18	ND	5.0	1.00	
C19-C20	ND	5.0	1.00	
C21-C22	ND	5.0	1.00	
C23-C24	ND	5.0	1.00	
C25-C28	ND	5.0	1.00	
C29-C32	ND	5.0	1.00	
C33-C36	ND	5.0	1.00	
C37-C40	ND	5.0	1.00	
C41-C44	ND	5.0	1.00	
C6-C44 Total	ND	5.0	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	104	61-145	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 3550B
Method: EPA 8015B (M)
Units: mg/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SBB2-4-0-1	**17-03-1154-16-B**	**03/15/17 09:35**	**Solid**	**GC 45**	**03/17/17**	**03/19/17 01:59**	**170317B17**

Comment(s): - The total concentration includes individual carbon range concentrations (estimated), if any, below the RL reported as ND.

Parameter	Result	RL	DF	Qualifiers
C6	ND	5.0	1.00	
C7	ND	5.0	1.00	
C8	ND	5.0	1.00	
C9-C10	ND	5.0	1.00	
C11-C12	ND	5.0	1.00	
C13-C14	ND	5.0	1.00	
C15-C16	ND	5.0	1.00	
C17-C18	ND	5.0	1.00	
C19-C20	ND	5.0	1.00	
C21-C22	ND	5.0	1.00	
C23-C24	ND	5.0	1.00	
C25-C28	ND	5.0	1.00	
C29-C32	ND	5.0	1.00	
C33-C36	ND	5.0	1.00	
C37-C40	ND	5.0	1.00	
C41-C44	ND	5.0	1.00	
C6-C44 Total	ND	5.0	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	98	61-145	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 3550B
Method: EPA 8015B (M)
Units: mg/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SBB2-5-3-4	**17-03-1154-17-B**	**03/15/17 10:50**	**Solid**	**GC 45**	**03/17/17**	**03/19/17 02:21**	**170317B17**

Comment(s): - The total concentration includes individual carbon range concentrations (estimated), if any, below the RL reported as ND.

Parameter	Result	RL	DF	Qualifiers
C6	ND	5.1	1.00	
C7	ND	5.1	1.00	
C8	ND	5.1	1.00	
C9-C10	ND	5.1	1.00	
C11-C12	ND	5.1	1.00	
C13-C14	ND	5.1	1.00	
C15-C16	ND	5.1	1.00	
C17-C18	ND	5.1	1.00	
C19-C20	15	5.1	1.00	
C21-C22	11	5.1	1.00	
C23-C24	14	5.1	1.00	
C25-C28	36	5.1	1.00	
C29-C32	52	5.1	1.00	
C33-C36	33	5.1	1.00	
C37-C40	16	5.1	1.00	
C41-C44	ND	5.1	1.00	
C6-C44 Total	180	5.1	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	103	61-145	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 3550B
Method: EPA 8015B (M)
Units: mg/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-15-490-2537**	**N/A**	**Solid**	**GC 45**	**03/17/17**	**03/18/17 18:49**	**170317B17**

Parameter	Result	RL	DF	Qualifiers
C6	ND	5.0	1.00	
C7	ND	5.0	1.00	
C8	ND	5.0	1.00	
C9-C10	ND	5.0	1.00	
C11-C12	ND	5.0	1.00	
C13-C14	ND	5.0	1.00	
C15-C16	ND	5.0	1.00	
C17-C18	ND	5.0	1.00	
C19-C20	ND	5.0	1.00	
C21-C22	ND	5.0	1.00	
C23-C24	ND	5.0	1.00	
C25-C28	ND	5.0	1.00	
C29-C32	ND	5.0	1.00	
C33-C36	ND	5.0	1.00	
C37-C40	ND	5.0	1.00	
C41-C44	ND	5.0	1.00	
C6-C44 Total	ND	5.0	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	95	61-145	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 3050B
Method: EPA 6010B
Units: mg/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-20-0-1	**17-03-1154-1-B**	**03/14/17 15:34**	**Solid**	**ICP 7300**	**03/22/17**	**03/23/17 12:53**	**170322L05**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.725	0.966	
Arsenic	ND	0.725	0.966	
Barium	20.3	0.483	0.966	
Beryllium	ND	0.242	0.966	
Cadmium	ND	0.483	0.966	
Chromium	9.83	0.242	0.966	
Cobalt	2.45	0.242	0.966	
Copper	2.38	0.483	0.966	
Lead	2.73	0.483	0.966	
Molybdenum	ND	0.242	0.966	
Nickel	3.65	0.242	0.966	
Selenium	ND	0.725	0.966	
Silver	ND	0.242	0.966	
Thallium	ND	0.725	0.966	
Vanadium	13.1	0.242	0.966	
Zinc	12.4	0.966	0.966	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 3050B
Method: EPA 6010B
Units: mg/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-11-0-1	**17-03-1154-2-B**	**03/14/17 15:44**	**Solid**	**ICP 7300**	**03/22/17**	**03/23/17 12:57**	**170322L05**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.739	0.985	
Arsenic	ND	0.739	0.985	
Barium	41.5	0.493	0.985	
Beryllium	ND	0.246	0.985	
Cadmium	ND	0.493	0.985	
Chromium	9.31	0.246	0.985	
Cobalt	3.27	0.246	0.985	
Copper	5.58	0.493	0.985	
Lead	7.39	0.493	0.985	
Molybdenum	ND	0.246	0.985	
Nickel	4.46	0.246	0.985	
Selenium	ND	0.739	0.985	
Silver	ND	0.246	0.985	
Thallium	ND	0.739	0.985	
Vanadium	15.3	0.246	0.985	
Zinc	21.0	0.985	0.985	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 3050B
Method: EPA 6010B
Units: mg/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-12-0-1	**17-03-1154-3-B**	**03/14/17 15:47**	**Solid**	**ICP 7300**	**03/22/17**	**03/23/17 12:58**	**170322L05**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.728	0.971	
Arsenic	0.991	0.728	0.971	
Barium	34.5	0.485	0.971	
Beryllium	ND	0.243	0.971	
Cadmium	ND	0.485	0.971	
Chromium	10.2	0.243	0.971	
Cobalt	3.34	0.243	0.971	
Copper	5.43	0.485	0.971	
Lead	18.1	0.485	0.971	
Molybdenum	ND	0.243	0.971	
Nickel	4.30	0.243	0.971	
Selenium	1.02	0.728	0.971	
Silver	ND	0.243	0.971	
Thallium	ND	0.728	0.971	
Vanadium	16.3	0.243	0.971	
Zinc	41.8	0.971	0.971	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 3050B
Method: EPA 6010B
Units: mg/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-13-0-1	**17-03-1154-4-B**	**03/14/17 15:50**	**Solid**	**ICP 7300**	**03/22/17**	**03/23/17 13:00**	**170322L05**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.721	0.962	
Arsenic	1.04	0.721	0.962	
Barium	44.3	0.481	0.962	
Beryllium	ND	0.240	0.962	
Cadmium	ND	0.481	0.962	
Chromium	9.55	0.240	0.962	
Cobalt	3.52	0.240	0.962	
Copper	3.70	0.481	0.962	
Lead	2.08	0.481	0.962	
Molybdenum	ND	0.240	0.962	
Nickel	4.34	0.240	0.962	
Selenium	0.854	0.721	0.962	
Silver	ND	0.240	0.962	
Thallium	ND	0.721	0.962	
Vanadium	14.6	0.240	0.962	
Zinc	10.3	0.962	0.962	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 3050B
Method: EPA 6010B
Units: mg/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-10-1-2	**17-03-1154-5-B**	**03/14/17 15:54**	**Solid**	**ICP 7300**	**03/22/17**	**03/23/17 13:01**	**170322L05**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.735	0.980	
Arsenic	1.31	0.735	0.980	
Barium	40.3	0.490	0.980	
Beryllium	ND	0.245	0.980	
Cadmium	ND	0.490	0.980	
Chromium	12.5	0.245	0.980	
Cobalt	4.29	0.245	0.980	
Copper	4.25	0.490	0.980	
Lead	3.07	0.490	0.980	
Molybdenum	ND	0.245	0.980	
Nickel	5.41	0.245	0.980	
Selenium	0.793	0.735	0.980	
Silver	ND	0.245	0.980	
Thallium	ND	0.735	0.980	
Vanadium	17.0	0.245	0.980	
Zinc	13.4	0.980	0.980	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 3050B
Method: EPA 6010B
Units: mg/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-1-0-1	**17-03-1154-6-B**	**03/14/17 15:57**	**Solid**	**ICP 7300**	**03/22/17**	**03/23/17 13:02**	**170322L05**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.714	0.952	
Arsenic	0.828	0.714	0.952	
Barium	36.6	0.476	0.952	
Beryllium	ND	0.238	0.952	
Cadmium	ND	0.476	0.952	
Chromium	8.73	0.238	0.952	
Cobalt	3.17	0.238	0.952	
Copper	3.39	0.476	0.952	
Lead	2.15	0.476	0.952	
Molybdenum	ND	0.238	0.952	
Nickel	3.71	0.238	0.952	
Selenium	0.778	0.714	0.952	
Silver	ND	0.238	0.952	
Thallium	ND	0.714	0.952	
Vanadium	13.0	0.238	0.952	
Zinc	10.0	0.952	0.952	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 3050B
Method: EPA 6010B
Units: mg/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-7-0-1	**17-03-1154-7-B**	**03/14/17 16:01**	**Solid**	**ICP 7300**	**03/22/17**	**03/23/17 13:03**	**170322L05**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.721	0.962	
Arsenic	0.956	0.721	0.962	
Barium	31.0	0.481	0.962	
Beryllium	ND	0.240	0.962	
Cadmium	0.557	0.481	0.962	
Chromium	8.42	0.240	0.962	
Cobalt	11.1	0.240	0.962	
Copper	9.63	0.481	0.962	
Lead	17.4	0.481	0.962	
Molybdenum	ND	0.240	0.962	
Nickel	4.45	0.240	0.962	
Selenium	0.751	0.721	0.962	
Silver	ND	0.240	0.962	
Thallium	ND	0.721	0.962	
Vanadium	14.2	0.240	0.962	
Zinc	40.0	0.962	0.962	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 3050B
Method: EPA 6010B
Units: mg/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-5-0-1	**17-03-1154-8-B**	**03/14/17 16:04**	**Solid**	**ICP 7300**	**03/22/17**	**03/23/17 13:04**	**170322L05**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.718	0.957	
Arsenic	0.783	0.718	0.957	
Barium	40.7	0.478	0.957	
Beryllium	ND	0.239	0.957	
Cadmium	ND	0.478	0.957	
Chromium	10.1	0.239	0.957	
Cobalt	4.83	0.239	0.957	
Copper	5.29	0.478	0.957	
Lead	2.28	0.478	0.957	
Molybdenum	ND	0.239	0.957	
Nickel	5.11	0.239	0.957	
Selenium	ND	0.718	0.957	
Silver	ND	0.239	0.957	
Thallium	ND	0.718	0.957	
Vanadium	15.4	0.239	0.957	
Zinc	12.8	0.957	0.957	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 3050B
Method: EPA 6010B
Units: mg/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-6-0-1	**17-03-1154-9-B**	**03/14/17 16:11**	**Solid**	**ICP 7300**	**03/22/17**	**03/23/17 13:05**	**170322L05**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.728	0.971	
Arsenic	ND	0.728	0.971	
Barium	48.9	0.485	0.971	
Beryllium	ND	0.243	0.971	
Cadmium	0.795	0.485	0.971	
Chromium	8.34	0.243	0.971	
Cobalt	14.5	0.243	0.971	
Copper	13.2	0.485	0.971	
Lead	31.7	0.485	0.971	
Molybdenum	ND	0.243	0.971	
Nickel	4.50	0.243	0.971	
Selenium	1.01	0.728	0.971	
Silver	ND	0.243	0.971	
Thallium	ND	0.728	0.971	
Vanadium	17.9	0.243	0.971	
Zinc	60.1	0.971	0.971	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 3050B
Method: EPA 6010B
Units: mg/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-2-1-2	**17-03-1154-10-B**	**03/14/17 16:15**	**Solid**	**ICP 7300**	**03/22/17**	**03/23/17 13:05**	**170322L05**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.714	0.952	
Arsenic	0.949	0.714	0.952	
Barium	24.7	0.476	0.952	
Beryllium	ND	0.238	0.952	
Cadmium	ND	0.476	0.952	
Chromium	6.82	0.238	0.952	
Cobalt	2.27	0.238	0.952	
Copper	2.68	0.476	0.952	
Lead	3.53	0.476	0.952	
Molybdenum	ND	0.238	0.952	
Nickel	2.79	0.238	0.952	
Selenium	ND	0.714	0.952	
Silver	ND	0.238	0.952	
Thallium	ND	0.714	0.952	
Vanadium	12.5	0.238	0.952	
Zinc	9.45	0.952	0.952	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 3050B
Method: EPA 6010B
Units: mg/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-3-0-1	**17-03-1154-11-B**	**03/14/17 16:18**	**Solid**	**ICP 7300**	**03/22/17**	**03/23/17 13:06**	**170322L05**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.728	0.971	
Arsenic	0.814	0.728	0.971	
Barium	27.1	0.485	0.971	
Beryllium	ND	0.243	0.971	
Cadmium	0.783	0.485	0.971	
Chromium	10.2	0.243	0.971	
Cobalt	6.25	0.243	0.971	
Copper	10.1	0.485	0.971	
Lead	32.1	0.485	0.971	
Molybdenum	ND	0.243	0.971	
Nickel	4.30	0.243	0.971	
Selenium	0.947	0.728	0.971	
Silver	ND	0.243	0.971	
Thallium	ND	0.728	0.971	
Vanadium	13.9	0.243	0.971	
Zinc	94.1	0.971	0.971	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 3050B
Method: EPA 6010B
Units: mg/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-9-0-1	**17-03-1154-12-B**	**03/14/17 16:22**	**Solid**	**ICP 7300**	**03/22/17**	**03/23/17 13:07**	**170322L05**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.721	0.962	
Arsenic	1.17	0.721	0.962	
Barium	59.0	0.481	0.962	
Beryllium	ND	0.240	0.962	
Cadmium	1.20	0.481	0.962	
Chromium	10.4	0.240	0.962	
Cobalt	9.33	0.240	0.962	
Copper	12.0	0.481	0.962	
Lead	65.0	0.481	0.962	
Molybdenum	ND	0.240	0.962	
Nickel	5.80	0.240	0.962	
Selenium	1.12	0.721	0.962	
Silver	ND	0.240	0.962	
Thallium	ND	0.721	0.962	
Vanadium	22.9	0.240	0.962	
Zinc	71.4	0.962	0.962	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 3050B
Method: EPA 6010B
Units: mg/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-4-0-1	**17-03-1154-13-B**	**03/14/17 16:25**	**Solid**	**ICP 7300**	**03/22/17**	**03/23/17 13:08**	**170322L05**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.739	0.985	
Arsenic	ND	0.739	0.985	
Barium	26.1	0.493	0.985	
Beryllium	ND	0.246	0.985	
Cadmium	0.672	0.493	0.985	
Chromium	8.68	0.246	0.985	
Cobalt	3.08	0.246	0.985	
Copper	5.79	0.493	0.985	
Lead	30.3	0.493	0.985	
Molybdenum	ND	0.246	0.985	
Nickel	4.16	0.246	0.985	
Selenium	0.836	0.739	0.985	
Silver	ND	0.246	0.985	
Thallium	ND	0.739	0.985	
Vanadium	15.3	0.246	0.985	
Zinc	62.0	0.985	0.985	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 3050B
Method: EPA 6010B
Units: mg/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-19-0-1	**17-03-1154-14-B**	**03/14/17 16:28**	**Solid**	**ICP 7300**	**03/22/17**	**03/23/17 13:11**	**170322L05**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.732	0.976	
Arsenic	ND	0.732	0.976	
Barium	15.8	0.488	0.976	
Beryllium	ND	0.244	0.976	
Cadmium	5.84	0.488	0.976	
Chromium	11.6	0.244	0.976	
Cobalt	4.65	0.244	0.976	
Copper	17.0	0.488	0.976	
Lead	3.33	0.488	0.976	
Molybdenum	ND	0.244	0.976	
Nickel	8.94	0.244	0.976	
Selenium	0.736	0.732	0.976	
Silver	ND	0.244	0.976	
Thallium	ND	0.732	0.976	
Vanadium	14.7	0.244	0.976	
Zinc	237	0.976	0.976	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 3050B
Method: EPA 6010B
Units: mg/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SBB2-1-0-1	**17-03-1154-15-B**	**03/15/17 09:05**	**Solid**	**ICP 7300**	**03/22/17**	**03/23/17 13:11**	**170322L05**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.735	0.980	
Arsenic	1.24	0.735	0.980	
Barium	17.4	0.490	0.980	
Beryllium	ND	0.245	0.980	
Cadmium	ND	0.490	0.980	
Chromium	15.2	0.245	0.980	
Cobalt	3.54	0.245	0.980	
Copper	2.73	0.490	0.980	
Lead	1.55	0.490	0.980	
Molybdenum	ND	0.245	0.980	
Nickel	6.53	0.245	0.980	
Selenium	ND	0.735	0.980	
Silver	ND	0.245	0.980	
Thallium	ND	0.735	0.980	
Vanadium	14.5	0.245	0.980	
Zinc	8.29	0.980	0.980	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 3050B
Method: EPA 6010B
Units: mg/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SBB2-4-0-1	**17-03-1154-16-B**	**03/15/17 09:35**	**Solid**	**ICP 7300**	**03/22/17**	**03/23/17 13:12**	**170322L05**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.721	0.962	
Arsenic	1.19	0.721	0.962	
Barium	20.7	0.481	0.962	
Beryllium	ND	0.240	0.962	
Cadmium	ND	0.481	0.962	
Chromium	13.9	0.240	0.962	
Cobalt	2.99	0.240	0.962	
Copper	4.21	0.481	0.962	
Lead	1.52	0.481	0.962	
Molybdenum	0.343	0.240	0.962	
Nickel	6.45	0.240	0.962	
Selenium	ND	0.721	0.962	
Silver	ND	0.240	0.962	
Thallium	ND	0.721	0.962	
Vanadium	15.0	0.240	0.962	
Zinc	9.20	0.962	0.962	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 3050B
Method: EPA 6010B
Units: mg/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SBB2-5-3-4	**17-03-1154-17-B**	**03/15/17 10:50**	**Solid**	**ICP 7300**	**03/22/17**	**03/23/17 13:13**	**170322L05**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.728	0.971	
Arsenic	2.61	0.728	0.971	
Barium	66.9	0.485	0.971	
Beryllium	ND	0.243	0.971	
Cadmium	2.61	0.485	0.971	
Chromium	17.8	0.243	0.971	
Cobalt	5.93	0.243	0.971	
Copper	17.9	0.485	0.971	
Lead	65.5	0.485	0.971	
Molybdenum	0.463	0.243	0.971	
Nickel	8.84	0.243	0.971	
Selenium	3.98	0.728	0.971	
Silver	ND	0.243	0.971	
Thallium	ND	0.728	0.971	
Vanadium	29.1	0.243	0.971	
Zinc	66.3	0.971	0.971	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 3050B
Method: EPA 6010B
Units: mg/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**097-01-002-24479**	**N/A**	**Solid**	**ICP 7300**	**03/22/17**	**03/23/17 11:37**	**170322L05**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.721	0.962	
Arsenic	ND	0.721	0.962	
Barium	ND	0.481	0.962	
Beryllium	ND	0.240	0.962	
Cadmium	ND	0.481	0.962	
Chromium	ND	0.240	0.962	
Cobalt	ND	0.240	0.962	
Copper	ND	0.481	0.962	
Lead	ND	0.481	0.962	
Molybdenum	ND	0.240	0.962	
Nickel	ND	0.240	0.962	
Selenium	ND	0.721	0.962	
Silver	ND	0.240	0.962	
Thallium	ND	0.721	0.962	
Vanadium	ND	0.240	0.962	
Zinc	ND	0.962	0.962	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: INFINEON - El Segundo / 0397848

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 7471A Total
Method: EPA 7471A
Units: mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-20-0-1	**17-03-1154-1-B**	**03/14/17 15:34**	**Solid**	**Mercury 08**	**03/22/17**	**03/22/17 19:05**	**170322L04**

Parameter	Result	RL	DF	Qualifiers
Mercury	ND	0.0806	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-11-0-1	**17-03-1154-2-B**	**03/14/17 15:44**	**Solid**	**Mercury 08**	**03/22/17**	**03/22/17 19:12**	**170322L04**

Parameter	Result	RL	DF	Qualifiers
Mercury	ND	0.0820	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-12-0-1	**17-03-1154-3-B**	**03/14/17 15:47**	**Solid**	**Mercury 08**	**03/22/17**	**03/22/17 19:14**	**170322L04**

Parameter	Result	RL	DF	Qualifiers
Mercury	ND	0.0794	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-13-0-1	**17-03-1154-4-B**	**03/14/17 15:50**	**Solid**	**Mercury 08**	**03/22/17**	**03/22/17 19:16**	**170322L04**

Parameter	Result	RL	DF	Qualifiers
Mercury	ND	0.0806	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-10-1-2	**17-03-1154-5-B**	**03/14/17 15:54**	**Solid**	**Mercury 08**	**03/22/17**	**03/22/17 19:18**	**170322L04**

Parameter	Result	RL	DF	Qualifiers
Mercury	ND	0.0794	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-1-0-1	**17-03-1154-6-B**	**03/14/17 15:57**	**Solid**	**Mercury 08**	**03/22/17**	**03/22/17 19:21**	**170322L04**

Parameter	Result	RL	DF	Qualifiers
Mercury	ND	0.0820	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-7-0-1	**17-03-1154-7-B**	**03/14/17 16:01**	**Solid**	**Mercury 08**	**03/22/17**	**03/22/17 19:28**	**170322L04**

Parameter	Result	RL	DF	Qualifiers
Mercury	ND	0.0806	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-5-0-1	**17-03-1154-8-B**	**03/14/17 16:04**	**Solid**	**Mercury 08**	**03/22/17**	**03/22/17 19:30**	**170322L04**

Parameter	Result	RL	DF	Qualifiers
Mercury	ND	0.0820	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 7471A Total
Method: EPA 7471A
Units: mg/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-6-0-1	**17-03-1154-9-B**	**03/14/17 16:11**	**Solid**	**Mercury 08**	**03/22/17**	**03/22/17 19:32**	**170322L04**

Parameter	Result	RL	DF	Qualifiers
Mercury	ND	0.0794	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-2-1-2	**17-03-1154-10-B**	**03/14/17 16:15**	**Solid**	**Mercury 08**	**03/22/17**	**03/22/17 19:35**	**170322L04**

Parameter	Result	RL	DF	Qualifiers
Mercury	ND	0.0806	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-3-0-1	**17-03-1154-11-B**	**03/14/17 16:18**	**Solid**	**Mercury 08**	**03/22/17**	**03/22/17 19:37**	**170322L04**

Parameter	Result	RL	DF	Qualifiers
Mercury	ND	0.0794	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-9-0-1	**17-03-1154-12-B**	**03/14/17 16:22**	**Solid**	**Mercury 08**	**03/22/17**	**03/22/17 19:39**	**170322L04**

Parameter	Result	RL	DF	Qualifiers
Mercury	ND	0.0806	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-4-0-1	**17-03-1154-13-B**	**03/14/17 16:25**	**Solid**	**Mercury 08**	**03/22/17**	**03/22/17 19:41**	**170322L04**

Parameter	Result	RL	DF	Qualifiers
Mercury	ND	0.0794	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-19-0-1	**17-03-1154-14-B**	**03/14/17 16:28**	**Solid**	**Mercury 08**	**03/22/17**	**03/22/17 19:44**	**170322L04**

Parameter	Result	RL	DF	Qualifiers
Mercury	ND	0.0820	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SBB2-1-0-1	**17-03-1154-15-B**	**03/15/17 09:05**	**Solid**	**Mercury 08**	**03/22/17**	**03/22/17 19:46**	**170322L04**

Parameter	Result	RL	DF	Qualifiers
Mercury	ND	0.0806	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SBB2-4-0-1	**17-03-1154-16-B**	**03/15/17 09:35**	**Solid**	**Mercury 08**	**03/22/17**	**03/22/17 19:48**	**170322L04**

Parameter	Result	RL	DF	Qualifiers
Mercury	ND	0.0820	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 7471A Total
Method: EPA 7471A
Units: mg/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SBB2-5-3-4	**17-03-1154-17-A**	**03/15/17 10:50**	**Solid**	**Mercury 08**	**03/22/17**	**03/22/17 19:55**	**170322L04**

Parameter	Result	RL	DF	Qualifiers
Mercury	ND	0.0794	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-16-272-2892**	**N/A**	**Solid**	**Mercury 08**	**03/22/17**	**03/22/17 19:00**	**170322L04**

Parameter	Result	RL	DF	Qualifiers
Mercury	ND	0.0833	1.00	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-20-0-1	**17-03-1154-1-B**	**03/14/17 15:34**	**Solid**	**GC/MS LL**	**03/16/17**	**03/16/17 12:54**	**170316L012**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	130	1.00	
Benzene	ND	5.1	1.00	
Bromobenzene	ND	5.1	1.00	
Bromochloromethane	ND	5.1	1.00	
Bromodichloromethane	ND	5.1	1.00	
Bromoform	ND	5.1	1.00	
Bromomethane	ND	25	1.00	
2-Butanone	ND	51	1.00	
n-Butylbenzene	ND	5.1	1.00	
sec-Butylbenzene	ND	5.1	1.00	
tert-Butylbenzene	ND	5.1	1.00	
Carbon Disulfide	ND	51	1.00	
Carbon Tetrachloride	ND	5.1	1.00	
Chlorobenzene	ND	5.1	1.00	
Chloroethane	ND	5.1	1.00	
Chloroform	ND	5.1	1.00	
Chloromethane	ND	25	1.00	
2-Chlorotoluene	ND	5.1	1.00	
4-Chlorotoluene	ND	5.1	1.00	
Dibromochloromethane	ND	5.1	1.00	
1,2-Dibromo-3-Chloropropane	ND	10	1.00	
1,2-Dibromoethane	ND	5.1	1.00	
Dibromomethane	ND	5.1	1.00	
1,2-Dichlorobenzene	ND	5.1	1.00	
1,3-Dichlorobenzene	ND	5.1	1.00	
1,4-Dichlorobenzene	ND	5.1	1.00	
Dichlorodifluoromethane	ND	5.1	1.00	
1,1-Dichloroethane	ND	5.1	1.00	
1,2-Dichloroethane	ND	5.1	1.00	
1,1-Dichloroethene	ND	5.1	1.00	
c-1,2-Dichloroethene	ND	5.1	1.00	
t-1,2-Dichloroethene	ND	5.1	1.00	
1,2-Dichloropropane	ND	5.1	1.00	
1,3-Dichloropropane	ND	5.1	1.00	
2,2-Dichloropropane	ND	5.1	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/15/17
1920 Main Street, Suite 300	Work Order:	17-03-1154
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/kg
Project: INFINEON - El Segundo / 0397848		Page 2 of 60

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	5.1	1.00	
c-1,3-Dichloropropene	ND	5.1	1.00	
t-1,3-Dichloropropene	ND	5.1	1.00	
Ethylbenzene	ND	5.1	1.00	
2-Hexanone	ND	51	1.00	
Isopropylbenzene	ND	5.1	1.00	
p-Isopropyltoluene	ND	5.1	1.00	
Methylene Chloride	ND	51	1.00	
4-Methyl-2-Pentanone	ND	51	1.00	
Naphthalene	ND	51	1.00	
n-Propylbenzene	ND	5.1	1.00	
Styrene	ND	5.1	1.00	
1,1,1,2-Tetrachloroethane	ND	5.1	1.00	
1,1,2,2-Tetrachloroethane	ND	5.1	1.00	
Tetrachloroethene	ND	5.1	1.00	
Toluene	ND	5.1	1.00	
1,2,3-Trichlorobenzene	ND	10	1.00	
1,2,4-Trichlorobenzene	ND	5.1	1.00	
1,1,1-Trichloroethane	ND	5.1	1.00	
1,1,2-Trichloroethane	ND	5.1	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	51	1.00	
Trichloroethene	ND	5.1	1.00	
1,2,3-Trichloropropane	ND	5.1	1.00	
1,2,4-Trimethylbenzene	ND	5.1	1.00	
Trichlorofluoromethane	ND	51	1.00	
1,3,5-Trimethylbenzene	ND	5.1	1.00	
Vinyl Acetate	ND	51	1.00	
Vinyl Chloride	ND	5.1	1.00	
p/m-Xylene	ND	5.1	1.00	
o-Xylene	ND	5.1	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	5.1	1.00	
Tert-Butyl Alcohol (TBA)	ND	51	1.00	
Diisopropyl Ether (DIPE)	ND	10	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	10	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	10	1.00	
Ethanol	ND	250	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	89	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/kg
Project: INFINEON - El Segundo / 0397848			Page 3 of 60

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	106	79-133	
1,2-Dichloroethane-d4	102	71-155	
Toluene-d8	101	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-11-0-1	**17-03-1154-2-B**	**03/14/17 15:44**	**Solid**	**GC/MS LL**	**03/16/17**	**03/16/17 14:50**	**170316L012**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	120	1.00	
Benzene	ND	5.0	1.00	
Bromobenzene	ND	5.0	1.00	
Bromochloromethane	ND	5.0	1.00	
Bromodichloromethane	ND	5.0	1.00	
Bromoform	ND	5.0	1.00	
Bromomethane	ND	25	1.00	
2-Butanone	ND	50	1.00	
n-Butylbenzene	ND	5.0	1.00	
sec-Butylbenzene	ND	5.0	1.00	
tert-Butylbenzene	ND	5.0	1.00	
Carbon Disulfide	ND	50	1.00	
Carbon Tetrachloride	ND	5.0	1.00	
Chlorobenzene	ND	5.0	1.00	
Chloroethane	ND	5.0	1.00	
Chloroform	ND	5.0	1.00	
Chloromethane	ND	25	1.00	
2-Chlorotoluene	ND	5.0	1.00	
4-Chlorotoluene	ND	5.0	1.00	
Dibromochloromethane	ND	5.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	9.9	1.00	
1,2-Dibromoethane	ND	5.0	1.00	
Dibromomethane	ND	5.0	1.00	
1,2-Dichlorobenzene	ND	5.0	1.00	
1,3-Dichlorobenzene	ND	5.0	1.00	
1,4-Dichlorobenzene	ND	5.0	1.00	
Dichlorodifluoromethane	ND	5.0	1.00	
1,1-Dichloroethane	ND	5.0	1.00	
1,2-Dichloroethane	ND	5.0	1.00	
1,1-Dichloroethene	ND	5.0	1.00	
c-1,2-Dichloroethene	ND	5.0	1.00	
t-1,2-Dichloroethene	ND	5.0	1.00	
1,2-Dichloropropane	ND	5.0	1.00	
1,3-Dichloropropane	ND	5.0	1.00	
2,2-Dichloropropane	ND	5.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/15/17
1920 Main Street, Suite 300	Work Order:	17-03-1154
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/kg
Project: INFINEON - El Segundo / 0397848		Page 5 of 60

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	5.0	1.00	
c-1,3-Dichloropropene	ND	5.0	1.00	
t-1,3-Dichloropropene	ND	5.0	1.00	
Ethylbenzene	ND	5.0	1.00	
2-Hexanone	ND	50	1.00	
Isopropylbenzene	ND	5.0	1.00	
p-Isopropyltoluene	ND	5.0	1.00	
Methylene Chloride	ND	50	1.00	
4-Methyl-2-Pentanone	ND	50	1.00	
Naphthalene	ND	50	1.00	
n-Propylbenzene	ND	5.0	1.00	
Styrene	ND	5.0	1.00	
1,1,1,2-Tetrachloroethane	ND	5.0	1.00	
1,1,2,2-Tetrachloroethane	ND	5.0	1.00	
Tetrachloroethene	ND	5.0	1.00	
Toluene	ND	5.0	1.00	
1,2,3-Trichlorobenzene	ND	9.9	1.00	
1,2,4-Trichlorobenzene	ND	5.0	1.00	
1,1,1-Trichloroethane	ND	5.0	1.00	
1,1,2-Trichloroethane	ND	5.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	50	1.00	
Trichloroethene	ND	5.0	1.00	
1,2,3-Trichloropropane	ND	5.0	1.00	
1,2,4-Trimethylbenzene	ND	5.0	1.00	
Trichlorofluoromethane	ND	50	1.00	
1,3,5-Trimethylbenzene	ND	5.0	1.00	
Vinyl Acetate	ND	50	1.00	
Vinyl Chloride	ND	5.0	1.00	
p/m-Xylene	ND	5.0	1.00	
o-Xylene	ND	5.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	5.0	1.00	
Tert-Butyl Alcohol (TBA)	ND	50	1.00	
Diisopropyl Ether (DIPE)	ND	9.9	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	9.9	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	9.9	1.00	
Ethanol	ND	250	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	88	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/kg
Project: INFINEON - El Segundo / 0397848			Page 6 of 60

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	105	79-133	
1,2-Dichloroethane-d4	102	71-155	
Toluene-d8	100	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-12-0-1	**17-03-1154-3-B**	**03/14/17 15:47**	**Solid**	**GC/MS LL**	**03/16/17**	**03/16/17 15:19**	**170316L012**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	130	1.00	
Benzene	ND	5.1	1.00	
Bromobenzene	ND	5.1	1.00	
Bromochloromethane	ND	5.1	1.00	
Bromodichloromethane	ND	5.1	1.00	
Bromoform	ND	5.1	1.00	
Bromomethane	ND	26	1.00	
2-Butanone	ND	51	1.00	
n-Butylbenzene	ND	5.1	1.00	
sec-Butylbenzene	ND	5.1	1.00	
tert-Butylbenzene	ND	5.1	1.00	
Carbon Disulfide	ND	51	1.00	
Carbon Tetrachloride	ND	5.1	1.00	
Chlorobenzene	ND	5.1	1.00	
Chloroethane	ND	5.1	1.00	
Chloroform	ND	5.1	1.00	
Chloromethane	ND	26	1.00	
2-Chlorotoluene	ND	5.1	1.00	
4-Chlorotoluene	ND	5.1	1.00	
Dibromochloromethane	ND	5.1	1.00	
1,2-Dibromo-3-Chloropropane	ND	10	1.00	
1,2-Dibromoethane	ND	5.1	1.00	
Dibromomethane	ND	5.1	1.00	
1,2-Dichlorobenzene	ND	5.1	1.00	
1,3-Dichlorobenzene	ND	5.1	1.00	
1,4-Dichlorobenzene	ND	5.1	1.00	
Dichlorodifluoromethane	ND	5.1	1.00	
1,1-Dichloroethane	ND	5.1	1.00	
1,2-Dichloroethane	ND	5.1	1.00	
1,1-Dichloroethene	ND	5.1	1.00	
c-1,2-Dichloroethene	ND	5.1	1.00	
t-1,2-Dichloroethene	ND	5.1	1.00	
1,2-Dichloropropane	ND	5.1	1.00	
1,3-Dichloropropane	ND	5.1	1.00	
2,2-Dichloropropane	ND	5.1	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/15/17
1920 Main Street, Suite 300	Work Order:	17-03-1154
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/kg
Project: INFINEON - El Segundo / 0397848		Page 8 of 60

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	5.1	1.00	
c-1,3-Dichloropropene	ND	5.1	1.00	
t-1,3-Dichloropropene	ND	5.1	1.00	
Ethylbenzene	ND	5.1	1.00	
2-Hexanone	ND	51	1.00	
Isopropylbenzene	ND	5.1	1.00	
p-Isopropyltoluene	ND	5.1	1.00	
Methylene Chloride	ND	51	1.00	
4-Methyl-2-Pentanone	ND	51	1.00	
Naphthalene	ND	51	1.00	
n-Propylbenzene	ND	5.1	1.00	
Styrene	ND	5.1	1.00	
1,1,1,2-Tetrachloroethane	ND	5.1	1.00	
1,1,2,2-Tetrachloroethane	ND	5.1	1.00	
Tetrachloroethene	ND	5.1	1.00	
Toluene	ND	5.1	1.00	
1,2,3-Trichlorobenzene	ND	10	1.00	
1,2,4-Trichlorobenzene	ND	5.1	1.00	
1,1,1-Trichloroethane	ND	5.1	1.00	
1,1,2-Trichloroethane	ND	5.1	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	51	1.00	
Trichloroethene	ND	5.1	1.00	
1,2,3-Trichloropropane	ND	5.1	1.00	
1,2,4-Trimethylbenzene	ND	5.1	1.00	
Trichlorofluoromethane	ND	51	1.00	
1,3,5-Trimethylbenzene	ND	5.1	1.00	
Vinyl Acetate	ND	51	1.00	
Vinyl Chloride	ND	5.1	1.00	
p/m-Xylene	ND	5.1	1.00	
o-Xylene	ND	5.1	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	5.1	1.00	
Tert-Butyl Alcohol (TBA)	ND	51	1.00	
Diisopropyl Ether (DIPE)	ND	10	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	10	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	10	1.00	
Ethanol	ND	260	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	88	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/kg
Project: INFINEON - El Segundo / 0397848			Page 9 of 60

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	110	79-133	
1,2-Dichloroethane-d4	107	71-155	
Toluene-d8	101	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-13-0-1	**17-03-1154-4-B**	**03/14/17 15:50**	**Solid**	**GC/MS LL**	**03/16/17**	**03/16/17 15:48**	**170316L012**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	120	1.00	
Benzene	ND	4.9	1.00	
Bromobenzene	ND	4.9	1.00	
Bromochloromethane	ND	4.9	1.00	
Bromodichloromethane	ND	4.9	1.00	
Bromoform	ND	4.9	1.00	
Bromomethane	ND	25	1.00	
2-Butanone	ND	49	1.00	
n-Butylbenzene	ND	4.9	1.00	
sec-Butylbenzene	ND	4.9	1.00	
tert-Butylbenzene	ND	4.9	1.00	
Carbon Disulfide	ND	49	1.00	
Carbon Tetrachloride	ND	4.9	1.00	
Chlorobenzene	ND	4.9	1.00	
Chloroethane	ND	4.9	1.00	
Chloroform	ND	4.9	1.00	
Chloromethane	ND	25	1.00	
2-Chlorotoluene	ND	4.9	1.00	
4-Chlorotoluene	ND	4.9	1.00	
Dibromochloromethane	ND	4.9	1.00	
1,2-Dibromo-3-Chloropropane	ND	9.9	1.00	
1,2-Dibromoethane	ND	4.9	1.00	
Dibromomethane	ND	4.9	1.00	
1,2-Dichlorobenzene	ND	4.9	1.00	
1,3-Dichlorobenzene	ND	4.9	1.00	
1,4-Dichlorobenzene	ND	4.9	1.00	
Dichlorodifluoromethane	ND	4.9	1.00	
1,1-Dichloroethane	ND	4.9	1.00	
1,2-Dichloroethane	ND	4.9	1.00	
1,1-Dichloroethene	ND	4.9	1.00	
c-1,2-Dichloroethene	ND	4.9	1.00	
t-1,2-Dichloroethene	ND	4.9	1.00	
1,2-Dichloropropane	ND	4.9	1.00	
1,3-Dichloropropane	ND	4.9	1.00	
2,2-Dichloropropane	ND	4.9	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/15/17
1920 Main Street, Suite 300	Work Order:	17-03-1154
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/kg
Project: INFINEON - El Segundo / 0397848		Page 11 of 60

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	4.9	1.00	
c-1,3-Dichloropropene	ND	4.9	1.00	
t-1,3-Dichloropropene	ND	4.9	1.00	
Ethylbenzene	ND	4.9	1.00	
2-Hexanone	ND	49	1.00	
Isopropylbenzene	ND	4.9	1.00	
p-Isopropyltoluene	ND	4.9	1.00	
Methylene Chloride	ND	49	1.00	
4-Methyl-2-Pentanone	ND	49	1.00	
Naphthalene	ND	49	1.00	
n-Propylbenzene	ND	4.9	1.00	
Styrene	ND	4.9	1.00	
1,1,1,2-Tetrachloroethane	ND	4.9	1.00	
1,1,2,2-Tetrachloroethane	ND	4.9	1.00	
Tetrachloroethene	ND	4.9	1.00	
Toluene	ND	4.9	1.00	
1,2,3-Trichlorobenzene	ND	9.9	1.00	
1,2,4-Trichlorobenzene	ND	4.9	1.00	
1,1,1-Trichloroethane	ND	4.9	1.00	
1,1,2-Trichloroethane	ND	4.9	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	49	1.00	
Trichloroethene	ND	4.9	1.00	
1,2,3-Trichloropropane	ND	4.9	1.00	
1,2,4-Trimethylbenzene	ND	4.9	1.00	
Trichlorofluoromethane	ND	49	1.00	
1,3,5-Trimethylbenzene	ND	4.9	1.00	
Vinyl Acetate	ND	49	1.00	
Vinyl Chloride	ND	4.9	1.00	
p/m-Xylene	ND	4.9	1.00	
o-Xylene	ND	4.9	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	4.9	1.00	
Tert-Butyl Alcohol (TBA)	ND	49	1.00	
Diisopropyl Ether (DIPE)	ND	9.9	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	9.9	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	9.9	1.00	
Ethanol	ND	250	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	92	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/15/17
1920 Main Street, Suite 300	Work Order:	17-03-1154
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/kg
Project: INFINEON - El Segundo / 0397848		Page 12 of 60

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	110	79-133	
1,2-Dichloroethane-d4	107	71-155	
Toluene-d8	101	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-10-1-2	**17-03-1154-5-B**	**03/14/17 15:54**	**Solid**	**GC/MS LL**	**03/16/17**	**03/16/17 16:18**	**170316L012**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	130	1.00	
Benzene	ND	5.0	1.00	
Bromobenzene	ND	5.0	1.00	
Bromochloromethane	ND	5.0	1.00	
Bromodichloromethane	ND	5.0	1.00	
Bromoform	ND	5.0	1.00	
Bromomethane	ND	25	1.00	
2-Butanone	ND	50	1.00	
n-Butylbenzene	ND	5.0	1.00	
sec-Butylbenzene	ND	5.0	1.00	
tert-Butylbenzene	ND	5.0	1.00	
Carbon Disulfide	ND	50	1.00	
Carbon Tetrachloride	ND	5.0	1.00	
Chlorobenzene	ND	5.0	1.00	
Chloroethane	ND	5.0	1.00	
Chloroform	ND	5.0	1.00	
Chloromethane	ND	25	1.00	
2-Chlorotoluene	ND	5.0	1.00	
4-Chlorotoluene	ND	5.0	1.00	
Dibromochloromethane	ND	5.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	10	1.00	
1,2-Dibromoethane	ND	5.0	1.00	
Dibromomethane	ND	5.0	1.00	
1,2-Dichlorobenzene	ND	5.0	1.00	
1,3-Dichlorobenzene	ND	5.0	1.00	
1,4-Dichlorobenzene	ND	5.0	1.00	
Dichlorodifluoromethane	ND	5.0	1.00	
1,1-Dichloroethane	ND	5.0	1.00	
1,2-Dichloroethane	ND	5.0	1.00	
1,1-Dichloroethene	ND	5.0	1.00	
c-1,2-Dichloroethene	ND	5.0	1.00	
t-1,2-Dichloroethene	ND	5.0	1.00	
1,2-Dichloropropane	ND	5.0	1.00	
1,3-Dichloropropane	ND	5.0	1.00	
2,2-Dichloropropane	ND	5.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/15/17
1920 Main Street, Suite 300	Work Order:	17-03-1154
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/kg
Project: INFINEON - El Segundo / 0397848		Page 14 of 60

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	5.0	1.00	
c-1,3-Dichloropropene	ND	5.0	1.00	
t-1,3-Dichloropropene	ND	5.0	1.00	
Ethylbenzene	ND	5.0	1.00	
2-Hexanone	ND	50	1.00	
Isopropylbenzene	ND	5.0	1.00	
p-Isopropyltoluene	ND	5.0	1.00	
Methylene Chloride	ND	50	1.00	
4-Methyl-2-Pentanone	ND	50	1.00	
Naphthalene	ND	50	1.00	
n-Propylbenzene	ND	5.0	1.00	
Styrene	ND	5.0	1.00	
1,1,1,2-Tetrachloroethane	ND	5.0	1.00	
1,1,2,2-Tetrachloroethane	ND	5.0	1.00	
Tetrachloroethene	ND	5.0	1.00	
Toluene	ND	5.0	1.00	
1,2,3-Trichlorobenzene	ND	10	1.00	
1,2,4-Trichlorobenzene	ND	5.0	1.00	
1,1,1-Trichloroethane	ND	5.0	1.00	
1,1,2-Trichloroethane	ND	5.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	50	1.00	
Trichloroethene	ND	5.0	1.00	
1,2,3-Trichloropropane	ND	5.0	1.00	
1,2,4-Trimethylbenzene	ND	5.0	1.00	
Trichlorofluoromethane	ND	50	1.00	
1,3,5-Trimethylbenzene	ND	5.0	1.00	
Vinyl Acetate	ND	50	1.00	
Vinyl Chloride	ND	5.0	1.00	
p/m-Xylene	ND	5.0	1.00	
o-Xylene	ND	5.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	5.0	1.00	
Tert-Butyl Alcohol (TBA)	ND	50	1.00	
Diisopropyl Ether (DIPE)	ND	10	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	10	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	10	1.00	
Ethanol	ND	250	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	89	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/kg
Project: INFINEON - El Segundo / 0397848			Page 15 of 60

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	106	79-133	
1,2-Dichloroethane-d4	105	71-155	
Toluene-d8	101	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-1-0-1	**17-03-1154-6-B**	**03/14/17 15:57**	**Solid**	**GC/MS LL**	**03/16/17**	**03/16/17 16:47**	**170316L012**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	130	1.00	
Benzene	ND	5.2	1.00	
Bromobenzene	ND	5.2	1.00	
Bromochloromethane	ND	5.2	1.00	
Bromodichloromethane	ND	5.2	1.00	
Bromoform	ND	5.2	1.00	
Bromomethane	ND	26	1.00	
2-Butanone	ND	52	1.00	
n-Butylbenzene	ND	5.2	1.00	
sec-Butylbenzene	ND	5.2	1.00	
tert-Butylbenzene	ND	5.2	1.00	
Carbon Disulfide	ND	52	1.00	
Carbon Tetrachloride	ND	5.2	1.00	
Chlorobenzene	ND	5.2	1.00	
Chloroethane	ND	5.2	1.00	
Chloroform	ND	5.2	1.00	
Chloromethane	ND	26	1.00	
2-Chlorotoluene	ND	5.2	1.00	
4-Chlorotoluene	ND	5.2	1.00	
Dibromochloromethane	ND	5.2	1.00	
1,2-Dibromo-3-Chloropropane	ND	10	1.00	
1,2-Dibromoethane	ND	5.2	1.00	
Dibromomethane	ND	5.2	1.00	
1,2-Dichlorobenzene	ND	5.2	1.00	
1,3-Dichlorobenzene	ND	5.2	1.00	
1,4-Dichlorobenzene	ND	5.2	1.00	
Dichlorodifluoromethane	ND	5.2	1.00	
1,1-Dichloroethane	ND	5.2	1.00	
1,2-Dichloroethane	ND	5.2	1.00	
1,1-Dichloroethene	ND	5.2	1.00	
c-1,2-Dichloroethene	ND	5.2	1.00	
t-1,2-Dichloroethene	ND	5.2	1.00	
1,2-Dichloropropane	ND	5.2	1.00	
1,3-Dichloropropane	ND	5.2	1.00	
2,2-Dichloropropane	ND	5.2	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/15/17
1920 Main Street, Suite 300	Work Order:	17-03-1154
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/kg
Project: INFINEON - El Segundo / 0397848		Page 17 of 60

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	5.2	1.00	
c-1,3-Dichloropropene	ND	5.2	1.00	
t-1,3-Dichloropropene	ND	5.2	1.00	
Ethylbenzene	ND	5.2	1.00	
2-Hexanone	ND	52	1.00	
Isopropylbenzene	ND	5.2	1.00	
p-Isopropyltoluene	ND	5.2	1.00	
Methylene Chloride	ND	52	1.00	
4-Methyl-2-Pentanone	ND	52	1.00	
Naphthalene	ND	52	1.00	
n-Propylbenzene	ND	5.2	1.00	
Styrene	ND	5.2	1.00	
1,1,1,2-Tetrachloroethane	ND	5.2	1.00	
1,1,2,2-Tetrachloroethane	ND	5.2	1.00	
Tetrachloroethene	ND	5.2	1.00	
Toluene	ND	5.2	1.00	
1,2,3-Trichlorobenzene	ND	10	1.00	
1,2,4-Trichlorobenzene	ND	5.2	1.00	
1,1,1-Trichloroethane	ND	5.2	1.00	
1,1,2-Trichloroethane	ND	5.2	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	52	1.00	
Trichloroethene	ND	5.2	1.00	
1,2,3-Trichloropropane	ND	5.2	1.00	
1,2,4-Trimethylbenzene	ND	5.2	1.00	
Trichlorofluoromethane	ND	52	1.00	
1,3,5-Trimethylbenzene	ND	5.2	1.00	
Vinyl Acetate	ND	52	1.00	
Vinyl Chloride	ND	5.2	1.00	
p/m-Xylene	ND	5.2	1.00	
o-Xylene	ND	5.2	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	5.2	1.00	
Tert-Butyl Alcohol (TBA)	ND	52	1.00	
Diisopropyl Ether (DIPE)	ND	10	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	10	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	10	1.00	
Ethanol	ND	260	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	89	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/15/17
1920 Main Street, Suite 300	Work Order:	17-03-1154
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/kg
Project: INFINEON - El Segundo / 0397848		Page 18 of 60

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	109	79-133	
1,2-Dichloroethane-d4	108	71-155	
Toluene-d8	100	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-7-0-1	**17-03-1154-7-B**	**03/14/17 16:01**	**Solid**	**GC/MS LL**	**03/16/17**	**03/16/17 17:16**	**170316L012**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	130	1.00	
Benzene	ND	5.1	1.00	
Bromobenzene	ND	5.1	1.00	
Bromochloromethane	ND	5.1	1.00	
Bromodichloromethane	ND	5.1	1.00	
Bromoform	ND	5.1	1.00	
Bromomethane	ND	26	1.00	
2-Butanone	ND	51	1.00	
n-Butylbenzene	ND	5.1	1.00	
sec-Butylbenzene	ND	5.1	1.00	
tert-Butylbenzene	ND	5.1	1.00	
Carbon Disulfide	ND	51	1.00	
Carbon Tetrachloride	ND	5.1	1.00	
Chlorobenzene	ND	5.1	1.00	
Chloroethane	ND	5.1	1.00	
Chloroform	ND	5.1	1.00	
Chloromethane	ND	26	1.00	
2-Chlorotoluene	ND	5.1	1.00	
4-Chlorotoluene	ND	5.1	1.00	
Dibromochloromethane	ND	5.1	1.00	
1,2-Dibromo-3-Chloropropane	ND	10	1.00	
1,2-Dibromoethane	ND	5.1	1.00	
Dibromomethane	ND	5.1	1.00	
1,2-Dichlorobenzene	ND	5.1	1.00	
1,3-Dichlorobenzene	ND	5.1	1.00	
1,4-Dichlorobenzene	ND	5.1	1.00	
Dichlorodifluoromethane	ND	5.1	1.00	
1,1-Dichloroethane	ND	5.1	1.00	
1,2-Dichloroethane	ND	5.1	1.00	
1,1-Dichloroethene	ND	5.1	1.00	
c-1,2-Dichloroethene	ND	5.1	1.00	
t-1,2-Dichloroethene	ND	5.1	1.00	
1,2-Dichloropropane	ND	5.1	1.00	
1,3-Dichloropropane	ND	5.1	1.00	
2,2-Dichloropropane	ND	5.1	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/15/17
1920 Main Street, Suite 300	Work Order:	17-03-1154
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/kg
Project: INFINEON - El Segundo / 0397848		Page 20 of 60

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	5.1	1.00	
c-1,3-Dichloropropene	ND	5.1	1.00	
t-1,3-Dichloropropene	ND	5.1	1.00	
Ethylbenzene	ND	5.1	1.00	
2-Hexanone	ND	51	1.00	
Isopropylbenzene	ND	5.1	1.00	
p-Isopropyltoluene	ND	5.1	1.00	
Methylene Chloride	ND	51	1.00	
4-Methyl-2-Pentanone	ND	51	1.00	
Naphthalene	ND	51	1.00	
n-Propylbenzene	ND	5.1	1.00	
Styrene	ND	5.1	1.00	
1,1,1,2-Tetrachloroethane	ND	5.1	1.00	
1,1,2,2-Tetrachloroethane	ND	5.1	1.00	
Tetrachloroethene	ND	5.1	1.00	
Toluene	ND	5.1	1.00	
1,2,3-Trichlorobenzene	ND	10	1.00	
1,2,4-Trichlorobenzene	ND	5.1	1.00	
1,1,1-Trichloroethane	ND	5.1	1.00	
1,1,2-Trichloroethane	ND	5.1	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	51	1.00	
Trichloroethene	ND	5.1	1.00	
1,2,3-Trichloropropane	ND	5.1	1.00	
1,2,4-Trimethylbenzene	ND	5.1	1.00	
Trichlorofluoromethane	ND	51	1.00	
1,3,5-Trimethylbenzene	ND	5.1	1.00	
Vinyl Acetate	ND	51	1.00	
Vinyl Chloride	ND	5.1	1.00	
p/m-Xylene	ND	5.1	1.00	
o-Xylene	ND	5.1	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	5.1	1.00	
Tert-Butyl Alcohol (TBA)	ND	51	1.00	
Diisopropyl Ether (DIPE)	ND	10	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	10	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	10	1.00	
Ethanol	ND	260	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	88	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/15/17
1920 Main Street, Suite 300	Work Order:	17-03-1154
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/kg
Project: INFINEON - El Segundo / 0397848		Page 21 of 60

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	110	79-133	
1,2-Dichloroethane-d4	105	71-155	
Toluene-d8	101	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-5-0-1	**17-03-1154-8-B**	**03/14/17 16:04**	**Solid**	**GC/MS LL**	**03/16/17**	**03/16/17 17:45**	**170316L012**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	130	1.00	
Benzene	ND	5.0	1.00	
Bromobenzene	ND	5.0	1.00	
Bromochloromethane	ND	5.0	1.00	
Bromodichloromethane	ND	5.0	1.00	
Bromoform	ND	5.0	1.00	
Bromomethane	ND	25	1.00	
2-Butanone	ND	50	1.00	
n-Butylbenzene	ND	5.0	1.00	
sec-Butylbenzene	ND	5.0	1.00	
tert-Butylbenzene	ND	5.0	1.00	
Carbon Disulfide	ND	50	1.00	
Carbon Tetrachloride	ND	5.0	1.00	
Chlorobenzene	ND	5.0	1.00	
Chloroethane	ND	5.0	1.00	
Chloroform	ND	5.0	1.00	
Chloromethane	ND	25	1.00	
2-Chlorotoluene	ND	5.0	1.00	
4-Chlorotoluene	ND	5.0	1.00	
Dibromochloromethane	ND	5.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	10	1.00	
1,2-Dibromoethane	ND	5.0	1.00	
Dibromomethane	ND	5.0	1.00	
1,2-Dichlorobenzene	ND	5.0	1.00	
1,3-Dichlorobenzene	ND	5.0	1.00	
1,4-Dichlorobenzene	ND	5.0	1.00	
Dichlorodifluoromethane	ND	5.0	1.00	
1,1-Dichloroethane	ND	5.0	1.00	
1,2-Dichloroethane	ND	5.0	1.00	
1,1-Dichloroethene	ND	5.0	1.00	
c-1,2-Dichloroethene	ND	5.0	1.00	
t-1,2-Dichloroethene	ND	5.0	1.00	
1,2-Dichloropropane	ND	5.0	1.00	
1,3-Dichloropropane	ND	5.0	1.00	
2,2-Dichloropropane	ND	5.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/15/17
1920 Main Street, Suite 300	Work Order:	17-03-1154
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/kg
Project: INFINEON - El Segundo / 0397848		Page 23 of 60

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	5.0	1.00	
c-1,3-Dichloropropene	ND	5.0	1.00	
t-1,3-Dichloropropene	ND	5.0	1.00	
Ethylbenzene	ND	5.0	1.00	
2-Hexanone	ND	50	1.00	
Isopropylbenzene	ND	5.0	1.00	
p-Isopropyltoluene	ND	5.0	1.00	
Methylene Chloride	ND	50	1.00	
4-Methyl-2-Pentanone	ND	50	1.00	
Naphthalene	ND	50	1.00	
n-Propylbenzene	ND	5.0	1.00	
Styrene	ND	5.0	1.00	
1,1,1,2-Tetrachloroethane	ND	5.0	1.00	
1,1,2,2-Tetrachloroethane	ND	5.0	1.00	
Tetrachloroethene	ND	5.0	1.00	
Toluene	ND	5.0	1.00	
1,2,3-Trichlorobenzene	ND	10	1.00	
1,2,4-Trichlorobenzene	ND	5.0	1.00	
1,1,1-Trichloroethane	ND	5.0	1.00	
1,1,2-Trichloroethane	ND	5.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	50	1.00	
Trichloroethene	ND	5.0	1.00	
1,2,3-Trichloropropane	ND	5.0	1.00	
1,2,4-Trimethylbenzene	ND	5.0	1.00	
Trichlorofluoromethane	ND	50	1.00	
1,3,5-Trimethylbenzene	ND	5.0	1.00	
Vinyl Acetate	ND	50	1.00	
Vinyl Chloride	ND	5.0	1.00	
p/m-Xylene	ND	5.0	1.00	
o-Xylene	ND	5.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	5.0	1.00	
Tert-Butyl Alcohol (TBA)	ND	50	1.00	
Diisopropyl Ether (DIPE)	ND	10	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	10	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	10	1.00	
Ethanol	ND	250	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	89	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/kg
Project: INFINEON - El Segundo / 0397848			Page 24 of 60

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	109	79-133	
1,2-Dichloroethane-d4	106	71-155	
Toluene-d8	102	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-6-0-1	**17-03-1154-9-B**	**03/14/17 16:11**	**Solid**	**GC/MS LL**	**03/16/17**	**03/16/17 18:14**	**170316L012**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	130	1.00	
Benzene	ND	5.1	1.00	
Bromobenzene	ND	5.1	1.00	
Bromochloromethane	ND	5.1	1.00	
Bromodichloromethane	ND	5.1	1.00	
Bromoform	ND	5.1	1.00	
Bromomethane	ND	26	1.00	
2-Butanone	ND	51	1.00	
n-Butylbenzene	ND	5.1	1.00	
sec-Butylbenzene	ND	5.1	1.00	
tert-Butylbenzene	ND	5.1	1.00	
Carbon Disulfide	ND	51	1.00	
Carbon Tetrachloride	ND	5.1	1.00	
Chlorobenzene	ND	5.1	1.00	
Chloroethane	ND	5.1	1.00	
Chloroform	ND	5.1	1.00	
Chloromethane	ND	26	1.00	
2-Chlorotoluene	ND	5.1	1.00	
4-Chlorotoluene	ND	5.1	1.00	
Dibromochloromethane	ND	5.1	1.00	
1,2-Dibromo-3-Chloropropane	ND	10	1.00	
1,2-Dibromoethane	ND	5.1	1.00	
Dibromomethane	ND	5.1	1.00	
1,2-Dichlorobenzene	ND	5.1	1.00	
1,3-Dichlorobenzene	ND	5.1	1.00	
1,4-Dichlorobenzene	ND	5.1	1.00	
Dichlorodifluoromethane	ND	5.1	1.00	
1,1-Dichloroethane	ND	5.1	1.00	
1,2-Dichloroethane	ND	5.1	1.00	
1,1-Dichloroethene	ND	5.1	1.00	
c-1,2-Dichloroethene	ND	5.1	1.00	
t-1,2-Dichloroethene	ND	5.1	1.00	
1,2-Dichloropropane	ND	5.1	1.00	
1,3-Dichloropropane	ND	5.1	1.00	
2,2-Dichloropropane	ND	5.1	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/15/17
1920 Main Street, Suite 300	Work Order:	17-03-1154
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/kg
Project: INFINEON - El Segundo / 0397848		Page 26 of 60

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	5.1	1.00	
c-1,3-Dichloropropene	ND	5.1	1.00	
t-1,3-Dichloropropene	ND	5.1	1.00	
Ethylbenzene	ND	5.1	1.00	
2-Hexanone	ND	51	1.00	
Isopropylbenzene	ND	5.1	1.00	
p-Isopropyltoluene	ND	5.1	1.00	
Methylene Chloride	ND	51	1.00	
4-Methyl-2-Pentanone	ND	51	1.00	
Naphthalene	ND	51	1.00	
n-Propylbenzene	ND	5.1	1.00	
Styrene	ND	5.1	1.00	
1,1,1,2-Tetrachloroethane	ND	5.1	1.00	
1,1,2,2-Tetrachloroethane	ND	5.1	1.00	
Tetrachloroethene	ND	5.1	1.00	
Toluene	ND	5.1	1.00	
1,2,3-Trichlorobenzene	ND	10	1.00	
1,2,4-Trichlorobenzene	ND	5.1	1.00	
1,1,1-Trichloroethane	ND	5.1	1.00	
1,1,2-Trichloroethane	ND	5.1	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	51	1.00	
Trichloroethene	ND	5.1	1.00	
1,2,3-Trichloropropane	ND	5.1	1.00	
1,2,4-Trimethylbenzene	ND	5.1	1.00	
Trichlorofluoromethane	ND	51	1.00	
1,3,5-Trimethylbenzene	ND	5.1	1.00	
Vinyl Acetate	ND	51	1.00	
Vinyl Chloride	ND	5.1	1.00	
p/m-Xylene	ND	5.1	1.00	
o-Xylene	ND	5.1	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	5.1	1.00	
Tert-Butyl Alcohol (TBA)	ND	51	1.00	
Diisopropyl Ether (DIPE)	ND	10	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	10	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	10	1.00	
Ethanol	ND	260	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	87	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/kg
Project: INFINEON - El Segundo / 0397848			Page 27 of 60

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	110	79-133	
1,2-Dichloroethane-d4	108	71-155	
Toluene-d8	101	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-2-1-2	**17-03-1154-10-B**	**03/14/17 16:15**	**Solid**	**GC/MS LL**	**03/16/17**	**03/17/17 01:30**	**170316L066**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	130	1.00	
Benzene	ND	5.1	1.00	
Bromobenzene	ND	5.1	1.00	
Bromochloromethane	ND	5.1	1.00	
Bromodichloromethane	ND	5.1	1.00	
Bromoform	ND	5.1	1.00	
Bromomethane	ND	26	1.00	
2-Butanone	ND	51	1.00	
n-Butylbenzene	ND	5.1	1.00	
sec-Butylbenzene	ND	5.1	1.00	
tert-Butylbenzene	ND	5.1	1.00	
Carbon Disulfide	ND	51	1.00	
Carbon Tetrachloride	ND	5.1	1.00	
Chlorobenzene	ND	5.1	1.00	
Chloroethane	ND	5.1	1.00	
Chloroform	ND	5.1	1.00	
Chloromethane	ND	26	1.00	
2-Chlorotoluene	ND	5.1	1.00	
4-Chlorotoluene	ND	5.1	1.00	
Dibromochloromethane	ND	5.1	1.00	
1,2-Dibromo-3-Chloropropane	ND	10	1.00	
1,2-Dibromoethane	ND	5.1	1.00	
Dibromomethane	ND	5.1	1.00	
1,2-Dichlorobenzene	ND	5.1	1.00	
1,3-Dichlorobenzene	ND	5.1	1.00	
1,4-Dichlorobenzene	ND	5.1	1.00	
Dichlorodifluoromethane	ND	5.1	1.00	
1,1-Dichloroethane	ND	5.1	1.00	
1,2-Dichloroethane	ND	5.1	1.00	
1,1-Dichloroethene	ND	5.1	1.00	
c-1,2-Dichloroethene	ND	5.1	1.00	
t-1,2-Dichloroethene	ND	5.1	1.00	
1,2-Dichloropropane	ND	5.1	1.00	
1,3-Dichloropropane	ND	5.1	1.00	
2,2-Dichloropropane	ND	5.1	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/15/17
1920 Main Street, Suite 300	Work Order:	17-03-1154
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/kg
Project: INFINEON - El Segundo / 0397848		Page 29 of 60

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	5.1	1.00	
c-1,3-Dichloropropene	ND	5.1	1.00	
t-1,3-Dichloropropene	ND	5.1	1.00	
Ethylbenzene	ND	5.1	1.00	
2-Hexanone	ND	51	1.00	
Isopropylbenzene	ND	5.1	1.00	
p-Isopropyltoluene	ND	5.1	1.00	
Methylene Chloride	ND	51	1.00	
4-Methyl-2-Pentanone	ND	51	1.00	
Naphthalene	ND	51	1.00	
n-Propylbenzene	ND	5.1	1.00	
Styrene	ND	5.1	1.00	
1,1,1,2-Tetrachloroethane	ND	5.1	1.00	
1,1,2,2-Tetrachloroethane	ND	5.1	1.00	
Tetrachloroethene	ND	5.1	1.00	
Toluene	ND	5.1	1.00	
1,2,3-Trichlorobenzene	ND	10	1.00	
1,2,4-Trichlorobenzene	ND	5.1	1.00	
1,1,1-Trichloroethane	ND	5.1	1.00	
1,1,2-Trichloroethane	ND	5.1	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	51	1.00	
Trichloroethene	ND	5.1	1.00	
1,2,3-Trichloropropane	ND	5.1	1.00	
1,2,4-Trimethylbenzene	ND	5.1	1.00	
Trichlorofluoromethane	ND	51	1.00	
1,3,5-Trimethylbenzene	ND	5.1	1.00	
Vinyl Acetate	ND	51	1.00	
Vinyl Chloride	ND	5.1	1.00	
p/m-Xylene	ND	5.1	1.00	
o-Xylene	ND	5.1	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	5.1	1.00	
Tert-Butyl Alcohol (TBA)	ND	51	1.00	
Diisopropyl Ether (DIPE)	ND	10	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	10	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	10	1.00	
Ethanol	ND	260	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	87	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/kg
Project: INFINEON - El Segundo / 0397848			Page 30 of 60

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	109	79-133	
1,2-Dichloroethane-d4	105	71-155	
Toluene-d8	101	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-3-0-1	**17-03-1154-11-B**	**03/14/17 16:18**	**Solid**	**GC/MS LL**	**03/16/17**	**03/16/17 23:34**	**170316L066**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	120	1.00	
Benzene	ND	5.0	1.00	
Bromobenzene	ND	5.0	1.00	
Bromochloromethane	ND	5.0	1.00	
Bromodichloromethane	ND	5.0	1.00	
Bromoform	ND	5.0	1.00	
Bromomethane	ND	25	1.00	
2-Butanone	ND	50	1.00	
n-Butylbenzene	ND	5.0	1.00	
sec-Butylbenzene	ND	5.0	1.00	
tert-Butylbenzene	ND	5.0	1.00	
Carbon Disulfide	ND	50	1.00	
Carbon Tetrachloride	ND	5.0	1.00	
Chlorobenzene	ND	5.0	1.00	
Chloroethane	ND	5.0	1.00	
Chloroform	ND	5.0	1.00	
Chloromethane	ND	25	1.00	
2-Chlorotoluene	ND	5.0	1.00	
4-Chlorotoluene	ND	5.0	1.00	
Dibromochloromethane	ND	5.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	10	1.00	
1,2-Dibromoethane	ND	5.0	1.00	
Dibromomethane	ND	5.0	1.00	
1,2-Dichlorobenzene	ND	5.0	1.00	
1,3-Dichlorobenzene	ND	5.0	1.00	
1,4-Dichlorobenzene	ND	5.0	1.00	
Dichlorodifluoromethane	ND	5.0	1.00	
1,1-Dichloroethane	ND	5.0	1.00	
1,2-Dichloroethane	ND	5.0	1.00	
1,1-Dichloroethene	ND	5.0	1.00	
c-1,2-Dichloroethene	ND	5.0	1.00	
t-1,2-Dichloroethene	ND	5.0	1.00	
1,2-Dichloropropane	ND	5.0	1.00	
1,3-Dichloropropane	ND	5.0	1.00	
2,2-Dichloropropane	ND	5.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/kg
Project: INFINEON - El Segundo / 0397848			Page 32 of 60

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	5.0	1.00	
c-1,3-Dichloropropene	ND	5.0	1.00	
t-1,3-Dichloropropene	ND	5.0	1.00	
Ethylbenzene	ND	5.0	1.00	
2-Hexanone	ND	50	1.00	
Isopropylbenzene	ND	5.0	1.00	
p-Isopropyltoluene	ND	5.0	1.00	
Methylene Chloride	ND	50	1.00	
4-Methyl-2-Pentanone	ND	50	1.00	
Naphthalene	ND	50	1.00	
n-Propylbenzene	ND	5.0	1.00	
Styrene	ND	5.0	1.00	
1,1,1,2-Tetrachloroethane	ND	5.0	1.00	
1,1,2,2-Tetrachloroethane	ND	5.0	1.00	
Tetrachloroethene	ND	5.0	1.00	
Toluene	ND	5.0	1.00	
1,2,3-Trichlorobenzene	ND	10	1.00	
1,2,4-Trichlorobenzene	ND	5.0	1.00	
1,1,1-Trichloroethane	ND	5.0	1.00	
1,1,2-Trichloroethane	ND	5.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	50	1.00	
Trichloroethene	ND	5.0	1.00	
1,2,3-Trichloropropane	ND	5.0	1.00	
1,2,4-Trimethylbenzene	ND	5.0	1.00	
Trichlorofluoromethane	ND	50	1.00	
1,3,5-Trimethylbenzene	ND	5.0	1.00	
Vinyl Acetate	ND	50	1.00	
Vinyl Chloride	ND	5.0	1.00	
p/m-Xylene	ND	5.0	1.00	
o-Xylene	ND	5.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	5.0	1.00	
Tert-Butyl Alcohol (TBA)	ND	50	1.00	
Diisopropyl Ether (DIPE)	ND	10	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	10	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	10	1.00	
Ethanol	ND	250	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	88	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/kg
Project: INFINEON - El Segundo / 0397848			Page 33 of 60

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	110	79-133	
1,2-Dichloroethane-d4	106	71-155	
Toluene-d8	101	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-9-0-1	**17-03-1154-12-B**	**03/14/17 16:22**	**Solid**	**GC/MS LL**	**03/16/17**	**03/17/17 01:59**	**170316L066**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	120	1.00	
Benzene	ND	5.0	1.00	
Bromobenzene	ND	5.0	1.00	
Bromochloromethane	ND	5.0	1.00	
Bromodichloromethane	ND	5.0	1.00	
Bromoform	ND	5.0	1.00	
Bromomethane	ND	25	1.00	
2-Butanone	ND	50	1.00	
n-Butylbenzene	ND	5.0	1.00	
sec-Butylbenzene	ND	5.0	1.00	
tert-Butylbenzene	ND	5.0	1.00	
Carbon Disulfide	ND	50	1.00	
Carbon Tetrachloride	ND	5.0	1.00	
Chlorobenzene	ND	5.0	1.00	
Chloroethane	ND	5.0	1.00	
Chloroform	ND	5.0	1.00	
Chloromethane	ND	25	1.00	
2-Chlorotoluene	ND	5.0	1.00	
4-Chlorotoluene	ND	5.0	1.00	
Dibromochloromethane	ND	5.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	9.9	1.00	
1,2-Dibromoethane	ND	5.0	1.00	
Dibromomethane	ND	5.0	1.00	
1,2-Dichlorobenzene	ND	5.0	1.00	
1,3-Dichlorobenzene	ND	5.0	1.00	
1,4-Dichlorobenzene	ND	5.0	1.00	
Dichlorodifluoromethane	ND	5.0	1.00	
1,1-Dichloroethane	ND	5.0	1.00	
1,2-Dichloroethane	ND	5.0	1.00	
1,1-Dichloroethene	ND	5.0	1.00	
c-1,2-Dichloroethene	ND	5.0	1.00	
t-1,2-Dichloroethene	ND	5.0	1.00	
1,2-Dichloropropane	ND	5.0	1.00	
1,3-Dichloropropane	ND	5.0	1.00	
2,2-Dichloropropane	ND	5.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/15/17
1920 Main Street, Suite 300	Work Order:	17-03-1154
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/kg
Project: INFINEON - El Segundo / 0397848		Page 35 of 60

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	5.0	1.00	
c-1,3-Dichloropropene	ND	5.0	1.00	
t-1,3-Dichloropropene	ND	5.0	1.00	
Ethylbenzene	ND	5.0	1.00	
2-Hexanone	ND	50	1.00	
Isopropylbenzene	ND	5.0	1.00	
p-Isopropyltoluene	ND	5.0	1.00	
Methylene Chloride	ND	50	1.00	
4-Methyl-2-Pentanone	ND	50	1.00	
Naphthalene	ND	50	1.00	
n-Propylbenzene	ND	5.0	1.00	
Styrene	ND	5.0	1.00	
1,1,1,2-Tetrachloroethane	ND	5.0	1.00	
1,1,2,2-Tetrachloroethane	ND	5.0	1.00	
Tetrachloroethene	ND	5.0	1.00	
Toluene	ND	5.0	1.00	
1,2,3-Trichlorobenzene	ND	9.9	1.00	
1,2,4-Trichlorobenzene	ND	5.0	1.00	
1,1,1-Trichloroethane	ND	5.0	1.00	
1,1,2-Trichloroethane	ND	5.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	50	1.00	
Trichloroethene	ND	5.0	1.00	
1,2,3-Trichloropropane	ND	5.0	1.00	
1,2,4-Trimethylbenzene	ND	5.0	1.00	
Trichlorofluoromethane	ND	50	1.00	
1,3,5-Trimethylbenzene	ND	5.0	1.00	
Vinyl Acetate	ND	50	1.00	
Vinyl Chloride	ND	5.0	1.00	
p/m-Xylene	ND	5.0	1.00	
o-Xylene	ND	5.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	5.0	1.00	
Tert-Butyl Alcohol (TBA)	ND	50	1.00	
Diisopropyl Ether (DIPE)	ND	9.9	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	9.9	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	9.9	1.00	
Ethanol	ND	250	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	88	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/15/17
1920 Main Street, Suite 300	Work Order:	17-03-1154
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/kg
Project: INFINEON - El Segundo / 0397848		Page 36 of 60

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	112	79-133	
1,2-Dichloroethane-d4	109	71-155	
Toluene-d8	101	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-4-0-1	**17-03-1154-13-B**	**03/14/17 16:25**	**Solid**	**GC/MS LL**	**03/16/17**	**03/17/17 02:28**	**170316L066**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	130	1.00	
Benzene	ND	5.1	1.00	
Bromobenzene	ND	5.1	1.00	
Bromochloromethane	ND	5.1	1.00	
Bromodichloromethane	ND	5.1	1.00	
Bromoform	ND	5.1	1.00	
Bromomethane	ND	26	1.00	
2-Butanone	ND	51	1.00	
n-Butylbenzene	ND	5.1	1.00	
sec-Butylbenzene	ND	5.1	1.00	
tert-Butylbenzene	ND	5.1	1.00	
Carbon Disulfide	ND	51	1.00	
Carbon Tetrachloride	ND	5.1	1.00	
Chlorobenzene	ND	5.1	1.00	
Chloroethane	ND	5.1	1.00	
Chloroform	ND	5.1	1.00	
Chloromethane	ND	26	1.00	
2-Chlorotoluene	ND	5.1	1.00	
4-Chlorotoluene	ND	5.1	1.00	
Dibromochloromethane	ND	5.1	1.00	
1,2-Dibromo-3-Chloropropane	ND	10	1.00	
1,2-Dibromoethane	ND	5.1	1.00	
Dibromomethane	ND	5.1	1.00	
1,2-Dichlorobenzene	ND	5.1	1.00	
1,3-Dichlorobenzene	ND	5.1	1.00	
1,4-Dichlorobenzene	ND	5.1	1.00	
Dichlorodifluoromethane	ND	5.1	1.00	
1,1-Dichloroethane	ND	5.1	1.00	
1,2-Dichloroethane	ND	5.1	1.00	
1,1-Dichloroethene	ND	5.1	1.00	
c-1,2-Dichloroethene	ND	5.1	1.00	
t-1,2-Dichloroethene	ND	5.1	1.00	
1,2-Dichloropropane	ND	5.1	1.00	
1,3-Dichloropropane	ND	5.1	1.00	
2,2-Dichloropropane	ND	5.1	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/15/17
1920 Main Street, Suite 300	Work Order:	17-03-1154
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/kg
Project: INFINEON - El Segundo / 0397848		Page 38 of 60

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	5.1	1.00	
c-1,3-Dichloropropene	ND	5.1	1.00	
t-1,3-Dichloropropene	ND	5.1	1.00	
Ethylbenzene	ND	5.1	1.00	
2-Hexanone	ND	51	1.00	
Isopropylbenzene	ND	5.1	1.00	
p-Isopropyltoluene	ND	5.1	1.00	
Methylene Chloride	ND	51	1.00	
4-Methyl-2-Pentanone	ND	51	1.00	
Naphthalene	ND	51	1.00	
n-Propylbenzene	ND	5.1	1.00	
Styrene	ND	5.1	1.00	
1,1,1,2-Tetrachloroethane	ND	5.1	1.00	
1,1,2,2-Tetrachloroethane	ND	5.1	1.00	
Tetrachloroethene	ND	5.1	1.00	
Toluene	ND	5.1	1.00	
1,2,3-Trichlorobenzene	ND	10	1.00	
1,2,4-Trichlorobenzene	ND	5.1	1.00	
1,1,1-Trichloroethane	ND	5.1	1.00	
1,1,2-Trichloroethane	ND	5.1	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	51	1.00	
Trichloroethene	ND	5.1	1.00	
1,2,3-Trichloropropane	ND	5.1	1.00	
1,2,4-Trimethylbenzene	ND	5.1	1.00	
Trichlorofluoromethane	ND	51	1.00	
1,3,5-Trimethylbenzene	ND	5.1	1.00	
Vinyl Acetate	ND	51	1.00	
Vinyl Chloride	ND	5.1	1.00	
p/m-Xylene	ND	5.1	1.00	
o-Xylene	ND	5.1	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	5.1	1.00	
Tert-Butyl Alcohol (TBA)	ND	51	1.00	
Diisopropyl Ether (DIPE)	ND	10	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	10	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	10	1.00	
Ethanol	ND	260	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	88	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/kg
Project: INFINEON - El Segundo / 0397848			Page 39 of 60

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	109	79-133	
1,2-Dichloroethane-d4	106	71-155	
Toluene-d8	102	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SB-19-0-1	**17-03-1154-14-B**	**03/14/17 16:28**	**Solid**	**GC/MS LL**	**03/16/17**	**03/17/17 02:57**	**170316L066**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	130	1.00	
Benzene	ND	5.0	1.00	
Bromobenzene	ND	5.0	1.00	
Bromochloromethane	ND	5.0	1.00	
Bromodichloromethane	ND	5.0	1.00	
Bromoform	ND	5.0	1.00	
Bromomethane	ND	25	1.00	
2-Butanone	ND	50	1.00	
n-Butylbenzene	ND	5.0	1.00	
sec-Butylbenzene	ND	5.0	1.00	
tert-Butylbenzene	ND	5.0	1.00	
Carbon Disulfide	ND	50	1.00	
Carbon Tetrachloride	ND	5.0	1.00	
Chlorobenzene	ND	5.0	1.00	
Chloroethane	ND	5.0	1.00	
Chloroform	ND	5.0	1.00	
Chloromethane	ND	25	1.00	
2-Chlorotoluene	ND	5.0	1.00	
4-Chlorotoluene	ND	5.0	1.00	
Dibromochloromethane	ND	5.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	10	1.00	
1,2-Dibromoethane	ND	5.0	1.00	
Dibromomethane	ND	5.0	1.00	
1,2-Dichlorobenzene	ND	5.0	1.00	
1,3-Dichlorobenzene	ND	5.0	1.00	
1,4-Dichlorobenzene	ND	5.0	1.00	
Dichlorodifluoromethane	ND	5.0	1.00	
1,1-Dichloroethane	ND	5.0	1.00	
1,2-Dichloroethane	ND	5.0	1.00	
1,1-Dichloroethene	ND	5.0	1.00	
c-1,2-Dichloroethene	ND	5.0	1.00	
t-1,2-Dichloroethene	ND	5.0	1.00	
1,2-Dichloropropane	ND	5.0	1.00	
1,3-Dichloropropane	ND	5.0	1.00	
2,2-Dichloropropane	ND	5.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/15/17
1920 Main Street, Suite 300	Work Order:	17-03-1154
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/kg
Project: INFINEON - El Segundo / 0397848		Page 41 of 60

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	5.0	1.00	
c-1,3-Dichloropropene	ND	5.0	1.00	
t-1,3-Dichloropropene	ND	5.0	1.00	
Ethylbenzene	ND	5.0	1.00	
2-Hexanone	ND	50	1.00	
Isopropylbenzene	ND	5.0	1.00	
p-Isopropyltoluene	ND	5.0	1.00	
Methylene Chloride	ND	50	1.00	
4-Methyl-2-Pentanone	ND	50	1.00	
Naphthalene	ND	50	1.00	
n-Propylbenzene	ND	5.0	1.00	
Styrene	ND	5.0	1.00	
1,1,1,2-Tetrachloroethane	ND	5.0	1.00	
1,1,2,2-Tetrachloroethane	ND	5.0	1.00	
Tetrachloroethene	ND	5.0	1.00	
Toluene	ND	5.0	1.00	
1,2,3-Trichlorobenzene	ND	10	1.00	
1,2,4-Trichlorobenzene	ND	5.0	1.00	
1,1,1-Trichloroethane	ND	5.0	1.00	
1,1,2-Trichloroethane	ND	5.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	50	1.00	
Trichloroethene	ND	5.0	1.00	
1,2,3-Trichloropropane	ND	5.0	1.00	
1,2,4-Trimethylbenzene	ND	5.0	1.00	
Trichlorofluoromethane	ND	50	1.00	
1,3,5-Trimethylbenzene	ND	5.0	1.00	
Vinyl Acetate	ND	50	1.00	
Vinyl Chloride	ND	5.0	1.00	
p/m-Xylene	ND	5.0	1.00	
o-Xylene	ND	5.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	5.0	1.00	
Tert-Butyl Alcohol (TBA)	ND	50	1.00	
Diisopropyl Ether (DIPE)	ND	10	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	10	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	10	1.00	
Ethanol	ND	250	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	87	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/15/17
1920 Main Street, Suite 300	Work Order:	17-03-1154
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/kg
Project: INFINEON - El Segundo / 0397848		Page 42 of 60

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	109	79-133	
1,2-Dichloroethane-d4	106	71-155	
Toluene-d8	102	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SBB2-1-0-1	**17-03-1154-15-B**	**03/15/17 09:05**	**Solid**	**GC/MS LL**	**03/16/17**	**03/17/17 03:26**	**170316L066**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	130	1.00	
Benzene	ND	5.2	1.00	
Bromobenzene	ND	5.2	1.00	
Bromochloromethane	ND	5.2	1.00	
Bromodichloromethane	ND	5.2	1.00	
Bromoform	ND	5.2	1.00	
Bromomethane	ND	26	1.00	
2-Butanone	ND	52	1.00	
n-Butylbenzene	ND	5.2	1.00	
sec-Butylbenzene	ND	5.2	1.00	
tert-Butylbenzene	ND	5.2	1.00	
Carbon Disulfide	ND	52	1.00	
Carbon Tetrachloride	ND	5.2	1.00	
Chlorobenzene	ND	5.2	1.00	
Chloroethane	ND	5.2	1.00	
Chloroform	ND	5.2	1.00	
Chloromethane	ND	26	1.00	
2-Chlorotoluene	ND	5.2	1.00	
4-Chlorotoluene	ND	5.2	1.00	
Dibromochloromethane	ND	5.2	1.00	
1,2-Dibromo-3-Chloropropane	ND	10	1.00	
1,2-Dibromoethane	ND	5.2	1.00	
Dibromomethane	ND	5.2	1.00	
1,2-Dichlorobenzene	ND	5.2	1.00	
1,3-Dichlorobenzene	ND	5.2	1.00	
1,4-Dichlorobenzene	ND	5.2	1.00	
Dichlorodifluoromethane	ND	5.2	1.00	
1,1-Dichloroethane	ND	5.2	1.00	
1,2-Dichloroethane	ND	5.2	1.00	
1,1-Dichloroethene	ND	5.2	1.00	
c-1,2-Dichloroethene	ND	5.2	1.00	
t-1,2-Dichloroethene	ND	5.2	1.00	
1,2-Dichloropropane	ND	5.2	1.00	
1,3-Dichloropropane	ND	5.2	1.00	
2,2-Dichloropropane	ND	5.2	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/15/17
1920 Main Street, Suite 300	Work Order:	17-03-1154
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/kg
Project: INFINEON - El Segundo / 0397848		Page 44 of 60

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	5.2	1.00	
c-1,3-Dichloropropene	ND	5.2	1.00	
t-1,3-Dichloropropene	ND	5.2	1.00	
Ethylbenzene	ND	5.2	1.00	
2-Hexanone	ND	52	1.00	
Isopropylbenzene	ND	5.2	1.00	
p-Isopropyltoluene	ND	5.2	1.00	
Methylene Chloride	ND	52	1.00	
4-Methyl-2-Pentanone	ND	52	1.00	
Naphthalene	ND	52	1.00	
n-Propylbenzene	ND	5.2	1.00	
Styrene	ND	5.2	1.00	
1,1,1,2-Tetrachloroethane	ND	5.2	1.00	
1,1,2,2-Tetrachloroethane	ND	5.2	1.00	
Tetrachloroethene	ND	5.2	1.00	
Toluene	ND	5.2	1.00	
1,2,3-Trichlorobenzene	ND	10	1.00	
1,2,4-Trichlorobenzene	ND	5.2	1.00	
1,1,1-Trichloroethane	ND	5.2	1.00	
1,1,2-Trichloroethane	ND	5.2	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	52	1.00	
Trichloroethene	ND	5.2	1.00	
1,2,3-Trichloropropane	ND	5.2	1.00	
1,2,4-Trimethylbenzene	ND	5.2	1.00	
Trichlorofluoromethane	ND	52	1.00	
1,3,5-Trimethylbenzene	ND	5.2	1.00	
Vinyl Acetate	ND	52	1.00	
Vinyl Chloride	ND	5.2	1.00	
p/m-Xylene	ND	5.2	1.00	
o-Xylene	ND	5.2	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	5.2	1.00	
Tert-Butyl Alcohol (TBA)	ND	52	1.00	
Diisopropyl Ether (DIPE)	ND	10	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	10	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	10	1.00	
Ethanol	ND	260	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	87	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/kg
Project: INFINEON - El Segundo / 0397848			Page 45 of 60

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	112	79-133	
1,2-Dichloroethane-d4	110	71-155	
Toluene-d8	101	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SBB2-4-0-1	**17-03-1154-16-B**	**03/15/17 09:35**	**Solid**	**GC/MS GGG**	**03/16/17**	**03/17/17 18:04**	**170317L038**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	130	1.00	
Benzene	ND	5.2	1.00	
Bromobenzene	ND	5.2	1.00	
Bromochloromethane	ND	5.2	1.00	
Bromodichloromethane	ND	5.2	1.00	
Bromoform	ND	5.2	1.00	
Bromomethane	ND	26	1.00	
2-Butanone	ND	52	1.00	
n-Butylbenzene	ND	5.2	1.00	
sec-Butylbenzene	ND	5.2	1.00	
tert-Butylbenzene	ND	5.2	1.00	
Carbon Disulfide	ND	52	1.00	
Carbon Tetrachloride	ND	5.2	1.00	
Chlorobenzene	ND	5.2	1.00	
Chloroethane	ND	5.2	1.00	
Chloroform	ND	5.2	1.00	
Chloromethane	ND	26	1.00	
2-Chlorotoluene	ND	5.2	1.00	
4-Chlorotoluene	ND	5.2	1.00	
Dibromochloromethane	ND	5.2	1.00	
1,2-Dibromo-3-Chloropropane	ND	10	1.00	
1,2-Dibromoethane	ND	5.2	1.00	
Dibromomethane	ND	5.2	1.00	
1,2-Dichlorobenzene	ND	5.2	1.00	
1,3-Dichlorobenzene	ND	5.2	1.00	
1,4-Dichlorobenzene	ND	5.2	1.00	
Dichlorodifluoromethane	ND	5.2	1.00	
1,1-Dichloroethane	ND	5.2	1.00	
1,2-Dichloroethane	ND	5.2	1.00	
1,1-Dichloroethene	ND	5.2	1.00	
c-1,2-Dichloroethene	ND	5.2	1.00	
t-1,2-Dichloroethene	ND	5.2	1.00	
1,2-Dichloropropane	ND	5.2	1.00	
1,3-Dichloropropane	ND	5.2	1.00	
2,2-Dichloropropane	ND	5.2	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/15/17
1920 Main Street, Suite 300	Work Order:	17-03-1154
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/kg
Project: INFINEON - El Segundo / 0397848		Page 47 of 60

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	5.2	1.00	
c-1,3-Dichloropropene	ND	5.2	1.00	
t-1,3-Dichloropropene	ND	5.2	1.00	
Ethylbenzene	ND	5.2	1.00	
2-Hexanone	ND	52	1.00	
Isopropylbenzene	ND	5.2	1.00	
p-Isopropyltoluene	ND	5.2	1.00	
Methylene Chloride	ND	52	1.00	
4-Methyl-2-Pentanone	ND	52	1.00	
Naphthalene	ND	52	1.00	
n-Propylbenzene	ND	5.2	1.00	
Styrene	ND	5.2	1.00	
1,1,1,2-Tetrachloroethane	ND	5.2	1.00	
1,1,2,2-Tetrachloroethane	ND	5.2	1.00	
Tetrachloroethene	ND	5.2	1.00	
Toluene	ND	5.2	1.00	
1,2,3-Trichlorobenzene	ND	10	1.00	
1,2,4-Trichlorobenzene	ND	5.2	1.00	
1,1,1-Trichloroethane	ND	5.2	1.00	
1,1,2-Trichloroethane	ND	5.2	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	52	1.00	
Trichloroethene	ND	5.2	1.00	
1,2,3-Trichloropropane	ND	5.2	1.00	
1,2,4-Trimethylbenzene	ND	5.2	1.00	
Trichlorofluoromethane	ND	52	1.00	
1,3,5-Trimethylbenzene	ND	5.2	1.00	
Vinyl Acetate	ND	52	1.00	
Vinyl Chloride	ND	5.2	1.00	
p/m-Xylene	ND	5.2	1.00	
o-Xylene	ND	5.2	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	5.2	1.00	
Tert-Butyl Alcohol (TBA)	ND	52	1.00	
Diisopropyl Ether (DIPE)	ND	10	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	10	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	10	1.00	
Ethanol	ND	260	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	89	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/kg
Project: INFINEON - El Segundo / 0397848			Page 48 of 60

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	73	79-133	2,6
1,2-Dichloroethane-d4	107	71-155	
Toluene-d8	97	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SBB2-5-3-4	**17-03-1154-17-B**	**03/15/17 10:50**	**Solid**	**GC/MS LL**	**03/16/17**	**03/17/17 04:24**	**170316L066**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	120	1.00	
Benzene	ND	4.9	1.00	
Bromobenzene	ND	4.9	1.00	
Bromochloromethane	ND	4.9	1.00	
Bromodichloromethane	ND	4.9	1.00	
Bromoform	ND	4.9	1.00	
Bromomethane	ND	25	1.00	
2-Butanone	ND	49	1.00	
n-Butylbenzene	ND	4.9	1.00	
sec-Butylbenzene	ND	4.9	1.00	
tert-Butylbenzene	ND	4.9	1.00	
Carbon Disulfide	ND	49	1.00	
Carbon Tetrachloride	ND	4.9	1.00	
Chlorobenzene	ND	4.9	1.00	
Chloroethane	ND	4.9	1.00	
Chloroform	ND	4.9	1.00	
Chloromethane	ND	25	1.00	
2-Chlorotoluene	ND	4.9	1.00	
4-Chlorotoluene	ND	4.9	1.00	
Dibromochloromethane	ND	4.9	1.00	
1,2-Dibromo-3-Chloropropane	ND	9.8	1.00	
1,2-Dibromoethane	ND	4.9	1.00	
Dibromomethane	ND	4.9	1.00	
1,2-Dichlorobenzene	ND	4.9	1.00	
1,3-Dichlorobenzene	ND	4.9	1.00	
1,4-Dichlorobenzene	ND	4.9	1.00	
Dichlorodifluoromethane	ND	4.9	1.00	
1,1-Dichloroethane	ND	4.9	1.00	
1,2-Dichloroethane	ND	4.9	1.00	
1,1-Dichloroethene	ND	4.9	1.00	
c-1,2-Dichloroethene	ND	4.9	1.00	
t-1,2-Dichloroethene	ND	4.9	1.00	
1,2-Dichloropropane	ND	4.9	1.00	
1,3-Dichloropropane	ND	4.9	1.00	
2,2-Dichloropropane	ND	4.9	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/kg

Project: INFINEON - El Segundo / 0397848

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	4.9	1.00	
c-1,3-Dichloropropene	ND	4.9	1.00	
t-1,3-Dichloropropene	ND	4.9	1.00	
Ethylbenzene	ND	4.9	1.00	
2-Hexanone	ND	49	1.00	
Isopropylbenzene	ND	4.9	1.00	
p-Isopropyltoluene	ND	4.9	1.00	
Methylene Chloride	ND	49	1.00	
4-Methyl-2-Pentanone	ND	49	1.00	
Naphthalene	ND	49	1.00	
n-Propylbenzene	ND	4.9	1.00	
Styrene	ND	4.9	1.00	
1,1,1,2-Tetrachloroethane	ND	4.9	1.00	
1,1,2,2-Tetrachloroethane	ND	4.9	1.00	
Tetrachloroethene	21	4.9	1.00	
Toluene	ND	4.9	1.00	
1,2,3-Trichlorobenzene	ND	9.8	1.00	
1,2,4-Trichlorobenzene	ND	4.9	1.00	
1,1,1-Trichloroethane	ND	4.9	1.00	
1,1,2-Trichloroethane	ND	4.9	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	49	1.00	
Trichloroethene	ND	4.9	1.00	
1,2,3-Trichloropropane	ND	4.9	1.00	
1,2,4-Trimethylbenzene	ND	4.9	1.00	
Trichlorofluoromethane	ND	49	1.00	
1,3,5-Trimethylbenzene	ND	4.9	1.00	
Vinyl Acetate	ND	49	1.00	
Vinyl Chloride	ND	4.9	1.00	
p/m-Xylene	ND	4.9	1.00	
o-Xylene	ND	4.9	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	4.9	1.00	
Tert-Butyl Alcohol (TBA)	ND	49	1.00	
Diisopropyl Ether (DIPE)	ND	9.8	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	9.8	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	9.8	1.00	
Ethanol	ND	250	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	87	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/kg
Project: INFINEON - El Segundo / 0397848			Page 51 of 60

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	110	79-133	
1,2-Dichloroethane-d4	108	71-155	
Toluene-d8	101	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-796-12455**	**N/A**	**Solid**	**GC/MS LL**	**03/16/17**	**03/16/17 11:19**	**170316L012**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	120	1.00	
Benzene	ND	5.0	1.00	
Bromobenzene	ND	5.0	1.00	
Bromochloromethane	ND	5.0	1.00	
Bromodichloromethane	ND	5.0	1.00	
Bromoform	ND	5.0	1.00	
Bromomethane	ND	25	1.00	
2-Butanone	ND	50	1.00	
n-Butylbenzene	ND	5.0	1.00	
sec-Butylbenzene	ND	5.0	1.00	
tert-Butylbenzene	ND	5.0	1.00	
Carbon Disulfide	ND	50	1.00	
Carbon Tetrachloride	ND	5.0	1.00	
Chlorobenzene	ND	5.0	1.00	
Chloroethane	ND	5.0	1.00	
Chloroform	ND	5.0	1.00	
Chloromethane	ND	25	1.00	
2-Chlorotoluene	ND	5.0	1.00	
4-Chlorotoluene	ND	5.0	1.00	
Dibromochloromethane	ND	5.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	10	1.00	
1,2-Dibromoethane	ND	5.0	1.00	
Dibromomethane	ND	5.0	1.00	
1,2-Dichlorobenzene	ND	5.0	1.00	
1,3-Dichlorobenzene	ND	5.0	1.00	
1,4-Dichlorobenzene	ND	5.0	1.00	
Dichlorodifluoromethane	ND	5.0	1.00	
1,1-Dichloroethane	ND	5.0	1.00	
1,2-Dichloroethane	ND	5.0	1.00	
1,1-Dichloroethene	ND	5.0	1.00	
c-1,2-Dichloroethene	ND	5.0	1.00	
t-1,2-Dichloroethene	ND	5.0	1.00	
1,2-Dichloropropane	ND	5.0	1.00	
1,3-Dichloropropane	ND	5.0	1.00	
2,2-Dichloropropane	ND	5.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/15/17
1920 Main Street, Suite 300	Work Order:	17-03-1154
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/kg
Project: INFINEON - El Segundo / 0397848		Page 53 of 60

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	5.0	1.00	
c-1,3-Dichloropropene	ND	5.0	1.00	
t-1,3-Dichloropropene	ND	5.0	1.00	
Ethylbenzene	ND	5.0	1.00	
2-Hexanone	ND	50	1.00	
Isopropylbenzene	ND	5.0	1.00	
p-Isopropyltoluene	ND	5.0	1.00	
Methylene Chloride	ND	50	1.00	
4-Methyl-2-Pentanone	ND	50	1.00	
Naphthalene	ND	50	1.00	
n-Propylbenzene	ND	5.0	1.00	
Styrene	ND	5.0	1.00	
1,1,1,2-Tetrachloroethane	ND	5.0	1.00	
1,1,2,2-Tetrachloroethane	ND	5.0	1.00	
Tetrachloroethene	ND	5.0	1.00	
Toluene	ND	5.0	1.00	
1,2,3-Trichlorobenzene	ND	10	1.00	
1,2,4-Trichlorobenzene	ND	5.0	1.00	
1,1,1-Trichloroethane	ND	5.0	1.00	
1,1,2-Trichloroethane	ND	5.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	50	1.00	
Trichloroethene	ND	5.0	1.00	
1,2,3-Trichloropropane	ND	5.0	1.00	
1,2,4-Trimethylbenzene	ND	5.0	1.00	
Trichlorofluoromethane	ND	50	1.00	
1,3,5-Trimethylbenzene	ND	5.0	1.00	
Vinyl Acetate	ND	50	1.00	
Vinyl Chloride	ND	5.0	1.00	
p/m-Xylene	ND	5.0	1.00	
o-Xylene	ND	5.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	5.0	1.00	
Tert-Butyl Alcohol (TBA)	ND	50	1.00	
Diisopropyl Ether (DIPE)	ND	10	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	10	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	10	1.00	
Ethanol	ND	250	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	89	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/kg
Project: INFINEON - El Segundo / 0397848			Page 54 of 60

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	110	79-133	
1,2-Dichloroethane-d4	105	71-155	
Toluene-d8	99	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-796-12463**	**N/A**	**Solid**	**GC/MS LL**	**03/16/17**	**03/16/17 22:35**	**170316L066**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	120	1.00	
Benzene	ND	5.0	1.00	
Bromobenzene	ND	5.0	1.00	
Bromochloromethane	ND	5.0	1.00	
Bromodichloromethane	ND	5.0	1.00	
Bromoform	ND	5.0	1.00	
Bromomethane	ND	25	1.00	
2-Butanone	ND	50	1.00	
n-Butylbenzene	ND	5.0	1.00	
sec-Butylbenzene	ND	5.0	1.00	
tert-Butylbenzene	ND	5.0	1.00	
Carbon Disulfide	ND	50	1.00	
Carbon Tetrachloride	ND	5.0	1.00	
Chlorobenzene	ND	5.0	1.00	
Chloroethane	ND	5.0	1.00	
Chloroform	ND	5.0	1.00	
Chloromethane	ND	25	1.00	
2-Chlorotoluene	ND	5.0	1.00	
4-Chlorotoluene	ND	5.0	1.00	
Dibromochloromethane	ND	5.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	10	1.00	
1,2-Dibromoethane	ND	5.0	1.00	
Dibromomethane	ND	5.0	1.00	
1,2-Dichlorobenzene	ND	5.0	1.00	
1,3-Dichlorobenzene	ND	5.0	1.00	
1,4-Dichlorobenzene	ND	5.0	1.00	
Dichlorodifluoromethane	ND	5.0	1.00	
1,1-Dichloroethane	ND	5.0	1.00	
1,2-Dichloroethane	ND	5.0	1.00	
1,1-Dichloroethene	ND	5.0	1.00	
c-1,2-Dichloroethene	ND	5.0	1.00	
t-1,2-Dichloroethene	ND	5.0	1.00	
1,2-Dichloropropane	ND	5.0	1.00	
1,3-Dichloropropane	ND	5.0	1.00	
2,2-Dichloropropane	ND	5.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/kg
Project: INFINEON - El Segundo / 0397848			Page 56 of 60

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	5.0	1.00	
c-1,3-Dichloropropene	ND	5.0	1.00	
t-1,3-Dichloropropene	ND	5.0	1.00	
Ethylbenzene	ND	5.0	1.00	
2-Hexanone	ND	50	1.00	
Isopropylbenzene	ND	5.0	1.00	
p-Isopropyltoluene	ND	5.0	1.00	
Methylene Chloride	ND	50	1.00	
4-Methyl-2-Pentanone	ND	50	1.00	
Naphthalene	ND	50	1.00	
n-Propylbenzene	ND	5.0	1.00	
Styrene	ND	5.0	1.00	
1,1,1,2-Tetrachloroethane	ND	5.0	1.00	
1,1,2,2-Tetrachloroethane	ND	5.0	1.00	
Tetrachloroethene	ND	5.0	1.00	
Toluene	ND	5.0	1.00	
1,2,3-Trichlorobenzene	ND	10	1.00	
1,2,4-Trichlorobenzene	ND	5.0	1.00	
1,1,1-Trichloroethane	ND	5.0	1.00	
1,1,2-Trichloroethane	ND	5.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	50	1.00	
Trichloroethene	ND	5.0	1.00	
1,2,3-Trichloropropane	ND	5.0	1.00	
1,2,4-Trimethylbenzene	ND	5.0	1.00	
Trichlorofluoromethane	ND	50	1.00	
1,3,5-Trimethylbenzene	ND	5.0	1.00	
Vinyl Acetate	ND	50	1.00	
Vinyl Chloride	ND	5.0	1.00	
p/m-Xylene	ND	5.0	1.00	
o-Xylene	ND	5.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	5.0	1.00	
Tert-Butyl Alcohol (TBA)	ND	50	1.00	
Diisopropyl Ether (DIPE)	ND	10	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	10	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	10	1.00	
Ethanol	ND	250	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	88	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/15/17
1920 Main Street, Suite 300	Work Order:	17-03-1154
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/kg
Project: INFINEON - El Segundo / 0397848		Page 57 of 60

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	109	79-133	
1,2-Dichloroethane-d4	107	71-155	
Toluene-d8	101	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/15/17
Work Order: 17-03-1154
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/kg

Project: INFINEON - El Segundo / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-796-12465**	**N/A**	**Solid**	**GC/MS GGG**	**03/17/17**	**03/17/17 15:50**	**170317L038**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	120	1.00	
Benzene	ND	5.0	1.00	
Bromobenzene	ND	5.0	1.00	
Bromochloromethane	ND	5.0	1.00	
Bromodichloromethane	ND	5.0	1.00	
Bromoform	ND	5.0	1.00	
Bromomethane	ND	25	1.00	
2-Butanone	ND	50	1.00	
n-Butylbenzene	ND	5.0	1.00	
sec-Butylbenzene	ND	5.0	1.00	
tert-Butylbenzene	ND	5.0	1.00	
Carbon Disulfide	ND	50	1.00	
Carbon Tetrachloride	ND	5.0	1.00	
Chlorobenzene	ND	5.0	1.00	
Chloroethane	ND	5.0	1.00	
Chloroform	ND	5.0	1.00	
Chloromethane	ND	25	1.00	
2-Chlorotoluene	ND	5.0	1.00	
4-Chlorotoluene	ND	5.0	1.00	
Dibromochloromethane	ND	5.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	10	1.00	
1,2-Dibromoethane	ND	5.0	1.00	
Dibromomethane	ND	5.0	1.00	
1,2-Dichlorobenzene	ND	5.0	1.00	
1,3-Dichlorobenzene	ND	5.0	1.00	
1,4-Dichlorobenzene	ND	5.0	1.00	
Dichlorodifluoromethane	ND	5.0	1.00	
1,1-Dichloroethane	ND	5.0	1.00	
1,2-Dichloroethane	ND	5.0	1.00	
1,1-Dichloroethene	ND	5.0	1.00	
c-1,2-Dichloroethene	ND	5.0	1.00	
t-1,2-Dichloroethene	ND	5.0	1.00	
1,2-Dichloropropane	ND	5.0	1.00	
1,3-Dichloropropane	ND	5.0	1.00	
2,2-Dichloropropane	ND	5.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/15/17
1920 Main Street, Suite 300	Work Order:	17-03-1154
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/kg
Project: INFINEON - El Segundo / 0397848		Page 59 of 60

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	5.0	1.00	
c-1,3-Dichloropropene	ND	5.0	1.00	
t-1,3-Dichloropropene	ND	5.0	1.00	
Ethylbenzene	ND	5.0	1.00	
2-Hexanone	ND	50	1.00	
Isopropylbenzene	ND	5.0	1.00	
p-Isopropyltoluene	ND	5.0	1.00	
Methylene Chloride	ND	50	1.00	
4-Methyl-2-Pentanone	ND	50	1.00	
Naphthalene	ND	50	1.00	
n-Propylbenzene	ND	5.0	1.00	
Styrene	ND	5.0	1.00	
1,1,1,2-Tetrachloroethane	ND	5.0	1.00	
1,1,2,2-Tetrachloroethane	ND	5.0	1.00	
Tetrachloroethene	ND	5.0	1.00	
Toluene	ND	5.0	1.00	
1,2,3-Trichlorobenzene	ND	10	1.00	
1,2,4-Trichlorobenzene	ND	5.0	1.00	
1,1,1-Trichloroethane	ND	5.0	1.00	
1,1,2-Trichloroethane	ND	5.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	50	1.00	
Trichloroethene	ND	5.0	1.00	
1,2,3-Trichloropropane	ND	5.0	1.00	
1,2,4-Trimethylbenzene	ND	5.0	1.00	
Trichlorofluoromethane	ND	50	1.00	
1,3,5-Trimethylbenzene	ND	5.0	1.00	
Vinyl Acetate	ND	50	1.00	
Vinyl Chloride	ND	5.0	1.00	
p/m-Xylene	ND	5.0	1.00	
o-Xylene	ND	5.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	5.0	1.00	
Tert-Butyl Alcohol (TBA)	ND	50	1.00	
Diisopropyl Ether (DIPE)	ND	10	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	10	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	10	1.00	
Ethanol	ND	250	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	91	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/kg
Project: INFINEON - El Segundo / 0397848			Page 60 of 60

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	95	79-133	
1,2-Dichloroethane-d4	112	71-155	
Toluene-d8	98	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Quality Control - Spike/Spike Duplicate

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)
Project: INFINEON - El Segundo / 0397848			Page 1 of 6

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
SB-20-0-1	**Sample**	**Solid**	**GC 45**	**03/17/17**	**03/18/17 20:14**	**170317S17**
SB-20-0-1	**Matrix Spike**	**Solid**	**GC 45**	**03/17/17**	**03/18/17 19:32**	**170317S17**
SB-20-0-1	**Matrix Spike Duplicate**	**Solid**	**GC 45**	**03/17/17**	**03/18/17 19:53**	**170317S17**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
TPH as Diesel	ND	400.0	378.0	95	369.5	92	64-130	2	0-15	

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - Spike/Spike Duplicate

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 3050B
		Method:	EPA 6010B
Project: INFINEON - El Segundo / 0397848			Page 2 of 6

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
SB-20-0-1	**Sample**	**Solid**	**ICP 7300**	**03/22/17**	**03/23/17 12:53**	**170322S05**
SB-20-0-1	**Matrix Spike**	**Solid**	**ICP 7300**	**03/22/17**	**03/23/17 12:54**	**170322S05**
SB-20-0-1	**Matrix Spike Duplicate**	**Solid**	**ICP 7300**	**03/22/17**	**03/23/17 12:55**	**170322S05**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Antimony	ND	25.00	13.75	55	13.69	55	50-115	0	0-20	
Arsenic	ND	25.00	25.15	101	23.81	95	75-125	5	0-20	
Barium	20.32	25.00	52.57	129	45.94	102	75-125	13	0-20	3
Beryllium	ND	25.00	25.86	103	24.76	99	75-125	4	0-20	
Cadmium	ND	25.00	25.82	103	24.61	98	75-125	5	0-20	
Chromium	9.833	25.00	39.73	120	35.86	104	75-125	10	0-20	
Cobalt	2.447	25.00	29.90	110	27.97	102	75-125	7	0-20	
Copper	2.385	25.00	29.68	109	27.99	102	75-125	6	0-20	
Lead	2.730	25.00	29.70	108	28.04	101	75-125	6	0-20	
Molybdenum	ND	25.00	24.08	96	22.68	91	75-125	6	0-20	
Nickel	3.652	25.00	30.17	106	27.87	97	75-125	8	0-20	
Selenium	ND	25.00	24.97	100	23.94	96	75-125	4	0-20	
Silver	ND	12.50	12.37	99	11.70	94	75-125	6	0-20	
Thallium	ND	25.00	24.80	99	23.72	95	75-125	4	0-20	
Vanadium	13.10	25.00	42.84	119	37.47	97	75-125	13	0-20	
Zinc	12.42	25.00	47.14	139	44.64	129	75-125	5	0-20	3

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - Spike/Spike Duplicate

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 7471A Total
		Method:	EPA 7471A
Project: INFINEON - El Segundo / 0397848			Page 3 of 6

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
SB-20-0-1	**Sample**	**Solid**	**Mercury 08**	**03/22/17**	**03/22/17 19:05**	**170322S04**
SB-20-0-1	**Matrix Spike**	**Solid**	**Mercury 08**	**03/22/17**	**03/22/17 19:07**	**170322S04**
SB-20-0-1	**Matrix Spike Duplicate**	**Solid**	**Mercury 08**	**03/22/17**	**03/22/17 19:09**	**170322S04**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Mercury	ND	0.8350	0.9945	119	1.002	120	71-137	1	0-14	

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - Spike/Spike Duplicate

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
Project: INFINEON - El Segundo / 0397848			Page 4 of 6

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
SB-20-0-1	**Sample**	**Solid**	**GC/MS LL**	**03/16/17**	**03/16/17 12:54**	**170316S002**
SB-20-0-1	**Matrix Spike**	**Solid**	**GC/MS LL**	**03/16/17**	**03/16/17 13:23**	**170316S002**
SB-20-0-1	**Matrix Spike Duplicate**	**Solid**	**GC/MS LL**	**03/16/17**	**03/16/17 13:52**	**170316S002**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Benzene	ND	50.00	46.92	94	46.40	93	61-127	1	0-20	
Carbon Tetrachloride	ND	50.00	51.59	103	52.58	105	51-135	2	0-29	
Chlorobenzene	ND	50.00	47.53	95	47.37	95	57-123	0	0-20	
1,2-Dibromoethane	ND	50.00	45.55	91	45.82	92	64-124	1	0-20	
1,2-Dichlorobenzene	ND	50.00	45.37	91	45.52	91	35-131	0	0-25	
1,2-Dichloroethane	ND	50.00	44.57	89	45.11	90	80-120	1	0-20	
1,1-Dichloroethene	ND	50.00	51.71	103	51.06	102	47-143	1	0-25	
Ethylbenzene	ND	50.00	48.54	97	48.07	96	57-129	1	0-22	
Toluene	ND	50.00	47.85	96	46.74	93	63-123	2	0-20	
Trichloroethene	ND	50.00	50.00	100	49.88	100	44-158	0	0-20	
Vinyl Chloride	ND	50.00	51.20	102	50.34	101	49-139	2	0-47	
p/m-Xylene	ND	100.0	93.60	94	93.65	94	70-130	0	0-30	
o-Xylene	ND	50.00	45.83	92	45.92	92	70-130	0	0-30	
Methyl-t-Butyl Ether (MTBE)	ND	50.00	42.70	85	43.86	88	57-123	3	0-21	
Tert-Butyl Alcohol (TBA)	ND	250.0	219.7	88	218.5	87	30-168	1	0-34	
Diisopropyl Ether (DIPE)	ND	50.00	44.75	90	43.98	88	57-129	2	0-20	
Ethyl-t-Butyl Ether (ETBE)	ND	50.00	41.99	84	42.37	85	55-127	1	0-20	
Tert-Amyl-Methyl Ether (TAME)	ND	50.00	39.93	80	40.18	80	58-124	1	0-20	
Ethanol	ND	500.0	504.1	101	477.5	96	17-167	5	0-47	

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - Spike/Spike Duplicate

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
Project: INFINEON - El Segundo / 0397848			Page 5 of 6

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
SB-3-0-1	**Sample**	**Solid**	**GC/MS LL**	**03/16/17**	**03/16/17 23:34**	**170316S018**
SB-3-0-1	**Matrix Spike**	**Solid**	**GC/MS LL**	**03/16/17**	**03/17/17 00:02**	**170316S018**
SB-3-0-1	**Matrix Spike Duplicate**	**Solid**	**GC/MS LL**	**03/16/17**	**03/17/17 00:31**	**170316S018**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Benzene	ND	50.00	42.68	85	41.54	83	61-127	3	0-20	
Carbon Tetrachloride	ND	50.00	43.30	87	42.32	85	51-135	2	0-29	
Chlorobenzene	ND	50.00	37.45	75	36.44	73	57-123	3	0-20	
1,2-Dibromoethane	ND	50.00	40.18	80	40.08	80	64-124	0	0-20	
1,2-Dichlorobenzene	ND	50.00	25.91	52	25.70	51	35-131	1	0-25	
1,2-Dichloroethane	ND	50.00	42.67	85	42.04	84	80-120	1	0-20	
1,1-Dichloroethene	ND	50.00	48.97	98	46.59	93	47-143	5	0-25	
Ethylbenzene	ND	50.00	35.73	71	34.73	69	57-129	3	0-22	
Toluene	ND	50.00	40.26	81	39.27	79	63-123	2	0-20	
Trichloroethene	ND	50.00	42.18	84	40.91	82	44-158	3	0-20	
Vinyl Chloride	ND	50.00	49.78	100	47.96	96	49-139	4	0-47	
p/m-Xylene	ND	100.0	67.53	68	65.95	66	70-130	2	0-30	3
o-Xylene	ND	50.00	33.77	68	32.84	66	70-130	3	0-30	3
Methyl-t-Butyl Ether (MTBE)	ND	50.00	41.66	83	40.52	81	57-123	3	0-21	
Tert-Butyl Alcohol (TBA)	ND	250.0	218.8	88	207.8	83	30-168	5	0-34	
Diisopropyl Ether (DIPE)	ND	50.00	46.71	93	45.59	91	57-129	2	0-20	
Ethyl-t-Butyl Ether (ETBE)	ND	50.00	40.62	81	39.42	79	55-127	3	0-20	
Tert-Amyl-Methyl Ether (TAME)	ND	50.00	37.76	76	37.27	75	58-124	1	0-20	
Ethanol	ND	500.0	342.5	69	301.9	60	17-167	13	0-47	

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - Spike/Spike Duplicate

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
Project: INFINEON - El Segundo / 0397848			Page 6 of 6

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
17-03-1223-1	**Sample**	**Solid**	**GC/MS GGG**	**03/16/17**	**03/17/17 16:16**	**170317S005**
17-03-1223-1	**Matrix Spike**	**Solid**	**GC/MS GGG**	**03/16/17**	**03/17/17 16:44**	**170317S005**
17-03-1223-1	**Matrix Spike Duplicate**	**Solid**	**GC/MS GGG**	**03/16/17**	**03/17/17 17:10**	**170317S005**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Benzene	ND	50.00	53.05	106	52.57	105	61-127	1	0-20	
Carbon Tetrachloride	ND	50.00	52.26	105	52.33	105	51-135	0	0-29	
Chlorobenzene	ND	50.00	54.80	110	55.05	110	57-123	0	0-20	
1,2-Dibromoethane	ND	50.00	55.21	110	56.05	112	64-124	2	0-20	
1,2-Dichlorobenzene	ND	50.00	53.81	108	54.22	108	35-131	1	0-25	
1,2-Dichloroethane	ND	50.00	55.38	111	55.14	110	80-120	0	0-20	
1,1-Dichloroethene	ND	50.00	52.92	106	53.22	106	47-143	1	0-25	
Ethylbenzene	ND	50.00	55.00	110	55.11	110	57-129	0	0-22	
Toluene	ND	50.00	54.00	108	53.73	107	63-123	1	0-20	
Trichloroethene	ND	50.00	52.84	106	52.56	105	44-158	1	0-20	
Vinyl Chloride	ND	50.00	51.93	104	52.96	106	49-139	2	0-47	
p/m-Xylene	ND	100.0	110.8	111	111.2	111	70-130	0	0-30	
o-Xylene	ND	50.00	53.71	107	53.50	107	70-130	0	0-30	
Methyl-t-Butyl Ether (MTBE)	ND	50.00	49.12	98	50.19	100	57-123	2	0-21	
Tert-Butyl Alcohol (TBA)	ND	250.0	283.3	113	290.5	116	30-168	2	0-34	
Diisopropyl Ether (DIPE)	ND	50.00	49.48	99	49.57	99	57-129	0	0-20	
Ethyl-t-Butyl Ether (ETBE)	ND	50.00	45.69	91	46.00	92	55-127	1	0-20	
Tert-Amyl-Methyl Ether (TAME)	ND	50.00	45.65	91	45.58	91	58-124	0	0-20	
Ethanol	ND	500.0	590.5	118	588.7	118	17-167	0	0-47	

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)
Project: INFINEON - El Segundo / 0397848			Page 1 of 6

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-15-490-2537	**LCS**	**Solid**	**GC 45**	**03/17/17**	**03/18/17 19:11**	**170317B17**

Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	Qualifiers
TPH as Diesel	400.0	388.6	97	75-123	

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 3050B
		Method:	EPA 6010B
Project: INFINEON - El Segundo / 0397848			Page 2 of 6

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
097-01-002-24479	**LCS**	**Solid**	**ICP 7300**	**03/22/17**	**03/23/17 11:40**	**170322L05**

Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	ME CL	Qualifiers
Antimony	25.00	22.35	89	80-120	73-127	
Arsenic	25.00	22.55	90	80-120	73-127	
Barium	25.00	25.47	102	80-120	73-127	
Beryllium	25.00	22.56	90	80-120	73-127	
Cadmium	25.00	23.81	95	80-120	73-127	
Chromium	25.00	23.86	95	80-120	73-127	
Cobalt	25.00	24.92	100	80-120	73-127	
Copper	25.00	23.90	96	80-120	73-127	
Lead	25.00	24.88	100	80-120	73-127	
Molybdenum	25.00	23.45	94	80-120	73-127	
Nickel	25.00	23.48	94	80-120	73-127	
Selenium	25.00	22.66	91	80-120	73-127	
Silver	12.50	11.55	92	80-120	73-127	
Thallium	25.00	24.31	97	80-120	73-127	
Vanadium	25.00	22.77	91	80-120	73-127	
Zinc	25.00	23.67	95	80-120	73-127	

Total number of LCS compounds: 16
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 7471A Total
		Method:	EPA 7471A
Project: INFINEON - El Segundo / 0397848			Page 3 of 6

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-16-272-2892	**LCS**	**Solid**	**Mercury 08**	**03/22/17**	**03/22/17 19:02**	**170322L04**

Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	Qualifiers
Mercury	0.8350	0.9886	118	85-121	

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
Project: INFINEON - El Segundo / 0397848			Page 4 of 6

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-12-796-12455	**LCS**	**Solid**	**GC/MS LL**	**03/16/17**	**03/16/17 09:50**	**170316L012**

Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	ME CL	Qualifiers
Benzene	50.00	49.96	100	80-120	73-127	
Carbon Tetrachloride	50.00	56.76	114	65-137	53-149	
Chlorobenzene	50.00	52.29	105	80-120	73-127	
1,2-Dibromoethane	50.00	48.25	96	80-120	73-127	
1,2-Dichlorobenzene	50.00	50.66	101	80-120	73-127	
1,2-Dichloroethane	50.00	47.09	94	80-120	73-127	
1,1-Dichloroethene	50.00	55.06	110	68-128	58-138	
Ethylbenzene	50.00	52.74	105	80-120	73-127	
Toluene	50.00	51.18	102	80-120	73-127	
Trichloroethene	50.00	52.54	105	80-120	73-127	
Vinyl Chloride	50.00	55.17	110	67-127	57-137	
p/m-Xylene	100.0	101.8	102	75-125	67-133	
o-Xylene	50.00	49.93	100	75-125	67-133	
Methyl-t-Butyl Ether (MTBE)	50.00	44.93	90	70-124	61-133	
Tert-Butyl Alcohol (TBA)	250.0	231.1	92	73-121	65-129	
Diisopropyl Ether (DIPE)	50.00	45.54	91	69-129	59-139	
Ethyl-t-Butyl Ether (ETBE)	50.00	44.36	89	70-124	61-133	
Tert-Amyl-Methyl Ether (TAME)	50.00	42.12	84	74-122	66-130	
Ethanol	500.0	485.3	97	51-135	37-149	

Total number of LCS compounds: 19
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
Project: INFINEON - El Segundo / 0397848			Page 5 of 6

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-12-796-12463	**LCS**	**Solid**	**GC/MS LL**	**03/16/17**	**03/16/17 21:37**	**170316L066**

Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	ME CL	Qualifiers
Benzene	50.00	49.71	99	80-120	73-127	
Carbon Tetrachloride	50.00	52.74	105	65-137	53-149	
Chlorobenzene	50.00	50.92	102	80-120	73-127	
1,2-Dibromoethane	50.00	50.22	100	80-120	73-127	
1,2-Dichlorobenzene	50.00	50.45	101	80-120	73-127	
1,2-Dichloroethane	50.00	49.07	98	80-120	73-127	
1,1-Dichloroethene	50.00	53.87	108	68-128	58-138	
Ethylbenzene	50.00	50.34	101	80-120	73-127	
Toluene	50.00	50.43	101	80-120	73-127	
Trichloroethene	50.00	51.43	103	80-120	73-127	
Vinyl Chloride	50.00	52.46	105	67-127	57-137	
p/m-Xylene	100.0	97.70	98	75-125	67-133	
o-Xylene	50.00	48.46	97	75-125	67-133	
Methyl-t-Butyl Ether (MTBE)	50.00	47.48	95	70-124	61-133	
Tert-Butyl Alcohol (TBA)	250.0	244.3	98	73-121	65-129	
Diisopropyl Ether (DIPE)	50.00	47.83	96	69-129	59-139	
Ethyl-t-Butyl Ether (ETBE)	50.00	46.09	92	70-124	61-133	
Tert-Amyl-Methyl Ether (TAME)	50.00	43.90	88	74-122	66-130	
Ethanol	500.0	518.3	104	51-135	37-149	

Total number of LCS compounds: 19
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS

ERM-WEST		Date Received:	03/15/17
1920 Main Street, Suite 300		Work Order:	17-03-1154
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
Project: INFINEON - El Segundo / 0397848			Page 6 of 6

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-12-796-12465	**LCS**	**Solid**	**GC/MS GGG**	**03/17/17**	**03/17/17 14:29**	**170317L038**

Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	ME CL	Qualifiers
Benzene	50.00	52.01	104	80-120	73-127	
Carbon Tetrachloride	50.00	51.90	104	65-137	53-149	
Chlorobenzene	50.00	55.26	111	80-120	73-127	
1,2-Dibromoethane	50.00	53.76	108	80-120	73-127	
1,2-Dichlorobenzene	50.00	56.11	112	80-120	73-127	
1,2-Dichloroethane	50.00	53.24	106	80-120	73-127	
1,1-Dichloroethene	50.00	51.93	104	68-128	58-138	
Ethylbenzene	50.00	54.62	109	80-120	73-127	
Toluene	50.00	53.49	107	80-120	73-127	
Trichloroethene	50.00	51.35	103	80-120	73-127	
Vinyl Chloride	50.00	50.75	101	67-127	57-137	
p/m-Xylene	100.0	110.5	111	75-125	67-133	
o-Xylene	50.00	53.95	108	75-125	67-133	
Methyl-t-Butyl Ether (MTBE)	50.00	48.13	96	70-124	61-133	
Tert-Butyl Alcohol (TBA)	250.0	281.1	112	73-121	65-129	
Diisopropyl Ether (DIPE)	50.00	48.89	98	69-129	59-139	
Ethyl-t-Butyl Ether (ETBE)	50.00	45.56	91	70-124	61-133	
Tert-Amyl-Methyl Ether (TAME)	50.00	45.03	90	74-122	66-130	
Ethanol	500.0	550.6	110	51-135	37-149	

Total number of LCS compounds: 19
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

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RPD: Relative Percent Difference. CL: Control Limits

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Sample Analysis Summary Report

Work Order: 17-03-1154 Page 1 of 1

Method	Extraction	Chemist ID	Instrument	Analytical Location
EPA 6010B	EPA 3050B	935	ICP 7300	1
EPA 7471A	EPA 7471A Total	868	Mercury 08	1
EPA 8015B (M)	EPA 3550B	972	GC 45	1
EPA 8260B	EPA 5030C	867	GC/MS LL	2
EPA 8260B	EPA 5030C	1023	GC/MS GGG	2

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Glossary of Terms and Qualifiers

Work Order: 17-03-1154 Page 1 of 1

Qualifiers	Definition
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
CI	See case narrative.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

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Virendra Patel

From: Marlene Dawes <Marlene.Dawes@erm.com>
Sent: Thursday, March 16, 2017 10:29 AM
To: Virendra Patel
Cc: Erick Ovalle
Subject: RE: SRC for INFINEON - El Segundo -- 17-03-1154 <Response requested>

This is correct. The project number is 0397848.

From: Virendra Patel [mailto:VirendraPatel@eurofinsUS.com]
Sent: Thursday, March 16, 2017 10:16 AM
To: Marlene Dawes
Cc: Erick Ovalle
Subject: SRC for INFINEON - El Segundo -- 17-03-1154 <Response requested>
Importance: High

Sample receipt confirmation attached. **Please review and advise of any changes required.**

Please supply the project number for this site.

Please call with any questions or concerns.

Best Regards,

Virendra Patel
Project Manager

Eurofins Calscience, Inc.
7440 Lincoln Way
Garden Grove, CA 92841
USA
P: +1 714 895 5494
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CHAIN-OF-CUSTODY RECORD

Date 3/14/17
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WO NO. / LAB USE ONLY
17-03-1154

LABORATORY CLIENT: ERM
ADDRESS: 1920 MAIN STREET, SUITE 300
CITY: IRVINE STATE: CA ZIP: 92614
TEL: 949-623-4670 E-MAIL: MARLEN.DAWES@ERM.COM

CLIENT PROJECT NAME / NO.: INFINEON - EL SEGUNDO
PROJECT CONTACT: MARLENE DAWES
GLOBAL ID:
LOG CODE:
P.O. NO.:
LAB CONTACT OR QUOTE NO:
SAMPLER(S): (PRINT) MELISSA MEEUWSEN

TURNAROUND TIME (Rush surcharges may apply to any TAT not "STANDARD"):
☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAYS ☒ STANDARD

EDD
☐ COELT EDF ☐ OTHER

SPECIAL INSTRUCTIONS:

REQUESTED ANALYSES
Please check box or fill in blank as needed.

LAB USE ONLY	SAMPLE ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	Unpreserved	Preserved	Field Filtered	TPH(g) ☐ GRO	TPH(d) ☐ DRO	TPH ☐ C6-C36 ☒ C6-C44	TPH ____	BTEX / MTBE ☐ 8260 ☐ ____	VOCs (8260)	Oxygenates (8260)	Prep (5035) ☐ En Core ☐ Terra Core	SVOCs (8270)	Pesticides (8081)	PCBs (8082)	PAHs ☐ 8270 ☐ 8270 SIM	T22 Metals ☒ 6010/747X ☐ 6020/747X	Cr(VI) ☐ 7196 ☐ 7199 ☐ 218.6				
1	SB-20-0-1	3/14/17	1534	Soil	3	3	—				X			X							X				
2	SB-11-0-1		1544	Soil	3						X			X							X				
3	SB-12-0-1		1547	Soil	3						X			X							X				
4	SB-13-0-1		1550	Soil	3						X			X							X				
5	SB-10-1-2		1554	Soil	3						X			X							X				
6	SB-1-0-1		1557	Soil	3						X			X							X				
7	SB-7-0-1		1601	Soil	3						X			X							X				
8	SB-5-0-1		1604	Soil	3						X			X							X				
9	SB-6-0-1		1611	Soil	3						X			X							X				
10	SB-2-1-2		1615	Soil	3						X			X							X				

Relinquished by: (Signature) MELISSA MEEUWSEN ERM	Received by: (Signature/Affiliation) EC2	Date: 3/15/17	Time: 1530
Relinquished by: (Signature)	Received by: (Signature/Affiliation) EC1	Date: 3/15/17	Time: 1830
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:

2016-04-01-Revision

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CHAIN-OF-CUSTODY RECORD

WO NO. / LAB USE ONLY: 17-03-1154

Date 3/14/17
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LABORATORY CLIENT: ERM
ADDRESS: 1920 Main Street, Suite 300
CITY: Irvine STATE: CA ZIP: 92614
TEL: 949-623-4670 E-MAIL: marlene.dawes@erm.com

CLIENT PROJECT NAME / NO.: INFINEON - EL SEGUNDO
PROJECT CONTACT: Marlene Dawes
GLOBAL ID:
LOG CODE:
P.O. NO.:
LAB CONTACT OR QUOTE NO:
SAMPLER(S): (PRINT) Melissa Meerdsen

TURNAROUND TIME (Rush surcharges may apply to any TAT not "STANDARD"):
☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAYS ☑ STANDARD

EDD
☐ COELT EDF ☐ OTHER

SPECIAL INSTRUCTIONS:

REQUESTED ANALYSES
Please check box or fill in blank as needed.

LAB USE ONLY	SAMPLE ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	Unpreserved	Preserved	Field Filtered	TPH(g) ☐ GRO	TPH(d) ☐ DRO	TPH ☐ C6-C36 ☒ C6-C44	TPH ____	BTEX / MTBE ☐ 8260 ☐ ____	VOCs (8260)	Oxygenates (8260)	Prep (5035) ☐ En Core ☐ Terra Core	SVOCs (8270)	Pesticides (8081)	PCBs (8082)	PAHs ☐ 8270 ☐ 8270 SIM	T22 Metals ☒ 6010/747X ☐ 6020/747X	Cr(VI) ☐ 7196 ☐ 7199 ☐ 218.6
11	SB-3-0-1	3/14/17	1618	Soil	3	3					X			X							X	
12	SB-9-0-1	"	1622	Soil	3	3					X			X							X	
13	SB-4-0-1	"	1625	Soil	3	3					X			X							X	
14	SB-19-0-1	"	1628	Soil	3	3					X			X							X	
15	SBB2-1-0-1	3/15/17	905	Soil	3	3					X			X							X	
16	SBB2-4-0-1	"	935	Soil	3	3					X			X							X	
17	SBB2-5-3-4	"	1050	Soil	3	3					X			X							X	

Relinquished by: (Signature) Melissa Meerdsen — Received by: (Signature/Affiliation) ECT — Date: 3/15/17 — Time: 1530
Relinquished by: (Signature) — Received by: (Signature/Affiliation) ECT — Date: 3/15/17 — Time: 1830
Relinquished by: (Signature) — Received by: (Signature/Affiliation) — Date: — Time:

2016-04-01-Revision

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WORK ORDER NUMBER: 17-03- 1154

SAMPLE RECEIPT CHECKLIST

COOLER 1 OF 2

CLIENT: ERM

DATE: 03 / 15 / 2017

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)

Thermometer ID: SC3B (CF: 0.0°C); Temperature (w/o CF): 3.7 °C (w/ CF): 3.7 °C; ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____)

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling

☐ Sample(s) received at ambient temperature; placed on ice for transport by courier

Ambient Temperature: ☐ Air ☐ Filter Checked by: 638

CUSTODY SEAL:

Cooler ☐ Present and Intact ☐ Present but Not Intact ☐ Not Present ☐ N/A Checked by: 678

Sample(s) ☐ Present and Intact ☐ Present but Not Intact ☑ Not Present ☐ N/A Checked by: 1053

SAMPLE CONDITION:	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ Sampling date ☐ Sampling time ☐ Matrix ☐ Number of containers			
☐ No analysis requested ☐ Not relinquished ☐ No relinquished date ☐ No relinquished time			
Sampler's name indicated on COC	☑	☐	☐
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and in good condition	☑	☐	☐
Proper containers for analyses requested	☑	☐	☐
Sufficient volume/mass for analyses requested	☑	☐	☐
Samples received within holding time	☑	☐	☐
Aqueous samples for certain analyses received within 15-minute holding time			
☐ pH ☐ Residual Chlorine ☐ Dissolved Sulfide ☐ Dissolved Oxygen	☐	☐	☑
Proper preservation chemical(s) noted on COC and/or sample container	☐	☐	☑
Unpreserved aqueous sample(s) received for certain analyses			
☐ Volatile Organics ☐ Total Metals ☐ Dissolved Metals			
Container(s) for certain analysis free of headspace	☐	☐	☑
☐ Volatile Organics ☐ Dissolved Gases (RSK-175) ☐ Dissolved Oxygen (SM 4500)			
☐ Carbon Dioxide (SM 4500) ☐ Ferrous Iron (SM 3500) ☐ Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE: **(Trip Blank Lot Number:** _____)

Aqueous: ☐ VOA ☐ VOA**h** ☐ VOA**na$_2$** ☐ 100PJ ☐ 100PJ**na$_2$** ☐ 125AGB ☐ 125AGB**h** ☐ 125AGB**p** ☐ 125PB

☐ 125PB**znna** ☐ 250AGB ☐ 250CGB ☐ 250CGB**s** ☐ 250PB ☐ 250PB**n** ☐ 500AGB ☐ 500AGJ ☐ 500AGJ**s**

☐ 500PB ☐ 1AGB ☐ 1AGB**na$_2$** ☐ 1AGB**s** ☐ 1PB ☐ 1PB**na** ☐ _____ ☐ _____ ☐ _____ ☐ _____

Solid: ☐ 4ozCGJ ☑ 8ozCGJ 3 ☐ 16ozCGJ ☐ Sleeve (_____) ☐ EnCores® (_____) ☐ TerraCores® (_____) ☐ _____

Air: ☐ Tedlar™ ☐ Canister ☐ Sorbent Tube ☐ PUF ☐ _____ **Other Matrix** (_____): ☐ _____ ☐ _____

Container: **A** = Amber, **B** = Bottle, **C** = Clear, **E** = Envelope, **G** = Glass, **J** = Jar, **P** = Plastic, and **Z** = Ziploc/Resealable Bag

Preservative: **b** = buffered, **f** = filtered, **h** = HCl, **n** = HNO_3, **na** = NaOH, **na$_2$** = $Na_2S_2O_3$, **p** = H_3PO_4, **s** = H_2SO_4, **u** = ultra-pure, **x** = Na_2SO_3+$NaHSO_4.H_2O$, **znna** = Zn $(CH_3CO_2)_2$ + NaOH

Labeled/Checked by: 1053

Reviewed by: 459

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WORK ORDER NUMBER: 17-03- 1154

SAMPLE RECEIPT CHECKLIST

COOLER 2 OF 2

CLIENT: ERM

DATE: 03 / 15 / 2017

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)

Thermometer ID: SC3B (CF: 0.0°C); Temperature (w/o CF): 3.9 °C (w/ CF): 3.9 °C; ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____)

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling

☐ Sample(s) received at ambient temperature; placed on ice for transport by courier

Ambient Temperature: ☐ Air ☐ Filter Checked by: 678

CUSTODY SEAL:

Cooler ☐ Present and Intact ☐ Present but Not Intact ☑ Not Present ☐ N/A Checked by: 678

Sample(s) ☐ Present and Intact ☐ Present but Not Intact ☑ Not Present ☐ N/A Checked by: 1053

SAMPLE CONDITION:	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ Sampling date ☐ Sampling time ☐ Matrix ☐ Number of containers			
☐ No analysis requested ☐ Not relinquished ☐ No relinquished date ☐ No relinquished time			
Sampler's name indicated on COC	☑	☐	☐
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and in good condition	☑	☐	☐
Proper containers for analyses requested	☑	☐	☐
Sufficient volume/mass for analyses requested	☑	☐	☐
Samples received within holding time	☑	☐	☐
Aqueous samples for certain analyses received within 15-minute holding time			
☐ pH ☐ Residual Chlorine ☐ Dissolved Sulfide ☐ Dissolved Oxygen	☐	☐	☑
Proper preservation chemical(s) noted on COC and/or sample container	☐	☐	☑
Unpreserved aqueous sample(s) received for certain analyses			
☐ Volatile Organics ☐ Total Metals ☐ Dissolved Metals			
Container(s) for certain analysis free of headspace	☐	☐	☑
☐ Volatile Organics ☐ Dissolved Gases (RSK-175) ☐ Dissolved Oxygen (SM 4500)			
☐ Carbon Dioxide (SM 4500) ☐ Ferrous Iron (SM 3500) ☐ Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE: (Trip Blank Lot Number: _____)

Aqueous: ☐ VOA ☐ VOA**h** ☐ VOA**na$_2$** ☐ 100PJ ☐ 100PJ**na$_2$** ☐ 125AGB ☐ 125AGB**h** ☐ 125AGB**p** ☐ 125PB

☐ 125PB**znna** ☐ 250AGB ☐ 250CGB ☐ 250CGB**s** ☐ 250PB ☐ 250PB**n** ☐ 500AGB ☐ 500AGJ ☐ 500AGJ**s**

☐ 500PB ☐ 1AGB ☐ 1AGB**na$_2$** ☐ 1AGB**s** ☐ 1PB ☐ 1PB**na** ☐ _____ ☐ _____ ☐ _____ ☐ _____

Solid: ☐ 4ozCGJ ☑ 8ozCGJ ☐ 16ozCGJ ☐ Sleeve (_____) ☐ EnCores® (_____) ☐ TerraCores® (_____) ☐ _____

Air: ☐ Tedlar™ ☐ Canister ☐ Sorbent Tube ☐ PUF ☐ _____ **Other Matrix** (_____): ☐ _____ ☐ _____

Container: **A** = Amber, **B** = Bottle, **C** = Clear, **E** = Envelope, **G** = Glass, **J** = Jar, **P** = Plastic, and **Z** = Ziploc/Resealable Bag

Preservative: **b** = buffered, **f** = filtered, **h** = HCl, **n** = HNO_3, **na** = NaOH, **na$_2$** = $Na_2S_2O_3$, **p** = H_3PO_4, Labeled/Checked by: 1053

s = H_2SO_4, **u** = ultra-pure, **x** = Na_2SO_3+$NaHSO_4.H_2O$, **znna** = Zn $(CH_3CO_2)_2$ + NaOH Reviewed by: [illegible]

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Work Order Number: 17-03-1223

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Work Order Narrative

Work Order: 17-03-1223 Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 03/16/17. They were assigned to Work Order 17-03-1223.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

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Sample Summary

Client:	ERM-WEST 1920 Main Street, Suite 300 Irvine, CA 92614-7279	Work Order:	17-03-1223
		Project Name:	INFINEON - El Segundo / 0397848-002
		PO Number:	
		Date/Time Received:	03/16/17 13:10
		Number of Containers:	5
Attn:	Marlene Dawes		

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
SBB2-9-3-4	17-03-1223-1	03/15/17 11:10	1	Solid
SBB2-10-2-3	17-03-1223-2	03/15/17 11:25	1	Solid
SBB2-11-0-2	17-03-1223-3	03/15/17 12:03	1	Solid
SBB2-12-7-8	17-03-1223-4	03/15/17 12:25	1	Solid
SBB2-13-1-2	17-03-1223-5	03/15/17 12:43	1	Solid

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Detections Summary

Client:	ERM-WEST	Work Order:	17-03-1223
	1920 Main Street, Suite 300	Project Name:	INFINEON - El Segundo / 0397848-002
	Irvine, CA 92614-7279	Received:	03/16/17
Attn:	Marlene Dawes		

Client SampleID / Analyte	Result	Qualifiers	RL	Units	Method	Extraction
SBB2-9-3-4 (17-03-1223-1)						
Barium	71.7		0.508	mg/kg	EPA 6010B	EPA 3050B
Beryllium	0.278		0.254	mg/kg	EPA 6010B	EPA 3050B
Chromium	15.3		0.254	mg/kg	EPA 6010B	EPA 3050B
Cobalt	5.42		0.254	mg/kg	EPA 6010B	EPA 3050B
Copper	6.17		0.508	mg/kg	EPA 6010B	EPA 3050B
Lead	3.16		0.508	mg/kg	EPA 6010B	EPA 3050B
Nickel	8.39		0.254	mg/kg	EPA 6010B	EPA 3050B
Vanadium	25.6		0.254	mg/kg	EPA 6010B	EPA 3050B
Zinc	19.5		1.02	mg/kg	EPA 6010B	EPA 3050B
SBB2-10-2-3 (17-03-1223-2)						
Barium	38.6		0.493	mg/kg	EPA 6010B	EPA 3050B
Chromium	13.2		0.246	mg/kg	EPA 6010B	EPA 3050B
Cobalt	3.77		0.246	mg/kg	EPA 6010B	EPA 3050B
Copper	3.86		0.493	mg/kg	EPA 6010B	EPA 3050B
Lead	2.72		0.493	mg/kg	EPA 6010B	EPA 3050B
Nickel	5.51		0.246	mg/kg	EPA 6010B	EPA 3050B
Vanadium	21.9		0.246	mg/kg	EPA 6010B	EPA 3050B
Zinc	13.8		0.985	mg/kg	EPA 6010B	EPA 3050B
SBB2-11-0-2 (17-03-1223-3)						
Arsenic	1.84		0.765	mg/kg	EPA 6010B	EPA 3050B
Barium	27.1		0.510	mg/kg	EPA 6010B	EPA 3050B
Chromium	25.6		0.255	mg/kg	EPA 6010B	EPA 3050B
Cobalt	4.80		0.255	mg/kg	EPA 6010B	EPA 3050B
Copper	4.16		0.510	mg/kg	EPA 6010B	EPA 3050B
Lead	2.67		0.510	mg/kg	EPA 6010B	EPA 3050B
Nickel	9.18		0.255	mg/kg	EPA 6010B	EPA 3050B
Vanadium	25.9		0.255	mg/kg	EPA 6010B	EPA 3050B
Zinc	13.2		1.02	mg/kg	EPA 6010B	EPA 3050B
C6-C44 Total	12		5.0	mg/kg	EPA 8015B (M)	EPA 3550B

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* MDL is shown

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Detections Summary

Client:	ERM-WEST	Work Order:	17-03-1223
	1920 Main Street, Suite 300	Project Name:	INFINEON - El Segundo / 0397848-002
	Irvine, CA 92614-7279	Received:	03/16/17
Attn:	Marlene Dawes		Page 2 of 2

Client SampleID

Analyte	Result	Qualifiers	RL	Units	Method	Extraction
SBB2-12-7-8 (17-03-1223-4)						
Arsenic	2.07		0.765	mg/kg	EPA 6010B	EPA 3050B
Barium	33.5		0.510	mg/kg	EPA 6010B	EPA 3050B
Beryllium	0.264		0.255	mg/kg	EPA 6010B	EPA 3050B
Chromium	27.6		0.255	mg/kg	EPA 6010B	EPA 3050B
Cobalt	5.40		0.255	mg/kg	EPA 6010B	EPA 3050B
Copper	4.51		0.510	mg/kg	EPA 6010B	EPA 3050B
Lead	2.79		0.510	mg/kg	EPA 6010B	EPA 3050B
Nickel	9.22		0.255	mg/kg	EPA 6010B	EPA 3050B
Vanadium	25.6		0.255	mg/kg	EPA 6010B	EPA 3050B
Zinc	15.3		1.02	mg/kg	EPA 6010B	EPA 3050B
SBB2-13-1-2 (17-03-1223-5)						
Arsenic	1.06		0.761	mg/kg	EPA 6010B	EPA 3050B
Barium	46.2		0.508	mg/kg	EPA 6010B	EPA 3050B
Beryllium	0.272		0.254	mg/kg	EPA 6010B	EPA 3050B
Chromium	14.5		0.254	mg/kg	EPA 6010B	EPA 3050B
Cobalt	5.64		0.254	mg/kg	EPA 6010B	EPA 3050B
Copper	4.77		0.508	mg/kg	EPA 6010B	EPA 3050B
Lead	2.95		0.508	mg/kg	EPA 6010B	EPA 3050B
Nickel	8.01		0.254	mg/kg	EPA 6010B	EPA 3050B
Vanadium	24.3		0.254	mg/kg	EPA 6010B	EPA 3050B
Zinc	17.3		1.02	mg/kg	EPA 6010B	EPA 3050B
Mercury	0.441		0.0820	mg/kg	EPA 7471A	EPA 7471A Total

Subcontracted analyses, if any, are not included in this summary.

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* MDL is shown

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Analytical Report

ERM-WEST		Date Received:	03/16/17
1920 Main Street, Suite 300		Work Order:	17-03-1223
Irvine, CA 92614-7279		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)
		Units:	mg/kg
Project: INFINEON - El Segundo / 0397848-002			Page 1 of 6

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SBB2-9-3-4	**17-03-1223-1-A**	**03/15/17 11:10**	**Solid**	**GC 48**	**03/20/17**	**03/20/17 18:13**	**170320B05**

Comment(s): - The total concentration includes individual carbon range concentrations (estimated), if any, below the RL reported as ND.

Parameter	Result	RL	DF	Qualifiers
C6	ND	5.1	1.00	
C7	ND	5.1	1.00	
C8	ND	5.1	1.00	
C9-C10	ND	5.1	1.00	
C11-C12	ND	5.1	1.00	
C13-C14	ND	5.1	1.00	
C15-C16	ND	5.1	1.00	
C17-C18	ND	5.1	1.00	
C19-C20	ND	5.1	1.00	
C21-C22	ND	5.1	1.00	
C23-C24	ND	5.1	1.00	
C25-C28	ND	5.1	1.00	
C29-C32	ND	5.1	1.00	
C33-C36	ND	5.1	1.00	
C37-C40	ND	5.1	1.00	
C41-C44	ND	5.1	1.00	
C6-C44 Total	ND	5.1	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	94	61-145	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/16/17
Work Order: 17-03-1223
Preparation: EPA 3550B
Method: EPA 8015B (M)
Units: mg/kg

Project: INFINEON - El Segundo / 0397848-002

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SBB2-10-2-3	**17-03-1223-2-A**	**03/15/17 11:25**	**Solid**	**GC 48**	**03/20/17**	**03/20/17 18:34**	**170320B05**

Comment(s): - The total concentration includes individual carbon range concentrations (estimated), if any, below the RL reported as ND.

Parameter	Result	RL	DF	Qualifiers
C6	ND	4.9	1.00	
C7	ND	4.9	1.00	
C8	ND	4.9	1.00	
C9-C10	ND	4.9	1.00	
C11-C12	ND	4.9	1.00	
C13-C14	ND	4.9	1.00	
C15-C16	ND	4.9	1.00	
C17-C18	ND	4.9	1.00	
C19-C20	ND	4.9	1.00	
C21-C22	ND	4.9	1.00	
C23-C24	ND	4.9	1.00	
C25-C28	ND	4.9	1.00	
C29-C32	ND	4.9	1.00	
C33-C36	ND	4.9	1.00	
C37-C40	ND	4.9	1.00	
C41-C44	ND	4.9	1.00	
C6-C44 Total	ND	4.9	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	113	61-145	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/16/17
1920 Main Street, Suite 300		Work Order:	17-03-1223
Irvine, CA 92614-7279		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)
		Units:	mg/kg
Project: INFINEON - El Segundo / 0397848-002			Page 3 of 6

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SBB2-11-0-2	**17-03-1223-3-A**	**03/15/17 12:03**	**Solid**	**GC 48**	**03/20/17**	**03/20/17 18:54**	**170320B05**

Comment(s): - The total concentration includes individual carbon range concentrations (estimated), if any, below the RL reported as ND.

Parameter	Result	RL	DF	Qualifiers
C6	ND	5.0	1.00	
C7	ND	5.0	1.00	
C8	ND	5.0	1.00	
C9-C10	ND	5.0	1.00	
C11-C12	ND	5.0	1.00	
C13-C14	ND	5.0	1.00	
C15-C16	ND	5.0	1.00	
C17-C18	ND	5.0	1.00	
C19-C20	ND	5.0	1.00	
C21-C22	ND	5.0	1.00	
C23-C24	ND	5.0	1.00	
C25-C28	ND	5.0	1.00	
C29-C32	ND	5.0	1.00	
C33-C36	ND	5.0	1.00	
C37-C40	ND	5.0	1.00	
C41-C44	ND	5.0	1.00	
C6-C44 Total	12	5.0	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	110	61-145	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/16/17
1920 Main Street, Suite 300		Work Order:	17-03-1223
Irvine, CA 92614-7279		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)
		Units:	mg/kg
Project: INFINEON - El Segundo / 0397848-002			Page 4 of 6

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SBB2-12-7-8	**17-03-1223-4-A**	**03/15/17 12:25**	**Solid**	**GC 48**	**03/20/17**	**03/20/17 19:15**	**170320B05**

Comment(s): - The total concentration includes individual carbon range concentrations (estimated), if any, below the RL reported as ND.

Parameter	Result	RL	DF	Qualifiers
C6	ND	5.1	1.00	
C7	ND	5.1	1.00	
C8	ND	5.1	1.00	
C9-C10	ND	5.1	1.00	
C11-C12	ND	5.1	1.00	
C13-C14	ND	5.1	1.00	
C15-C16	ND	5.1	1.00	
C17-C18	ND	5.1	1.00	
C19-C20	ND	5.1	1.00	
C21-C22	ND	5.1	1.00	
C23-C24	ND	5.1	1.00	
C25-C28	ND	5.1	1.00	
C29-C32	ND	5.1	1.00	
C33-C36	ND	5.1	1.00	
C37-C40	ND	5.1	1.00	
C41-C44	ND	5.1	1.00	
C6-C44 Total	ND	5.1	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	109	61-145	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/16/17
1920 Main Street, Suite 300		Work Order:	17-03-1223
Irvine, CA 92614-7279		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)
		Units:	mg/kg
Project: INFINEON - El Segundo / 0397848-002			Page 5 of 6

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SBB2-13-1-2	**17-03-1223-5-A**	**03/15/17 12:43**	**Solid**	**GC 48**	**03/20/17**	**03/20/17 19:35**	**170320B05**

Comment(s): - The total concentration includes individual carbon range concentrations (estimated), if any, below the RL reported as ND.

Parameter	Result	RL	DF	Qualifiers
C6	ND	5.1	1.00	
C7	ND	5.1	1.00	
C8	ND	5.1	1.00	
C9-C10	ND	5.1	1.00	
C11-C12	ND	5.1	1.00	
C13-C14	ND	5.1	1.00	
C15-C16	ND	5.1	1.00	
C17-C18	ND	5.1	1.00	
C19-C20	ND	5.1	1.00	
C21-C22	ND	5.1	1.00	
C23-C24	ND	5.1	1.00	
C25-C28	ND	5.1	1.00	
C29-C32	ND	5.1	1.00	
C33-C36	ND	5.1	1.00	
C37-C40	ND	5.1	1.00	
C41-C44	ND	5.1	1.00	
C6-C44 Total	ND	5.1	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	110	61-145	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/16/17
Work Order: 17-03-1223
Preparation: EPA 3550B
Method: EPA 8015B (M)
Units: mg/kg

Project: INFINEON - El Segundo / 0397848-002

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-15-490-2539**	**N/A**	**Solid**	**GC 48**	**03/20/17**	**03/20/17 16:31**	**170320B05**

Parameter	Result	RL	DF	Qualifiers
C6	ND	5.0	1.00	
C7	ND	5.0	1.00	
C8	ND	5.0	1.00	
C9-C10	ND	5.0	1.00	
C11-C12	ND	5.0	1.00	
C13-C14	ND	5.0	1.00	
C15-C16	ND	5.0	1.00	
C17-C18	ND	5.0	1.00	
C19-C20	ND	5.0	1.00	
C21-C22	ND	5.0	1.00	
C23-C24	ND	5.0	1.00	
C25-C28	ND	5.0	1.00	
C29-C32	ND	5.0	1.00	
C33-C36	ND	5.0	1.00	
C37-C40	ND	5.0	1.00	
C41-C44	ND	5.0	1.00	
C6-C44 Total	ND	5.0	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	110	61-145	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/16/17
Work Order: 17-03-1223
Preparation: EPA 3050B
Method: EPA 6010B
Units: mg/kg

Project: INFINEON - El Segundo / 0397848-002

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SBB2-9-3-4	**17-03-1223-1-A**	**03/15/17 11:10**	**Solid**	**ICP 7300**	**03/17/17**	**03/20/17 13:38**	**170317L02**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.761	1.02	
Arsenic	ND	0.761	1.02	
Barium	71.7	0.508	1.02	
Beryllium	0.278	0.254	1.02	
Cadmium	ND	0.508	1.02	
Chromium	15.3	0.254	1.02	
Cobalt	5.42	0.254	1.02	
Copper	6.17	0.508	1.02	
Lead	3.16	0.508	1.02	
Molybdenum	ND	0.254	1.02	
Nickel	8.39	0.254	1.02	
Selenium	ND	0.761	1.02	
Silver	ND	0.254	1.02	
Thallium	ND	0.761	1.02	
Vanadium	25.6	0.254	1.02	
Zinc	19.5	1.02	1.02	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/16/17
Work Order: 17-03-1223
Preparation: EPA 3050B
Method: EPA 6010B
Units: mg/kg

Project: INFINEON - El Segundo / 0397848-002

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SBB2-10-2-3	**17-03-1223-2-A**	**03/15/17 11:25**	**Solid**	**ICP 7300**	**03/17/17**	**03/20/17 13:42**	**170317L02**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.739	0.985	
Arsenic	ND	0.739	0.985	
Barium	38.6	0.493	0.985	
Beryllium	ND	0.246	0.985	
Cadmium	ND	0.493	0.985	
Chromium	13.2	0.246	0.985	
Cobalt	3.77	0.246	0.985	
Copper	3.86	0.493	0.985	
Lead	2.72	0.493	0.985	
Molybdenum	ND	0.246	0.985	
Nickel	5.51	0.246	0.985	
Selenium	ND	0.739	0.985	
Silver	ND	0.246	0.985	
Thallium	ND	0.739	0.985	
Vanadium	21.9	0.246	0.985	
Zinc	13.8	0.985	0.985	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/16/17
Work Order: 17-03-1223
Preparation: EPA 3050B
Method: EPA 6010B
Units: mg/kg

Project: INFINEON - El Segundo / 0397848-002

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SBB2-11-0-2	**17-03-1223-3-A**	**03/15/17 12:03**	**Solid**	**ICP 7300**	**03/17/17**	**03/20/17 13:43**	**170317L02**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.765	1.02	
Arsenic	1.84	0.765	1.02	
Barium	27.1	0.510	1.02	
Beryllium	ND	0.255	1.02	
Cadmium	ND	0.510	1.02	
Chromium	25.6	0.255	1.02	
Cobalt	4.80	0.255	1.02	
Copper	4.16	0.510	1.02	
Lead	2.67	0.510	1.02	
Molybdenum	ND	0.255	1.02	
Nickel	9.18	0.255	1.02	
Selenium	ND	0.765	1.02	
Silver	ND	0.255	1.02	
Thallium	ND	0.765	1.02	
Vanadium	25.9	0.255	1.02	
Zinc	13.2	1.02	1.02	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/16/17
Work Order: 17-03-1223
Preparation: EPA 3050B
Method: EPA 6010B
Units: mg/kg

Project: INFINEON - El Segundo / 0397848-002

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SBB2-12-7-8	**17-03-1223-4-A**	**03/15/17 12:25**	**Solid**	**ICP 7300**	**03/17/17**	**03/20/17 13:44**	**170317L02**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.765	1.02	
Arsenic	2.07	0.765	1.02	
Barium	33.5	0.510	1.02	
Beryllium	0.264	0.255	1.02	
Cadmium	ND	0.510	1.02	
Chromium	27.6	0.255	1.02	
Cobalt	5.40	0.255	1.02	
Copper	4.51	0.510	1.02	
Lead	2.79	0.510	1.02	
Molybdenum	ND	0.255	1.02	
Nickel	9.22	0.255	1.02	
Selenium	ND	0.765	1.02	
Silver	ND	0.255	1.02	
Thallium	ND	0.765	1.02	
Vanadium	25.6	0.255	1.02	
Zinc	15.3	1.02	1.02	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/16/17
Work Order: 17-03-1223
Preparation: EPA 3050B
Method: EPA 6010B
Units: mg/kg

Project: INFINEON - El Segundo / 0397848-002

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SBB2-13-1-2	**17-03-1223-5-A**	**03/15/17 12:43**	**Solid**	**ICP 7300**	**03/17/17**	**03/20/17 13:45**	**170317L02**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.761	1.02	
Arsenic	1.06	0.761	1.02	
Barium	46.2	0.508	1.02	
Beryllium	0.272	0.254	1.02	
Cadmium	ND	0.508	1.02	
Chromium	14.5	0.254	1.02	
Cobalt	5.64	0.254	1.02	
Copper	4.77	0.508	1.02	
Lead	2.95	0.508	1.02	
Molybdenum	ND	0.254	1.02	
Nickel	8.01	0.254	1.02	
Selenium	ND	0.761	1.02	
Silver	ND	0.254	1.02	
Thallium	ND	0.761	1.02	
Vanadium	24.3	0.254	1.02	
Zinc	17.3	1.02	1.02	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/16/17
Work Order: 17-03-1223
Preparation: EPA 3050B
Method: EPA 6010B
Units: mg/kg

Project: INFINEON - El Segundo / 0397848-002

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**097-01-002-24453**	**N/A**	**Solid**	**ICP 7300**	**03/17/17**	**03/20/17 12:47**	**170317L02**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.725	0.966	
Arsenic	ND	0.725	0.966	
Barium	ND	0.483	0.966	
Beryllium	ND	0.242	0.966	
Cadmium	ND	0.483	0.966	
Chromium	ND	0.242	0.966	
Cobalt	ND	0.242	0.966	
Copper	ND	0.483	0.966	
Lead	ND	0.483	0.966	
Molybdenum	ND	0.242	0.966	
Nickel	ND	0.242	0.966	
Selenium	ND	0.725	0.966	
Silver	ND	0.242	0.966	
Thallium	ND	0.725	0.966	
Vanadium	ND	0.242	0.966	
Zinc	ND	0.966	0.966	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/16/17
Work Order: 17-03-1223
Preparation: EPA 7471A Total
Method: EPA 7471A
Units: mg/kg

Project: INFINEON - El Segundo / 0397848-002

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SBB2-9-3-4	**17-03-1223-1-A**	**03/15/17 11:10**	**Solid**	**Mercury 08**	**03/17/17**	**03/17/17 15:56**	**170317L02**

Parameter	Result	RL	DF	Qualifiers
Mercury	ND	0.0833	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SBB2-10-2-3	**17-03-1223-2-A**	**03/15/17 11:25**	**Solid**	**Mercury 08**	**03/17/17**	**03/17/17 16:04**	**170317L02**

Parameter	Result	RL	DF	Qualifiers
Mercury	ND	0.0794	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SBB2-11-0-2	**17-03-1223-3-A**	**03/15/17 12:03**	**Solid**	**Mercury 08**	**03/17/17**	**03/17/17 16:06**	**170317L02**

Parameter	Result	RL	DF	Qualifiers
Mercury	ND	0.0877	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SBB2-12-7-8	**17-03-1223-4-A**	**03/15/17 12:25**	**Solid**	**Mercury 08**	**03/17/17**	**03/17/17 16:13**	**170317L02**

Parameter	Result	RL	DF	Qualifiers
Mercury	ND	0.0833	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SBB2-13-1-2	**17-03-1223-5-A**	**03/15/17 12:43**	**Solid**	**Mercury 08**	**03/17/17**	**03/17/17 16:15**	**170317L02**

Parameter	Result	RL	DF	Qualifiers
Mercury	0.441	0.0820	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-16-272-2879**	**N/A**	**Solid**	**Mercury 08**	**03/17/17**	**03/17/17 15:51**	**170317L02**

Parameter	Result	RL	DF	Qualifiers
Mercury	ND	0.0833	1.00	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/16/17
Work Order: 17-03-1223
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/kg

Project: INFINEON - El Segundo / 0397848-002

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SBB2-9-3-4	**17-03-1223-1-B**	**03/15/17 11:10**	**Solid**	**GC/MS GGG**	**03/16/17**	**03/17/17 16:16**	**170317L038**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	130	1.00	
Benzene	ND	5.1	1.00	
Bromobenzene	ND	5.1	1.00	
Bromochloromethane	ND	5.1	1.00	
Bromodichloromethane	ND	5.1	1.00	
Bromoform	ND	5.1	1.00	
Bromomethane	ND	26	1.00	
2-Butanone	ND	51	1.00	
n-Butylbenzene	ND	5.1	1.00	
sec-Butylbenzene	ND	5.1	1.00	
tert-Butylbenzene	ND	5.1	1.00	
Carbon Disulfide	ND	51	1.00	
Carbon Tetrachloride	ND	5.1	1.00	
Chlorobenzene	ND	5.1	1.00	
Chloroethane	ND	5.1	1.00	
Chloroform	ND	5.1	1.00	
Chloromethane	ND	26	1.00	
2-Chlorotoluene	ND	5.1	1.00	
4-Chlorotoluene	ND	5.1	1.00	
Dibromochloromethane	ND	5.1	1.00	
1,2-Dibromo-3-Chloropropane	ND	10	1.00	
1,2-Dibromoethane	ND	5.1	1.00	
Dibromomethane	ND	5.1	1.00	
1,2-Dichlorobenzene	ND	5.1	1.00	
1,3-Dichlorobenzene	ND	5.1	1.00	
1,4-Dichlorobenzene	ND	5.1	1.00	
Dichlorodifluoromethane	ND	5.1	1.00	
1,1-Dichloroethane	ND	5.1	1.00	
1,2-Dichloroethane	ND	5.1	1.00	
1,1-Dichloroethene	ND	5.1	1.00	
c-1,2-Dichloroethene	ND	5.1	1.00	
t-1,2-Dichloroethene	ND	5.1	1.00	
1,2-Dichloropropane	ND	5.1	1.00	
1,3-Dichloropropane	ND	5.1	1.00	
2,2-Dichloropropane	ND	5.1	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/16/17
1920 Main Street, Suite 300	Work Order:	17-03-1223
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/kg
Project: INFINEON - El Segundo / 0397848-002		Page 2 of 18

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	5.1	1.00	
c-1,3-Dichloropropene	ND	5.1	1.00	
t-1,3-Dichloropropene	ND	5.1	1.00	
Ethylbenzene	ND	5.1	1.00	
2-Hexanone	ND	51	1.00	
Isopropylbenzene	ND	5.1	1.00	
p-Isopropyltoluene	ND	5.1	1.00	
Methylene Chloride	ND	51	1.00	
4-Methyl-2-Pentanone	ND	51	1.00	
Naphthalene	ND	51	1.00	
n-Propylbenzene	ND	5.1	1.00	
Styrene	ND	5.1	1.00	
1,1,1,2-Tetrachloroethane	ND	5.1	1.00	
1,1,2,2-Tetrachloroethane	ND	5.1	1.00	
Tetrachloroethene	ND	5.1	1.00	
Toluene	ND	5.1	1.00	
1,2,3-Trichlorobenzene	ND	10	1.00	
1,2,4-Trichlorobenzene	ND	5.1	1.00	
1,1,1-Trichloroethane	ND	5.1	1.00	
1,1,2-Trichloroethane	ND	5.1	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	51	1.00	
Trichloroethene	ND	5.1	1.00	
1,2,3-Trichloropropane	ND	5.1	1.00	
1,2,4-Trimethylbenzene	ND	5.1	1.00	
Trichlorofluoromethane	ND	51	1.00	
1,3,5-Trimethylbenzene	ND	5.1	1.00	
Vinyl Acetate	ND	51	1.00	
Vinyl Chloride	ND	5.1	1.00	
p/m-Xylene	ND	5.1	1.00	
o-Xylene	ND	5.1	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	5.1	1.00	
Tert-Butyl Alcohol (TBA)	ND	51	1.00	
Diisopropyl Ether (DIPE)	ND	10	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	10	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	10	1.00	
Ethanol	ND	260	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	89	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/16/17
1920 Main Street, Suite 300	Work Order:	17-03-1223
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/kg
Project: INFINEON - El Segundo / 0397848-002		Page 3 of 18

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	90	79-133	
1,2-Dichloroethane-d4	107	71-155	
Toluene-d8	98	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/16/17
Work Order: 17-03-1223
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/kg

Project: INFINEON - El Segundo / 0397848-002

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SBB2-10-2-3	**17-03-1223-2-B**	**03/15/17 11:25**	**Solid**	**GC/MS GGG**	**03/16/17**	**03/17/17 18:31**	**170317L038**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	120	1.00	
Benzene	ND	5.0	1.00	
Bromobenzene	ND	5.0	1.00	
Bromochloromethane	ND	5.0	1.00	
Bromodichloromethane	ND	5.0	1.00	
Bromoform	ND	5.0	1.00	
Bromomethane	ND	25	1.00	
2-Butanone	ND	50	1.00	
n-Butylbenzene	ND	5.0	1.00	
sec-Butylbenzene	ND	5.0	1.00	
tert-Butylbenzene	ND	5.0	1.00	
Carbon Disulfide	ND	50	1.00	
Carbon Tetrachloride	ND	5.0	1.00	
Chlorobenzene	ND	5.0	1.00	
Chloroethane	ND	5.0	1.00	
Chloroform	ND	5.0	1.00	
Chloromethane	ND	25	1.00	
2-Chlorotoluene	ND	5.0	1.00	
4-Chlorotoluene	ND	5.0	1.00	
Dibromochloromethane	ND	5.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	10	1.00	
1,2-Dibromoethane	ND	5.0	1.00	
Dibromomethane	ND	5.0	1.00	
1,2-Dichlorobenzene	ND	5.0	1.00	
1,3-Dichlorobenzene	ND	5.0	1.00	
1,4-Dichlorobenzene	ND	5.0	1.00	
Dichlorodifluoromethane	ND	5.0	1.00	
1,1-Dichloroethane	ND	5.0	1.00	
1,2-Dichloroethane	ND	5.0	1.00	
1,1-Dichloroethene	ND	5.0	1.00	
c-1,2-Dichloroethene	ND	5.0	1.00	
t-1,2-Dichloroethene	ND	5.0	1.00	
1,2-Dichloropropane	ND	5.0	1.00	
1,3-Dichloropropane	ND	5.0	1.00	
2,2-Dichloropropane	ND	5.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/16/17
1920 Main Street, Suite 300	Work Order:	17-03-1223
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/kg
Project: INFINEON - El Segundo / 0397848-002		Page 5 of 18

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	5.0	1.00	
c-1,3-Dichloropropene	ND	5.0	1.00	
t-1,3-Dichloropropene	ND	5.0	1.00	
Ethylbenzene	ND	5.0	1.00	
2-Hexanone	ND	50	1.00	
Isopropylbenzene	ND	5.0	1.00	
p-Isopropyltoluene	ND	5.0	1.00	
Methylene Chloride	ND	50	1.00	
4-Methyl-2-Pentanone	ND	50	1.00	
Naphthalene	ND	50	1.00	
n-Propylbenzene	ND	5.0	1.00	
Styrene	ND	5.0	1.00	
1,1,1,2-Tetrachloroethane	ND	5.0	1.00	
1,1,2,2-Tetrachloroethane	ND	5.0	1.00	
Tetrachloroethene	ND	5.0	1.00	
Toluene	ND	5.0	1.00	
1,2,3-Trichlorobenzene	ND	10	1.00	
1,2,4-Trichlorobenzene	ND	5.0	1.00	
1,1,1-Trichloroethane	ND	5.0	1.00	
1,1,2-Trichloroethane	ND	5.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	50	1.00	
Trichloroethene	ND	5.0	1.00	
1,2,3-Trichloropropane	ND	5.0	1.00	
1,2,4-Trimethylbenzene	ND	5.0	1.00	
Trichlorofluoromethane	ND	50	1.00	
1,3,5-Trimethylbenzene	ND	5.0	1.00	
Vinyl Acetate	ND	50	1.00	
Vinyl Chloride	ND	5.0	1.00	
p/m-Xylene	ND	5.0	1.00	
o-Xylene	ND	5.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	5.0	1.00	
Tert-Butyl Alcohol (TBA)	ND	50	1.00	
Diisopropyl Ether (DIPE)	ND	10	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	10	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	10	1.00	
Ethanol	ND	250	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	88	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/16/17
1920 Main Street, Suite 300	Work Order:	17-03-1223
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/kg
Project: INFINEON - El Segundo / 0397848-002		Page 6 of 18

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	92	79-133	
1,2-Dichloroethane-d4	108	71-155	
Toluene-d8	97	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/16/17
Work Order: 17-03-1223
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/kg

Project: INFINEON - El Segundo / 0397848-002

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SBB2-11-0-2	**17-03-1223-3-B**	**03/15/17 12:03**	**Solid**	**GC/MS GGG**	**03/16/17**	**03/17/17 18:58**	**170317L038**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	130	1.00	
Benzene	ND	5.2	1.00	
Bromobenzene	ND	5.2	1.00	
Bromochloromethane	ND	5.2	1.00	
Bromodichloromethane	ND	5.2	1.00	
Bromoform	ND	5.2	1.00	
Bromomethane	ND	26	1.00	
2-Butanone	ND	52	1.00	
n-Butylbenzene	ND	5.2	1.00	
sec-Butylbenzene	ND	5.2	1.00	
tert-Butylbenzene	ND	5.2	1.00	
Carbon Disulfide	ND	52	1.00	
Carbon Tetrachloride	ND	5.2	1.00	
Chlorobenzene	ND	5.2	1.00	
Chloroethane	ND	5.2	1.00	
Chloroform	ND	5.2	1.00	
Chloromethane	ND	26	1.00	
2-Chlorotoluene	ND	5.2	1.00	
4-Chlorotoluene	ND	5.2	1.00	
Dibromochloromethane	ND	5.2	1.00	
1,2-Dibromo-3-Chloropropane	ND	10	1.00	
1,2-Dibromoethane	ND	5.2	1.00	
Dibromomethane	ND	5.2	1.00	
1,2-Dichlorobenzene	ND	5.2	1.00	
1,3-Dichlorobenzene	ND	5.2	1.00	
1,4-Dichlorobenzene	ND	5.2	1.00	
Dichlorodifluoromethane	ND	5.2	1.00	
1,1-Dichloroethane	ND	5.2	1.00	
1,2-Dichloroethane	ND	5.2	1.00	
1,1-Dichloroethene	ND	5.2	1.00	
c-1,2-Dichloroethene	ND	5.2	1.00	
t-1,2-Dichloroethene	ND	5.2	1.00	
1,2-Dichloropropane	ND	5.2	1.00	
1,3-Dichloropropane	ND	5.2	1.00	
2,2-Dichloropropane	ND	5.2	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/16/17
1920 Main Street, Suite 300	Work Order:	17-03-1223
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/kg
Project: INFINEON - El Segundo / 0397848-002		Page 8 of 18

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	5.2	1.00	
c-1,3-Dichloropropene	ND	5.2	1.00	
t-1,3-Dichloropropene	ND	5.2	1.00	
Ethylbenzene	ND	5.2	1.00	
2-Hexanone	ND	52	1.00	
Isopropylbenzene	ND	5.2	1.00	
p-Isopropyltoluene	ND	5.2	1.00	
Methylene Chloride	ND	52	1.00	
4-Methyl-2-Pentanone	ND	52	1.00	
Naphthalene	ND	52	1.00	
n-Propylbenzene	ND	5.2	1.00	
Styrene	ND	5.2	1.00	
1,1,1,2-Tetrachloroethane	ND	5.2	1.00	
1,1,2,2-Tetrachloroethane	ND	5.2	1.00	
Tetrachloroethene	ND	5.2	1.00	
Toluene	ND	5.2	1.00	
1,2,3-Trichlorobenzene	ND	10	1.00	
1,2,4-Trichlorobenzene	ND	5.2	1.00	
1,1,1-Trichloroethane	ND	5.2	1.00	
1,1,2-Trichloroethane	ND	5.2	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	52	1.00	
Trichloroethene	ND	5.2	1.00	
1,2,3-Trichloropropane	ND	5.2	1.00	
1,2,4-Trimethylbenzene	ND	5.2	1.00	
Trichlorofluoromethane	ND	52	1.00	
1,3,5-Trimethylbenzene	ND	5.2	1.00	
Vinyl Acetate	ND	52	1.00	
Vinyl Chloride	ND	5.2	1.00	
p/m-Xylene	ND	5.2	1.00	
o-Xylene	ND	5.2	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	5.2	1.00	
Tert-Butyl Alcohol (TBA)	ND	52	1.00	
Diisopropyl Ether (DIPE)	ND	10	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	10	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	10	1.00	
Ethanol	ND	260	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	88	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/16/17
1920 Main Street, Suite 300	Work Order:	17-03-1223
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/kg
Project: INFINEON - El Segundo / 0397848-002		Page 9 of 18

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	91	79-133	
1,2-Dichloroethane-d4	109	71-155	
Toluene-d8	97	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/16/17
Work Order: 17-03-1223
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/kg

Project: INFINEON - El Segundo / 0397848-002

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SBB2-12-7-8	**17-03-1223-4-B**	**03/15/17 12:25**	**Solid**	**GC/MS GGG**	**03/16/17**	**03/17/17 19:25**	**170317L038**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	120	1.00	
Benzene	ND	4.8	1.00	
Bromobenzene	ND	4.8	1.00	
Bromochloromethane	ND	4.8	1.00	
Bromodichloromethane	ND	4.8	1.00	
Bromoform	ND	4.8	1.00	
Bromomethane	ND	24	1.00	
2-Butanone	ND	48	1.00	
n-Butylbenzene	ND	4.8	1.00	
sec-Butylbenzene	ND	4.8	1.00	
tert-Butylbenzene	ND	4.8	1.00	
Carbon Disulfide	ND	48	1.00	
Carbon Tetrachloride	ND	4.8	1.00	
Chlorobenzene	ND	4.8	1.00	
Chloroethane	ND	4.8	1.00	
Chloroform	ND	4.8	1.00	
Chloromethane	ND	24	1.00	
2-Chlorotoluene	ND	4.8	1.00	
4-Chlorotoluene	ND	4.8	1.00	
Dibromochloromethane	ND	4.8	1.00	
1,2-Dibromo-3-Chloropropane	ND	9.7	1.00	
1,2-Dibromoethane	ND	4.8	1.00	
Dibromomethane	ND	4.8	1.00	
1,2-Dichlorobenzene	ND	4.8	1.00	
1,3-Dichlorobenzene	ND	4.8	1.00	
1,4-Dichlorobenzene	ND	4.8	1.00	
Dichlorodifluoromethane	ND	4.8	1.00	
1,1-Dichloroethane	ND	4.8	1.00	
1,2-Dichloroethane	ND	4.8	1.00	
1,1-Dichloroethene	ND	4.8	1.00	
c-1,2-Dichloroethene	ND	4.8	1.00	
t-1,2-Dichloroethene	ND	4.8	1.00	
1,2-Dichloropropane	ND	4.8	1.00	
1,3-Dichloropropane	ND	4.8	1.00	
2,2-Dichloropropane	ND	4.8	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/16/17
Work Order: 17-03-1223
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/kg

Project: INFINEON - El Segundo / 0397848-002

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	4.8	1.00	
c-1,3-Dichloropropene	ND	4.8	1.00	
t-1,3-Dichloropropene	ND	4.8	1.00	
Ethylbenzene	ND	4.8	1.00	
2-Hexanone	ND	48	1.00	
Isopropylbenzene	ND	4.8	1.00	
p-Isopropyltoluene	ND	4.8	1.00	
Methylene Chloride	ND	48	1.00	
4-Methyl-2-Pentanone	ND	48	1.00	
Naphthalene	ND	48	1.00	
n-Propylbenzene	ND	4.8	1.00	
Styrene	ND	4.8	1.00	
1,1,1,2-Tetrachloroethane	ND	4.8	1.00	
1,1,2,2-Tetrachloroethane	ND	4.8	1.00	
Tetrachloroethene	ND	4.8	1.00	
Toluene	ND	4.8	1.00	
1,2,3-Trichlorobenzene	ND	9.7	1.00	
1,2,4-Trichlorobenzene	ND	4.8	1.00	
1,1,1-Trichloroethane	ND	4.8	1.00	
1,1,2-Trichloroethane	ND	4.8	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	48	1.00	
Trichloroethene	ND	4.8	1.00	
1,2,3-Trichloropropane	ND	4.8	1.00	
1,2,4-Trimethylbenzene	ND	4.8	1.00	
Trichlorofluoromethane	ND	48	1.00	
1,3,5-Trimethylbenzene	ND	4.8	1.00	
Vinyl Acetate	ND	48	1.00	
Vinyl Chloride	ND	4.8	1.00	
p/m-Xylene	ND	4.8	1.00	
o-Xylene	ND	4.8	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	4.8	1.00	
Tert-Butyl Alcohol (TBA)	ND	48	1.00	
Diisopropyl Ether (DIPE)	ND	9.7	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	9.7	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	9.7	1.00	
Ethanol	ND	240	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	88	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/16/17
1920 Main Street, Suite 300	Work Order:	17-03-1223
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/kg
Project: INFINEON - El Segundo / 0397848-002		Page 12 of 18

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	94	79-133	
1,2-Dichloroethane-d4	110	71-155	
Toluene-d8	98	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/16/17
Work Order: 17-03-1223
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/kg

Project: INFINEON - El Segundo / 0397848-002

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SBB2-13-1-2	**17-03-1223-5-B**	**03/15/17 12:43**	**Solid**	**GC/MS GGG**	**03/16/17**	**03/17/17 19:51**	**170317L038**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	130	1.00	
Benzene	ND	5.1	1.00	
Bromobenzene	ND	5.1	1.00	
Bromochloromethane	ND	5.1	1.00	
Bromodichloromethane	ND	5.1	1.00	
Bromoform	ND	5.1	1.00	
Bromomethane	ND	25	1.00	
2-Butanone	ND	51	1.00	
n-Butylbenzene	ND	5.1	1.00	
sec-Butylbenzene	ND	5.1	1.00	
tert-Butylbenzene	ND	5.1	1.00	
Carbon Disulfide	ND	51	1.00	
Carbon Tetrachloride	ND	5.1	1.00	
Chlorobenzene	ND	5.1	1.00	
Chloroethane	ND	5.1	1.00	
Chloroform	ND	5.1	1.00	
Chloromethane	ND	25	1.00	
2-Chlorotoluene	ND	5.1	1.00	
4-Chlorotoluene	ND	5.1	1.00	
Dibromochloromethane	ND	5.1	1.00	
1,2-Dibromo-3-Chloropropane	ND	10	1.00	
1,2-Dibromoethane	ND	5.1	1.00	
Dibromomethane	ND	5.1	1.00	
1,2-Dichlorobenzene	ND	5.1	1.00	
1,3-Dichlorobenzene	ND	5.1	1.00	
1,4-Dichlorobenzene	ND	5.1	1.00	
Dichlorodifluoromethane	ND	5.1	1.00	
1,1-Dichloroethane	ND	5.1	1.00	
1,2-Dichloroethane	ND	5.1	1.00	
1,1-Dichloroethene	ND	5.1	1.00	
c-1,2-Dichloroethene	ND	5.1	1.00	
t-1,2-Dichloroethene	ND	5.1	1.00	
1,2-Dichloropropane	ND	5.1	1.00	
1,3-Dichloropropane	ND	5.1	1.00	
2,2-Dichloropropane	ND	5.1	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/16/17
1920 Main Street, Suite 300	Work Order:	17-03-1223
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/kg
Project: INFINEON - El Segundo / 0397848-002		Page 14 of 18

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	5.1	1.00	
c-1,3-Dichloropropene	ND	5.1	1.00	
t-1,3-Dichloropropene	ND	5.1	1.00	
Ethylbenzene	ND	5.1	1.00	
2-Hexanone	ND	51	1.00	
Isopropylbenzene	ND	5.1	1.00	
p-Isopropyltoluene	ND	5.1	1.00	
Methylene Chloride	ND	51	1.00	
4-Methyl-2-Pentanone	ND	51	1.00	
Naphthalene	ND	51	1.00	
n-Propylbenzene	ND	5.1	1.00	
Styrene	ND	5.1	1.00	
1,1,1,2-Tetrachloroethane	ND	5.1	1.00	
1,1,2,2-Tetrachloroethane	ND	5.1	1.00	
Tetrachloroethene	ND	5.1	1.00	
Toluene	ND	5.1	1.00	
1,2,3-Trichlorobenzene	ND	10	1.00	
1,2,4-Trichlorobenzene	ND	5.1	1.00	
1,1,1-Trichloroethane	ND	5.1	1.00	
1,1,2-Trichloroethane	ND	5.1	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	51	1.00	
Trichloroethene	ND	5.1	1.00	
1,2,3-Trichloropropane	ND	5.1	1.00	
1,2,4-Trimethylbenzene	ND	5.1	1.00	
Trichlorofluoromethane	ND	51	1.00	
1,3,5-Trimethylbenzene	ND	5.1	1.00	
Vinyl Acetate	ND	51	1.00	
Vinyl Chloride	ND	5.1	1.00	
p/m-Xylene	ND	5.1	1.00	
o-Xylene	ND	5.1	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	5.1	1.00	
Tert-Butyl Alcohol (TBA)	ND	51	1.00	
Diisopropyl Ether (DIPE)	ND	10	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	10	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	10	1.00	
Ethanol	ND	250	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	87	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/16/17
1920 Main Street, Suite 300	Work Order:	17-03-1223
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/kg
Project: INFINEON - El Segundo / 0397848-002		Page 15 of 18

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	94	79-133	
1,2-Dichloroethane-d4	112	71-155	
Toluene-d8	97	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/16/17
Work Order: 17-03-1223
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/kg

Project: INFINEON - El Segundo / 0397848-002

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-796-12465**	**N/A**	**Solid**	**GC/MS GGG**	**03/17/17**	**03/17/17 15:50**	**170317L038**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	120	1.00	
Benzene	ND	5.0	1.00	
Bromobenzene	ND	5.0	1.00	
Bromochloromethane	ND	5.0	1.00	
Bromodichloromethane	ND	5.0	1.00	
Bromoform	ND	5.0	1.00	
Bromomethane	ND	25	1.00	
2-Butanone	ND	50	1.00	
n-Butylbenzene	ND	5.0	1.00	
sec-Butylbenzene	ND	5.0	1.00	
tert-Butylbenzene	ND	5.0	1.00	
Carbon Disulfide	ND	50	1.00	
Carbon Tetrachloride	ND	5.0	1.00	
Chlorobenzene	ND	5.0	1.00	
Chloroethane	ND	5.0	1.00	
Chloroform	ND	5.0	1.00	
Chloromethane	ND	25	1.00	
2-Chlorotoluene	ND	5.0	1.00	
4-Chlorotoluene	ND	5.0	1.00	
Dibromochloromethane	ND	5.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	10	1.00	
1,2-Dibromoethane	ND	5.0	1.00	
Dibromomethane	ND	5.0	1.00	
1,2-Dichlorobenzene	ND	5.0	1.00	
1,3-Dichlorobenzene	ND	5.0	1.00	
1,4-Dichlorobenzene	ND	5.0	1.00	
Dichlorodifluoromethane	ND	5.0	1.00	
1,1-Dichloroethane	ND	5.0	1.00	
1,2-Dichloroethane	ND	5.0	1.00	
1,1-Dichloroethene	ND	5.0	1.00	
c-1,2-Dichloroethene	ND	5.0	1.00	
t-1,2-Dichloroethene	ND	5.0	1.00	
1,2-Dichloropropane	ND	5.0	1.00	
1,3-Dichloropropane	ND	5.0	1.00	
2,2-Dichloropropane	ND	5.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/16/17
1920 Main Street, Suite 300	Work Order:	17-03-1223
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/kg
Project: INFINEON - El Segundo / 0397848-002		Page 17 of 18

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	5.0	1.00	
c-1,3-Dichloropropene	ND	5.0	1.00	
t-1,3-Dichloropropene	ND	5.0	1.00	
Ethylbenzene	ND	5.0	1.00	
2-Hexanone	ND	50	1.00	
Isopropylbenzene	ND	5.0	1.00	
p-Isopropyltoluene	ND	5.0	1.00	
Methylene Chloride	ND	50	1.00	
4-Methyl-2-Pentanone	ND	50	1.00	
Naphthalene	ND	50	1.00	
n-Propylbenzene	ND	5.0	1.00	
Styrene	ND	5.0	1.00	
1,1,1,2-Tetrachloroethane	ND	5.0	1.00	
1,1,2,2-Tetrachloroethane	ND	5.0	1.00	
Tetrachloroethene	ND	5.0	1.00	
Toluene	ND	5.0	1.00	
1,2,3-Trichlorobenzene	ND	10	1.00	
1,2,4-Trichlorobenzene	ND	5.0	1.00	
1,1,1-Trichloroethane	ND	5.0	1.00	
1,1,2-Trichloroethane	ND	5.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	50	1.00	
Trichloroethene	ND	5.0	1.00	
1,2,3-Trichloropropane	ND	5.0	1.00	
1,2,4-Trimethylbenzene	ND	5.0	1.00	
Trichlorofluoromethane	ND	50	1.00	
1,3,5-Trimethylbenzene	ND	5.0	1.00	
Vinyl Acetate	ND	50	1.00	
Vinyl Chloride	ND	5.0	1.00	
p/m-Xylene	ND	5.0	1.00	
o-Xylene	ND	5.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	5.0	1.00	
Tert-Butyl Alcohol (TBA)	ND	50	1.00	
Diisopropyl Ether (DIPE)	ND	10	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	10	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	10	1.00	
Ethanol	ND	250	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	91	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/16/17
1920 Main Street, Suite 300		Work Order:	17-03-1223
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/kg
Project: INFINEON - El Segundo / 0397848-002			Page 18 of 18

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	95	79-133	
1,2-Dichloroethane-d4	112	71-155	
Toluene-d8	98	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Quality Control - Spike/Spike Duplicate

ERM-WEST		Date Received:	03/16/17
1920 Main Street, Suite 300		Work Order:	17-03-1223
Irvine, CA 92614-7279		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)
Project: INFINEON - El Segundo / 0397848-002			Page 1 of 4

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
17-03-1274-3	**Sample**	**Solid**	**GC 48**	**03/20/17**	**03/20/17 20:37**	**170320S05**
17-03-1274-3	**Matrix Spike**	**Solid**	**GC 48**	**03/20/17**	**03/20/17 17:12**	**170320S05**
17-03-1274-3	**Matrix Spike Duplicate**	**Solid**	**GC 48**	**03/20/17**	**03/20/17 17:33**	**170320S05**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
TPH as Diesel	ND	400.0	460.8	115	437.8	109	64-130	5	0-15	

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - Spike/Spike Duplicate

ERM-WEST		Date Received:	03/16/17
1920 Main Street, Suite 300		Work Order:	17-03-1223
Irvine, CA 92614-7279		Preparation:	EPA 3050B
		Method:	EPA 6010B
Project: INFINEON - El Segundo / 0397848-002			Page 2 of 4

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
SBB2-9-3-4	**Sample**	**Solid**	**ICP 7300**	**03/17/17**	**03/20/17 13:38**	**170317S02**
SBB2-9-3-4	**Matrix Spike**	**Solid**	**ICP 7300**	**03/17/17**	**03/20/17 13:41**	**170317S02**
SBB2-9-3-4	**Matrix Spike Duplicate**	**Solid**	**ICP 7300**	**03/17/17**	**03/20/17 13:42**	**170317S02**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Antimony	ND	25.00	8.304	33	9.361	37	50-115	12	0-20	3
Arsenic	ND	25.00	25.93	104	27.13	109	75-125	5	0-20	
Barium	71.72	25.00	95.64	96	96.47	99	75-125	1	0-20	
Beryllium	0.2785	25.00	26.01	103	26.29	104	75-125	1	0-20	
Cadmium	ND	25.00	26.12	104	26.42	106	75-125	1	0-20	
Chromium	15.33	25.00	42.03	107	40.67	101	75-125	3	0-20	
Cobalt	5.419	25.00	31.55	105	31.63	105	75-125	0	0-20	
Copper	6.170	25.00	32.93	107	32.77	106	75-125	1	0-20	
Lead	3.158	25.00	29.33	105	30.08	108	75-125	3	0-20	
Molybdenum	ND	25.00	24.20	97	24.77	99	75-125	2	0-20	
Nickel	8.394	25.00	34.02	102	34.44	104	75-125	1	0-20	
Selenium	ND	25.00	25.32	101	25.96	104	75-125	2	0-20	
Silver	ND	12.50	11.84	95	12.24	98	75-125	3	0-20	
Thallium	ND	25.00	24.99	100	25.33	101	75-125	1	0-20	
Vanadium	25.58	25.00	51.35	103	48.83	93	75-125	5	0-20	
Zinc	19.51	25.00	44.67	101	45.04	102	75-125	1	0-20	

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - Spike/Spike Duplicate

ERM-WEST		Date Received:	03/16/17
1920 Main Street, Suite 300		Work Order:	17-03-1223
Irvine, CA 92614-7279		Preparation:	EPA 7471A Total
		Method:	EPA 7471A
Project: INFINEON - El Segundo / 0397848-002			Page 3 of 4

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
SBB2-9-3-4	**Sample**	**Solid**	**Mercury 08**	**03/17/17**	**03/17/17 15:56**	**170317S02**
SBB2-9-3-4	**Matrix Spike**	**Solid**	**Mercury 08**	**03/17/17**	**03/17/17 15:58**	**170317S02**
SBB2-9-3-4	**Matrix Spike Duplicate**	**Solid**	**Mercury 08**	**03/17/17**	**03/17/17 16:00**	**170317S02**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Mercury	ND	0.8350	0.9995	120	1.052	126	71-137	5	0-14	

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - Spike/Spike Duplicate

ERM-WEST		Date Received:	03/16/17
1920 Main Street, Suite 300		Work Order:	17-03-1223
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
Project: INFINEON - El Segundo / 0397848-002			Page 4 of 4

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
SBB2-9-3-4	**Sample**	**Solid**	**GC/MS GGG**	**03/16/17**	**03/17/17 16:16**	**170317S005**
SBB2-9-3-4	**Matrix Spike**	**Solid**	**GC/MS GGG**	**03/16/17**	**03/17/17 16:44**	**170317S005**
SBB2-9-3-4	**Matrix Spike Duplicate**	**Solid**	**GC/MS GGG**	**03/16/17**	**03/17/17 17:10**	**170317S005**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Benzene	ND	50.00	53.05	106	52.57	105	61-127	1	0-20	
Carbon Tetrachloride	ND	50.00	52.26	105	52.33	105	51-135	0	0-29	
Chlorobenzene	ND	50.00	54.80	110	55.05	110	57-123	0	0-20	
1,2-Dibromoethane	ND	50.00	55.21	110	56.05	112	64-124	2	0-20	
1,2-Dichlorobenzene	ND	50.00	53.81	108	54.22	108	35-131	1	0-25	
1,2-Dichloroethane	ND	50.00	55.38	111	55.14	110	80-120	0	0-20	
1,1-Dichloroethene	ND	50.00	52.92	106	53.22	106	47-143	1	0-25	
Ethylbenzene	ND	50.00	55.00	110	55.11	110	57-129	0	0-22	
Toluene	ND	50.00	54.00	108	53.73	107	63-123	1	0-20	
Trichloroethene	ND	50.00	52.84	106	52.56	105	44-158	1	0-20	
Vinyl Chloride	ND	50.00	51.93	104	52.96	106	49-139	2	0-47	
p/m-Xylene	ND	100.0	110.8	111	111.2	111	70-130	0	0-30	
o-Xylene	ND	50.00	53.71	107	53.50	107	70-130	0	0-30	
Methyl-t-Butyl Ether (MTBE)	ND	50.00	49.12	98	50.19	100	57-123	2	0-21	
Tert-Butyl Alcohol (TBA)	ND	250.0	283.3	113	290.5	116	30-168	2	0-34	
Diisopropyl Ether (DIPE)	ND	50.00	49.48	99	49.57	99	57-129	0	0-20	
Ethyl-t-Butyl Ether (ETBE)	ND	50.00	45.69	91	46.00	92	55-127	1	0-20	
Tert-Amyl-Methyl Ether (TAME)	ND	50.00	45.65	91	45.58	91	58-124	0	0-20	
Ethanol	ND	500.0	590.5	118	588.7	118	17-167	0	0-47	

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS

ERM-WEST		Date Received:	03/16/17
1920 Main Street, Suite 300		Work Order:	17-03-1223
Irvine, CA 92614-7279		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)
Project: INFINEON - El Segundo / 0397848-002			Page 1 of 4

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-15-490-2539	**LCS**	**Solid**	**GC 48**	**03/20/17**	**03/20/17 16:51**	**170320B05**

Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	Qualifiers
TPH as Diesel	400.0	413.8	103	75-123	

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS

ERM-WEST		Date Received:	03/16/17
1920 Main Street, Suite 300		Work Order:	17-03-1223
Irvine, CA 92614-7279		Preparation:	EPA 3050B
		Method:	EPA 6010B
Project: INFINEON - El Segundo / 0397848-002			Page 2 of 4

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
097-01-002-24453	**LCS**	**Solid**	**ICP 7300**	**03/17/17**	**03/20/17 12:48**	**170317L02**

Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	ME CL	Qualifiers
Antimony	25.00	23.11	92	80-120	73-127	
Arsenic	25.00	23.18	93	80-120	73-127	
Barium	25.00	25.58	102	80-120	73-127	
Beryllium	25.00	23.87	95	80-120	73-127	
Cadmium	25.00	24.43	98	80-120	73-127	
Chromium	25.00	24.89	100	80-120	73-127	
Cobalt	25.00	25.13	101	80-120	73-127	
Copper	25.00	25.19	101	80-120	73-127	
Lead	25.00	24.81	99	80-120	73-127	
Molybdenum	25.00	23.70	95	80-120	73-127	
Nickel	25.00	24.97	100	80-120	73-127	
Selenium	25.00	23.06	92	80-120	73-127	
Silver	12.50	12.10	97	80-120	73-127	
Thallium	25.00	24.85	99	80-120	73-127	
Vanadium	25.00	23.59	94	80-120	73-127	
Zinc	25.00	25.01	100	80-120	73-127	

Total number of LCS compounds: 16
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS

ERM-WEST		Date Received:	03/16/17
1920 Main Street, Suite 300		Work Order:	17-03-1223
Irvine, CA 92614-7279		Preparation:	EPA 7471A Total
		Method:	EPA 7471A
Project: INFINEON - El Segundo / 0397848-002			Page 3 of 4

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-16-272-2879	**LCS**	**Solid**	**Mercury 08**	**03/17/17**	**03/17/17 15:53**	**170317L02**

Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	Qualifiers
Mercury	0.8350	0.9820	118	85-121	

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS

ERM-WEST		Date Received:	03/16/17
1920 Main Street, Suite 300		Work Order:	17-03-1223
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
Project: INFINEON - El Segundo / 0397848-002			Page 4 of 4

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-12-796-12465	**LCS**	**Solid**	**GC/MS GGG**	**03/17/17**	**03/17/17 14:29**	**170317L038**

Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	ME CL	Qualifiers
Benzene	50.00	52.01	104	80-120	73-127	
Carbon Tetrachloride	50.00	51.90	104	65-137	53-149	
Chlorobenzene	50.00	55.26	111	80-120	73-127	
1,2-Dibromoethane	50.00	53.76	108	80-120	73-127	
1,2-Dichlorobenzene	50.00	56.11	112	80-120	73-127	
1,2-Dichloroethane	50.00	53.24	106	80-120	73-127	
1,1-Dichloroethene	50.00	51.93	104	68-128	58-138	
Ethylbenzene	50.00	54.62	109	80-120	73-127	
Toluene	50.00	53.49	107	80-120	73-127	
Trichloroethene	50.00	51.35	103	80-120	73-127	
Vinyl Chloride	50.00	50.75	101	67-127	57-137	
p/m-Xylene	100.0	110.5	111	75-125	67-133	
o-Xylene	50.00	53.95	108	75-125	67-133	
Methyl-t-Butyl Ether (MTBE)	50.00	48.13	96	70-124	61-133	
Tert-Butyl Alcohol (TBA)	250.0	281.1	112	73-121	65-129	
Diisopropyl Ether (DIPE)	50.00	48.89	98	69-129	59-139	
Ethyl-t-Butyl Ether (ETBE)	50.00	45.56	91	70-124	61-133	
Tert-Amyl-Methyl Ether (TAME)	50.00	45.03	90	74-122	66-130	
Ethanol	500.0	550.6	110	51-135	37-149	

Total number of LCS compounds: 19
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

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RPD: Relative Percent Difference. CL: Control Limits

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Sample Analysis Summary Report

Work Order: 17-03-1223 Page 1 of 1

Method	Extraction	Chemist ID	Instrument	Analytical Location
EPA 6010B	EPA 3050B	935	ICP 7300	1
EPA 7471A	EPA 7471A Total	868	Mercury 08	1
EPA 8015B (M)	EPA 3550B	682	GC 48	1
EPA 8260B	EPA 5030C	1023	GC/MS GGG	2

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Glossary of Terms and Qualifiers

Work Order: 17-03-1223 Page 1 of 1

Qualifiers	Definition
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
CI	See case narrative.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

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For courier service / sample drop off information, contact us26_sales@eurofinsus.com or call us.

CHAIN-OF-CUSTODY RECORD

Date 3/15/17
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WO NO. / LAB USE ONLY
17-03-1223

LABORATORY CLIENT: ERM
ADDRESS: 1920 MAIN ST, SUITE 300
CITY: IRVINE STATE: CA ZIP: 92614
TEL: 949-623-4670 E-MAIL: MARLENE.DAWES@ERM.COM

CLIENT PROJECT NAME / NO.: INFINEON - EL SEGUNDO
P.O. NO.: 0397848-002
PROJECT CONTACT: MARLENE DAWES
LAB CONTACT OR QUOTE NO:
GLOBAL ID:
LOG CODE:
SAMPLER(S): (PRINT) MELISSA MEELHUSEN

TURNAROUND TIME (Rush surcharges may apply to any TAT not "STANDARD"):
☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAYS ☒ STANDARD

EDD
☐ COELT EDF ☐ OTHER

SPECIAL INSTRUCTIONS:

Revisd COC received from Marlene Dawes (ERM) on 03/23/2017 at 08:15am.
- Virendra (ECI)

REQUESTED ANALYSES
Please check box or fill in blank as needed.

LAB USE ONLY	SAMPLE ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	Unpreserved	Preserved	Field Filtered	TPH(g) ☐ GRO	TPH(d) ☐ DRO	TPH ☐ C6-C36 ☐ C6-C44	TPH ____	BTEX / MTBE ☐ 8260 ☐ ____	VOCs (8260)	Oxygenates (8260)	Prep (5035) ☐ En Core ☐ Terra Core	SVOCs (8270)	Pesticides (8081)	PCBs (8082)	PAHs ☐ 8270 ☐ 8270 SIM	T22 Metals ☐ 6010/747X ☐ 6020/747X	Cr(VI) ☐ 7196 ☐ 7199 ☐ 218.6
1	SBB2-9-3-4	3/15/17	1110	Soil	3	3					X			X							X	
2	SBB2-10-2-3	3/15/17	1125	Soil	3	3					X			X							X	
3	SBB2-11-0-2	3/15/17	1203	Soil	3	3					X			X							X	
4	SBB2-12-7-8	3/15/17	1225	Soil	3	3					X			X							X	
5	SBB2-13-1-2	3/15/17	1243	Soil	3	3					X			X							X	

Relinquished by: (Signature) MELISSA MEELHUSEN
Relinquished by: (Signature)
Relinquished by: (Signature)

Received by: (Signature/Affiliation)
Received by: (Signature/Affiliation) ECI
Received by: (Signature/Affiliation)

Date: 3/16/17 Time: 1025
Date: 3/16/17 Time: 1310
Date: Time:

2016-04-01-Revision

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CHAIN-OF-CUSTODY RECORD

Date 3/15/17
Page 1 of 1

WO NO. / LAB USE ONLY
17-03-1223

LABORATORY CLIENT: ERM
ADDRESS: 1920 MAIN ST, SUITE 300
CITY: IRVINE STATE: CA ZIP: 92614
TEL: 949-623-4670 E-MAIL: MARLENE.DAWES@ERM.COM

CLIENT PROJECT NAME / NO.: INFINEON - EL SEGUNDO
PROJECT CONTACT: MARLENE DAWES
GLOBAL ID:
LOG CODE:
P.O. NO.:
LAB CONTACT OR QUOTE NO:
SAMPLER(S): (PRINT) MELISSA MEEMKEN

TURNAROUND TIME (Rush surcharges may apply to any TAT not "STANDARD"):
☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAYS ☒ STANDARD

EDD
☐ COELT EDF ☐ OTHER

SPECIAL INSTRUCTIONS:

REQUESTED ANALYSES
Please check box or fill in blank as needed.

LAB USE ONLY	SAMPLE ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	Unpreserved	Preserved	Field Filtered	TPH(g) ☐ GRO	TPH(d) ☐ DRO	TPH ☐ C6-C36 ☒ C6-C44	TPH ____	BTEX / MTBE ☐ 8260 ☐ ____	VOCs (8260)	Oxygenates (8260)	Prep (5035) ☐ En Core ☐ Terra Core	SVOCs (8270)	Pesticides (8081)	PCBs (8082)	PAHs ☐ 8270 ☐ 8270 SIM	T22 Metals ☒ 6010/747X ☐ 6020/747X	Cr(VI) ☐ 7196 ☐ 7199 ☐ 218.6					
1	SBB2-9-3-4	3/15/17	1110	Soil	3	3					X			X							X					
2	SBB2-10-2-3		1125	Soil	3	3					X			X							X					
3	SBB2-11-0-2		1203	Soil	3	3					X			X							X					
4	SBB2-12-7-8		1225	Soil	3	3					X			X							X					
5	SBB2-13-1-2		1243	Soil	3	3					X			X							X					

Relinquished by: (Signature) MELISSA MEEMKEN	Received by: (Signature/Affiliation)	Date: 3/16/17	Time: 1025
Relinquished by: (Signature)	Received by: (Signature/Affiliation) ECI	Date: 3/16/17	Time: 1310
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:

2016-04-01-Revision

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WORK ORDER NUMBER: 17-03- 1223

SAMPLE RECEIPT CHECKLIST

COOLER 1 OF 1

CLIENT: ERM

DATE: 03 / 16 / 2017

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)

Thermometer ID: SC3B (CF: 0.0°C); Temperature (w/o CF): 2.0 °C (w/ CF): 2.0 °C; ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____)

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling

☐ Sample(s) received at ambient temperature; placed on ice for transport by courier

Ambient Temperature: ☐ Air ☐ Filter Checked by: 1091

CUSTODY SEAL:

Cooler ☐ Present and Intact ☐ Present but Not Intact ☑ Not Present ☐ N/A Checked by: 1091

Sample(s) ☐ Present and Intact ☐ Present but Not Intact ☑ Not Present ☐ N/A Checked by: 1053

SAMPLE CONDITION:	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☐	☑	☐
☑ Sampling date (-7 to -3) ☐ Sampling time ☐ Matrix ☐ Number of containers			
☐ No analysis requested ☐ Not relinquished ☐ No relinquished date ☐ No relinquished time			
Sampler's name indicated on COC	☑	☐	☐
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and in good condition	☑	☐	☐
Proper containers for analyses requested	☑	☐	☐
Sufficient volume/mass for analyses requested	☑	☐	☐
Samples received within holding time	☑	☐	☐
Aqueous samples for certain analyses received within 15-minute holding time			
☐ pH ☐ Residual Chlorine ☐ Dissolved Sulfide ☐ Dissolved Oxygen	☐	☐	☑
Proper preservation chemical(s) noted on COC and/or sample container	☐	☐	☑
Unpreserved aqueous sample(s) received for certain analyses			
☐ Volatile Organics ☐ Total Metals ☐ Dissolved Metals			
Container(s) for certain analysis free of headspace	☐	☐	☑
☐ Volatile Organics ☐ Dissolved Gases (RSK-175) ☐ Dissolved Oxygen (SM 4500)			
☐ Carbon Dioxide (SM 4500) ☐ Ferrous Iron (SM 3500) ☐ Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE: (Trip Blank Lot Number: _____)

Aqueous: ☐ VOA ☐ VOA**h** ☐ VOA**na$_2$** ☐ 100PJ ☐ 100PJ**na$_2$** ☐ 125AGB ☐ 125AGB**h** ☐ 125AGB**p** ☐ 125PB

☐ 125PB**znna** ☐ 250AGB ☐ 250CGB ☐ 250CGB**s** ☐ 250PB ☐ 250PB**n** ☐ 500AGB ☐ 500AGJ ☐ 500AGJ**s**

☐ 500PB ☐ 1AGB ☐ 1AGB**na$_2$** ☐ 1AGB**s** ☐ 1PB ☐ 1PB**na** ☐ _____ ☐ _____ ☐ _____ ☐ _____

Solid: ☐ 4ozCGJ ☑ 8ozCGJ ☐ 16ozCGJ ☐ Sleeve (_____) ☐ EnCores® (_____) ☐ TerraCores® (_____) ☐ _____

Air: ☐ Tedlar™ ☐ Canister ☐ Sorbent Tube ☐ PUF ☐ _____ **Other Matrix** (_____): ☐ _____ ☐ _____

Container: **A** = Amber, **B** = Bottle, **C** = Clear, **E** = Envelope, **G** = Glass, **J** = Jar, **P** = Plastic, and **Z** = Ziploc/Resealable Bag

Preservative: **b** = buffered, **f** = filtered, **h** = HCl, **n** = HNO_3, **na** = NaOH, **na$_2$** = $Na_2S_2O_3$, **p** = H_3PO_4, **s** = H_2SO_4, **u** = ultra-pure, **x** = Na_2SO_3+$NaHSO_4.H_2O$, **znna** = Zn $(CH_3CO_2)_2$ + NaOH

Labeled/Checked by: 1053

Reviewed by: TM

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Contents

Client Project Name: INFINEON - El Segundo / 0397848-002
Work Order Number: 17-03-1223

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Work Order Narrative

Work Order: 17-03-1223 Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 03/16/17. They were assigned to Work Order 17-03-1223.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

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Sample Summary

Client:	ERM-WEST 1920 Main Street, Suite 300 Irvine, CA 92614-7279	Work Order:	17-03-1223
		Project Name:	INFINEON - El Segundo / 0397848-002
		PO Number:	0397848-002
		Date/Time Received:	03/16/17 13:10
		Number of Containers:	5
Attn:	Marlene Dawes		

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
SBB2-9-3-4	17-03-1223-1	03/15/17 11:10	1	Solid
SBB2-10-2-3	17-03-1223-2	03/15/17 11:25	1	Solid
SBB2-11-0-2	17-03-1223-3	03/15/17 12:03	1	Solid
SBB2-12-7-8	17-03-1223-4	03/15/17 12:25	1	Solid
SBB2-13-1-2	17-03-1223-5	03/15/17 12:43	1	Solid

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Detections Summary

Client:	ERM-WEST	Work Order:	17-03-1223
	1920 Main Street, Suite 300	Project Name:	INFINEON - El Segundo / 0397848-002
	Irvine, CA 92614-7279	Received:	03/16/17
Attn:	Marlene Dawes		Page 1 of 1

Client SampleID / Analyte	Result	Qualifiers	RL	Units	Method	Extraction
SBB2-11-0-2 (17-03-1223-3)						
Chromium, Hexavalent	1.1		0.80	mg/kg	EPA 7196A	N/A
SBB2-12-7-8 (17-03-1223-4)						
Chromium, Hexavalent	1.1		0.80	mg/kg	EPA 7196A	N/A

Subcontracted analyses, if any, are not included in this summary.

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* MDL is shown

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/16/17
Work Order: 17-03-1223
Preparation: N/A
Method: EPA 7196A
Units: mg/kg

Project: INFINEON - El Segundo / 0397848-002

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SBB2-11-0-2	**17-03-1223-3-B**	**03/15/17 12:03**	**Solid**	**UV 7**	**04/01/17**	**04/01/17 16:17**	**H0401CRL1**

Parameter	Result	RL	DF	Qualifiers
Chromium, Hexavalent	1.1	0.80	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SBB2-12-7-8	**17-03-1223-4-C**	**03/15/17 12:25**	**Solid**	**UV 7**	**04/01/17**	**04/01/17 16:17**	**H0401CRL1**

Parameter	Result	RL	DF	Qualifiers
Chromium, Hexavalent	1.1	0.80	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-05-001-5991**	**N/A**	**Solid**	**UV 7**	**04/01/17**	**04/01/17 16:17**	**H0401CRL1**

Parameter	Result	RL	DF	Qualifiers
Chromium, Hexavalent	ND	0.020	0.0250	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Quality Control - Spike/Spike Duplicate

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/16/17
Work Order: 17-03-1223
Preparation: N/A
Method: EPA 7196A

Project: INFINEON - El Segundo / 0397848-002

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
SBB2-12-7-8	**Sample**	**Solid**	**UV 7**	**04/01/17**	**04/01/17 16:17**	**H0401CRS1**
SBB2-12-7-8	**Matrix Spike**	**Solid**	**UV 7**	**04/01/17**	**04/01/17 16:17**	**H0401CRS1**
SBB2-12-7-8	**Matrix Spike Duplicate**	**Solid**	**UV 7**	**04/01/17**	**04/01/17 16:17**	**H0401CRS1**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Chromium, Hexavalent	1.115	20.00	19.16	90	19.00	89	75-125	1	0-25	

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS/LCSD

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: INFINEON - El Segundo / 0397848-002

Date Received: 03/16/17
Work Order: 17-03-1223
Preparation: N/A
Method: EPA 7196A

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-05-001-5991	**LCS**	**Solid**	**UV 7**	**04/01/17**	**04/01/17 16:17**	**H0401CRL1**
099-05-001-5991	**LCSD**	**Solid**	**UV 7**	**04/01/17**	**04/01/17 16:17**	**H0401CRL1**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Chromium, Hexavalent	0.5000	0.4655	93	0.4779	96	80-120	3	0-20	

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RPD: Relative Percent Difference. CL: Control Limits

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Sample Analysis Summary Report

Work Order: 17-03-1223 Page 1 of 1

Method	Extraction	Chemist ID	Instrument	Analytical Location
EPA 7196A	N/A	990	UV 7	1

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Glossary of Terms and Qualifiers

Work Order: 17-03-1223 Page 1 of 1

Qualifiers	Definition
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
CI	See case narrative.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

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Virendra Patel

From: Maggie Tymkow <Maggie.Tymkow@erm.com>
Sent: Friday, March 31, 2017 10:40 AM
To: Virendra Patel; Stewart Emhof
Cc: Erick Ovalle; Marlene Dawes
Subject: RE: Request for Analyses17-03-1154-5-B and 17-03-1223-4 - Infineon - El Segundo

Virendra, please change the TAT from Standard to **48 hr.** for:

From 17-03-1154-B

- SB-10-1-2 (17-03-1154-5-B)
- SB-19-0-1 (17-03-1154-14-B)

From 17-03-1223-4

- SBB2-11-0-2 (17-03-1223-3)
- SBB2-12-7-8 (17-03-1223-4)

Thank you,

Maggie A. Tymkow
Senior Project Consultant

ERM
1920 Main Street, Suite 300 | Irvine, California | 92614
T 949 623 4700 | **M** 562 882 4402
E maggie.tymkow@erm.com | **W** www.erm.com

From: Virendra Patel [mailto:VirendraPatel@eurofinsUS.com]
Sent: Thursday, March 30, 2017 10:08 AM
To: Stewart Emhof
Cc: Maggie Tymkow; Erick Ovalle; Marlene Dawes
Subject: RE: Request for Analyses17-03-1154-5-B and 17-03-1223-4 - Infineon - El Segundo

Ok, we will have to use your email from this morning as record. Unless you want to send us a new invoice with the analytical method referenced.

Thanks!

Best Regards,

Virendra Patel
Project Manager

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Eurofins Calscience, Inc.
7440 Lincoln Way
Garden Grove, CA 92841
USA
P: +1 714 895 5494
F: +1 714 894 7501

Email: virendrapatel@eurofinsUS.com
Website: www.eurofinsUS.com/Calscience

From: Stewart Emhof [mailto:Stewart.Emhof@erm.com]
Sent: Thursday, March 30, 2017 10:00 AM
To: Virendra Patel
Cc: Maggie Tymkow; Erick Ovalle; Marlene Dawes
Subject: RE: Request for Analyses17-03-1154-5-B and 17-03-1223-4 - Infineon - El Segundo

Virendra,
Please analyze using Method 7196A with the higher RL, (I believe you stated 800 ppb).
Thanks,
Stewart

From: Virendra Patel [mailto:VirendraPatel@eurofinsUS.com]
Sent: Wednesday, March 29, 2017 3:47 PM
To: Stewart Emhof
Cc: Maggie Tymkow; Erick Ovalle
Subject: RE: Request for Analyses17-03-1154-5-B and 17-03-1223-4 - Infineon - El Segundo

Stewart,

Hi. What analytical method EPA 7199 or EPA 7196A? Please advise. Thank you!

Best Regards,

Virendra Patel
Project Manager

Eurofins Calscience, Inc.
7440 Lincoln Way
Garden Grove, CA 92841
USA
P: +1 714 895 5494
F: +1 714 894 7501

Email: virendrapatel@eurofinsUS.com
Website: www.eurofinsUS.com/Calscience

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From: Stewart Emhof [mailto:Stewart.Emhof@erm.com]
Sent: Wednesday, March 29, 2017 1:38 PM
To: Virendra Patel
Cc: Maggie Tymkow
Subject: Request for Analyses17-03-1154-5-B and 17-03-1223-4 - Infineon - El Segundo

Hello Virendra,
Please analyze the following soil samples for Chromium VI using similar turn-around time as on initial submittal:

From 17-03-1154-B

- SB-10-1-2 (17-03-1154-5-B)
- SB-19-0-1 (17-03-1154-14-B)

From 17-03-1223-4

- SBB2-11-0-2 (17-03-1223-3)
- SBB2-12-7-8 (17-03-1223-4)

Thank you,
Stewart

Stewart A. Emhof
Program Director

We have moved; please note our new address

ERM
1920 Main Street, Suite 300 | Irvine, CA | 92614
T 949 623 4700 | **D** 949 623 4678 | **M** 714 501 0671
E Stewart.Emhof@erm.com | **W** www.erm.com

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Please visit ERM's web site: http://www.erm.com

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7440 Lincoln Way, Garden Grove, CA 92841-1427 • (714) 895-5494
For courier service / sample drop off information, contact us26_sales@eurofinsus.com or call us.

CHAIN-OF-CUSTODY RECORD

Date 3/15/17
Page 1 of 1

WO NO. / LAB USE ONLY
17-03-1223

LABORATORY CLIENT: ERM
ADDRESS: 1920 MAIN ST, SUITE 300
CITY: IRVINE STATE: CA ZIP: 92614
TEL: 949-623-4670 E-MAIL: MARLENE.DAWES@ERM.COM

CLIENT PROJECT NAME / NO.: INFINEON-EL SEGUNDO
PROJECT CONTACT: MARLENE DAWES
GLOBAL ID:
LOG CODE:

P.O. NO.: 0397848-002
LAB CONTACT OR QUOTE NO:
SAMPLER(S): (PRINT) MELISSA MEELHUSEN

TURNAROUND TIME (Rush surcharges may apply to any TAT not "STANDARD"):
☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAYS ☒ STANDARD

EDD
☐ COELT EDF ☐ OTHER

SPECIAL INSTRUCTIONS:

Revisd COC received from Marlene Dawes (ERM) on 03/23/2017 at 08:15am.
- Virendra (ECI)

REQUESTED ANALYSES
Please check box or fill in blank as needed.

LAB USE ONLY	SAMPLE ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	Unpreserved	Preserved	Field Filtered	TPH(g) ☐ GRO	TPH(d) ☐ DRO	TPH ☐ C6-C36 ☐ C6-C44	TPH ____	BTEX / MTBE ☐ 8260 ☐ ____	VOCs (8260)	Oxygenates (8260)	Prep (5035) ☐ En Core ☐ Terra Core	SVOCs (8270)	Pesticides (8081)	PCBs (8082)	PAHs ☐ 8270 ☐ 8270 SIM	T22 Metals ☐ 6010/747X ☐ 6020/747X	Cr(VI) ☐ 7196 ☐ 7199 ☐ 218.6
1	SBB2-9-3-4	3/15/17	1110	Soil	3	3					X			X							X	
2	SBB2-10-2-3	3/15/17	1125	Soil	3	3					X			X							X	
3	SBB2-11-0-2	3/15/17	1203	Soil	3	3					X			X							X	
4	SBB2-12-7-8	3/15/17	1225	Soil	3	3					X			X							X	
5	SBB2-13-1-2	3/15/17	1243	Soil	3	3					X			X							X	

Relinquished by: (Signature) MELISSA MEELHUSEN	Received by: (Signature/Affiliation)	Date: 3/16/17	Time: 1025
Relinquished by: (Signature)	Received by: (Signature/Affiliation) ECI	Date: 3/16/17	Time: 1310
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:

2016-04-01-Revision

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7440 Lincoln Way, Garden Grove, CA 92841-1427 • (714) 895-5494
For courier service / sample drop off information, contact us26_sales@eurofinsus.com or call us.

CHAIN-OF-CUSTODY RECORD

Date 3/15/17
Page 1 of 1

WO NO. / LAB USE ONLY
17-03-1223

LABORATORY CLIENT: ERM
ADDRESS: 1920 MAIN ST, SUITE 300
CITY: IRVINE STATE: CA ZIP: 92614
TEL: 949-623-4670 E-MAIL: MARLENE.DAWES@ERM.COM

CLIENT PROJECT NAME / NO.: INFINEON-EL SEGUNDO
P.O. NO.:
PROJECT CONTACT: MARLENE DAWES
LAB CONTACT OR QUOTE NO:
GLOBAL ID:
LOG CODE:
SAMPLER(S): (PRINT) MELISSA MEEMKEN

TURNAROUND TIME (Rush surcharges may apply to any TAT not "STANDARD"):
☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAYS ☒ STANDARD

EDD
☐ COELT EDF ☐ OTHER

SPECIAL INSTRUCTIONS:

REQUESTED ANALYSES
Please check box or fill in blank as needed.

LAB USE ONLY	SAMPLE ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	Unpreserved	Preserved	Field Filtered	TPH(g) ☐ GRO	TPH(d) ☐ DRO	TPH ☐ C6-C36 ☒ C6-C44	TPH ____	BTEX / MTBE ☐ 8260 ☐ ____	VOCs (8260)	Oxygenates (8260)	Prep (5035) ☐ En Core ☐ Terra Core	SVOCs (8270)	Pesticides (8081)	PCBs (8082)	PAHs ☐ 8270 ☐ 8270 SIM	T22 Metals ☒ 6010/747X ☐ 6020/747X	Cr(VI) ☐ 7196 ☐ 7199 ☐ 218.6					
1	SBB2-9-3-4	3/15/17	1110	Soil	3	3					X			X							X					
2	SBB2-10-2-3		1125	Soil	3	3					X			X							X					
3	SBB2-11-0-2		1203	Soil	3	3					X			X							X					
4	SBB2-12-7-8		1225	Soil	3	3					X			X							X					
5	SBB2-13-1-2		1243	Soil	3	3					X			X							X					

Relinquished by: (Signature) MELISSA MEEMKEN	Received by: (Signature/Affiliation)	Date: 3/16/17	Time: 1025
Relinquished by: (Signature)	Received by: (Signature/Affiliation) ECI	Date: 3/16/17	Time: 1310
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:

2016-04-01-Revision

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WORK ORDER NUMBER: 17-03- 1223

SAMPLE RECEIPT CHECKLIST

COOLER 1 OF 1

CLIENT: ERM

DATE: 03 / 16 / 2017

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)

Thermometer ID: SC3B (CF: 0.0°C); Temperature (w/o CF): 2.0 °C (w/ CF): 2.0 °C; ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____)

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling

☐ Sample(s) received at ambient temperature; placed on ice for transport by courier

Ambient Temperature: ☐ Air ☐ Filter Checked by: 1091

CUSTODY SEAL:

Cooler ☐ Present and Intact ☐ Present but Not Intact ☑ Not Present ☐ N/A Checked by: 1091

Sample(s) ☐ Present and Intact ☐ Present but Not Intact ☑ Not Present ☐ N/A Checked by: 1053

SAMPLE CONDITION:	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☐	☑	☐
☑ Sampling date (-7 to -3) ☐ Sampling time ☐ Matrix ☐ Number of containers			
☐ No analysis requested ☐ Not relinquished ☐ No relinquished date ☐ No relinquished time			
Sampler's name indicated on COC	☑	☐	☐
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and in good condition	☑	☐	☐
Proper containers for analyses requested	☑	☐	☐
Sufficient volume/mass for analyses requested	☑	☐	☐
Samples received within holding time	☑	☐	☐
Aqueous samples for certain analyses received within 15-minute holding time			
☐ pH ☐ Residual Chlorine ☐ Dissolved Sulfide ☐ Dissolved Oxygen	☐	☐	☑
Proper preservation chemical(s) noted on COC and/or sample container	☐	☐	☑
Unpreserved aqueous sample(s) received for certain analyses			
☐ Volatile Organics ☐ Total Metals ☐ Dissolved Metals			
Container(s) for certain analysis free of headspace	☐	☐	☑
☐ Volatile Organics ☐ Dissolved Gases (RSK-175) ☐ Dissolved Oxygen (SM 4500)			
☐ Carbon Dioxide (SM 4500) ☐ Ferrous Iron (SM 3500) ☐ Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE: (Trip Blank Lot Number: _____)

Aqueous: ☐ VOA ☐ VOA**h** ☐ VOA**na$_2$** ☐ 100PJ ☐ 100PJ**na$_2$** ☐ 125AGB ☐ 125AGB**h** ☐ 125AGB**p** ☐ 125PB

☐ 125PB**znna** ☐ 250AGB ☐ 250CGB ☐ 250CGB**s** ☐ 250PB ☐ 250PB**n** ☐ 500AGB ☐ 500AGJ ☐ 500AGJ**s**

☐ 500PB ☐ 1AGB ☐ 1AGB**na$_2$** ☐ 1AGB**s** ☐ 1PB ☐ 1PB**na** ☐ _____ ☐ _____ ☐ _____ ☐ _____

Solid: ☐ 4ozCGJ ☑ 8ozCGJ ☐ 16ozCGJ ☐ Sleeve (_____) ☐ EnCores® (_____) ☐ TerraCores® (_____) ☐ _____

Air: ☐ Tedlar™ ☐ Canister ☐ Sorbent Tube ☐ PUF ☐ _____ **Other Matrix** (_____): ☐ _____ ☐ _____

Container: **A** = Amber, **B** = Bottle, **C** = Clear, **E** = Envelope, **G** = Glass, **J** = Jar, **P** = Plastic, and **Z** = Ziploc/Resealable Bag

Preservative: **b** = buffered, **f** = filtered, **h** = HCl, **n** = HNO_3, **na** = NaOH, **na$_2$** = $Na_2S_2O_3$, **p** = H_3PO_4, **s** = H_2SO_4, **u** = ultra-pure, **x** = Na_2SO_3+$NaHSO_4.H_2O$, **znna** = Zn $(CH_3CO_2)_2$ + NaOH

Labeled/Checked by: 1053

Reviewed by: TM

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Ordered By

ERM-West, Inc.
1920 Main Street Suite 300
Irvine, CA 92614-

Telephone: (949)623-4700
Attention: Marlene Dawes

Number of Pages 36
Date Received 03/17/2017
Date Reported 03/28/2017

Job Number	Order Date	Client
87042	03/17/2017	ERM

Project ID: INFINEON
Project Name: Infineon-El Segundo
Site: 1520 Grand Ave.
El Segundo, CA 90245

Enclosed please find results of analyses of 10 soil gas samples which were analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By: _____ Approved By: C. Razmara

Cyrus Razmara, Ph.D.
Laboratory Director

American Environmental Testing Laboratory Inc.

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CHAIN OF CUSTODY RECORD

№ 99419

AETL JOB No. 87042 Page 1 of 1

COMPANY: ERM
PROJECT MANAGER: MARLENE DAWES
COMPANY ADDRESS: 1920 MAIN ST., SUITE 300, IRVINE CA
PHONE / FAX: 949-623-4670
PROJECT NAME: INFINEON - EL SEGUNDO
PROJECT #:
SITE NAME AND ADDRESS: INFINEON, 1520 GRAND AVE, EL SEGUNDO, CA
PO #:

	SAMPLE ID	LAB ID	DATE	TIME	MATRIX	CONTAINER NUMBER/SIZE	PRES.	TO-15 + Methane
1	SV-21	87042.01	3/17/17	828/913	AIR	2455/6L	-28/-15	X
2	SV-14	87042.02		922/954	AIR	2446/6L	-28/-15	X
3	SV-16	87042.03		1004/1034	AIR	5655/6L	-28/-15	X
4	SV-15	87042.04		1044/1114	AIR	1875/6L	-28/-15	X
5	SV-17	87042.05		1124/1157	AIR	2454/6L	-28/-5	X
6	SV-18	87042.06		1205/1236	AIR	2204/6L	-28/-6	X
7	SV-10	87042.07		1310/1340	AIR	5653/6L	-28/-3	X
8	SVB2-1	87042.08		1349/1420	AIR	2195/6L	-28/-4	X
9	~~DUPLICATE 1~~	SVB2-5 87042.09		1435/1507	AIR	7431/6L	-28/-3	X
10	DUPLICATE 1	87042.10		1509/1541	AIR	2216/6L	-28/-5	X
11								
12								
13								
14								
15								

ANALYSIS REQUESTED

TEST INSTRUCTIONS & COMMENTS

TO-15 FOR VOCs + METHANE

* Sample IDs confirmed with Melissa.
* Proceed with login.
SV-16
SV-15
SV-17
SV-18
SV-10
SVB2-1
SVB2-5
Duplicate 1

3/20/2017

SAMPLE RECEIPT - TO BE FILLED BY LABORATORY

TOTAL NUMBER OF CONTAINERS	10	PROPERLY COOLED Y / N / NA	
CUSTODY SEALS Y / N / NA	NA	SAMPLES INTACT Y / N / NA	
RECEIVED IN GOOD COND. Y / N		SAMPLES ACCEPTED Y / N	

TURN AROUND TIME

- [x] NORMAL
- [ ] RUSH
  - [ ] SAME DAY
  - [ ] NEXT DAY
  - [ ] 2 DAYS
  - [ ] 3 DAYS

DATA DELIVERABLE REQUIRED

- [ ] HARD COPY
- [x] PDF
- [ ] GEOTRACKER (GLOBAL ID) _____
- [ ] OTHER (PLEASE SPECIFY) _____

	RELINQUISHED BY SAMPLER: 1.	RELINQUISHED BY: 2.	RELINQUISHED BY: 3.
Signature:			
Printed Name:	MELISSA MEELHUSEN		
Date / Time:	3/17/17 1616	/	3/17/17 1915
	RECEIVED BY: 1.	RECEIVED BY: 2.	RECEIVED BY LABORATORY: AETC 3.
Signature:			
Printed Name:			
Date / Time:	3/17/17 1616	/	03/17/17 1915

DISTRIBUTION: WHITE - Laboratory, CANARY - Laboratory, PINK - Project/Account Manager, YELLOW - Sampler/Originator

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COOLER RECEIPT FORM

Client Name: ERM
Project Name: INFINEON – SECUNDO
AETL Job Number: 87042
Date Received: 03/17/17 Received by: Sean Sandoval
Carrier: ☒ AETL Courier ☐ Client ☐ GSO ☐ FedEx ☐ UPS
☐ Others:

Samples were received in: ☐ Cooler (____) ☒ Other (Specify):
Inside temperature of shipping container No 1: N/A, No 2: ____, No 3: ____
Type of sample containers: ☐ VOA, ☐ Glass bottles, ☐ Wide mouth jars, ☐ HDPE bottles, ☐ Metal sleeves, ☒ Others (Specify): Summa Canisters
How are samples preserved: ☒ None, ☐ Ice, ☐ Blue Ice, ☐ Dry Ice
☒ None, _ HNO_3, _ NaOH, _ ZnOAc, _ HCl, _ $Na_2S_2O_3$, _ MeOH
_ Other (Specify):

	Yes	No, explain below	Name, if client was notified.
1. Are the COCs Correct?	X		
2. Are the Sample labels legible?	X		
3. Do samples match the COC?	X		
4. Are the required analyses clear?	X		
5. Is there enough samples for required analysis?	X		
6. Are samples sealed with evidence tape?	N/A		
7. Are sample containers in good condition?	X		
8. Are samples preserved?	X		
9. Are samples preserved properly for the intended analysis?	X		
10. Are the VOAs free of headspace?	N/A		
11. Are the jars free of headspace?	N/A		

Explain all "No" answers for above questions:

Christine Novshadayan

From: Stewart Emhof [Stewart.Emhof@erm.com]
Sent: Wednesday, April 05, 2017 10:38 AM
To: Christine Novshadayan
Cc: Cyrus Razmara; Melissa Meeuwsen
Subject: RE: Summary Tables and PDF files for "Infineon- El Segundo Project"
Attachments: COC_2017_03.17_PDF87042.pdf; Pages from Field Notes_Infineon_ElSegundo_SV-1.pdf

Hello Christine,
As mentioned in our telephone conversation, **Lab ID 87042.08** (samples collected on 3/17/2017) should have had an **ERM Sample ID** of **SV-1**.
For backup to confirm this error, please refer to the attached PDF of pages from Sampler's (Melissa Meeuwsen's) field notes showing sample "SV-1" (in added red rectangle) - - but no "SVB2-1".

Please make an additional note on the COC and send us a revised report at your earliest opportunity.

Thank you for your services, and your help on this matter.

Sincerely,
Stewart

Stewart A. Emhof
Program Director

ERM
1920 Main Street, Suite 300 | Irvine, CA | 92614
T 949 623 4700 | **D** 949 623 4678 | **M** 714 501 0671
E Stewart.Emhof@erm.com | **W** www.erm.com

From: Christine Novshadayan [mailto:christine@aetlab.com]
Sent: Wednesday, April 05, 2017 10:05 AM
To: Stewart Emhof
Cc: Cyrus Razmara
Subject: FW: Summary Tables and PDF files for "Infineon- El Segundo Project"

Dear Mr. Stewart,

Following our conversation, please find originally sent email bellow. Please advise on any necessary revisions needed for Sample ID- AETL Lab ID 87042.08.

Thanks,

Christine Novshadayan
American Environmental Testing Laboratory

2834 North Naomi Street
Burbank, CA 91504

Phone: 818-845-8200
Fax: 818-845-8840
christine@aetlab.com

From: Christine Novshadayan [mailto:christine@aetlab.com]
Sent: Tuesday, March 28, 2017 2:47 PM
To: Marlene Dawes
Cc: Jim Lin; Cyrus Razmara
Subject: Summary Tables and PDF files for "Infineon- El Segundo Project"

Dear Marlene,

Please find Summary Tables and PDF files attached to this e-mail for Project: "Infineon- El Segundo Project."

AETL Job No.: 87042 and 87046

If there is any question or concern, feel free to contact AETL.

Thanks,

Christine Novshadayan
American Environmental Testing Laboratory
2834 North Naomi Street
Burbank, CA 91504

Phone: 818-845-8200
Fax: 818-845-8840
christine@aetlab.com

3/17/17 INFINEON - EL SEGUNDO

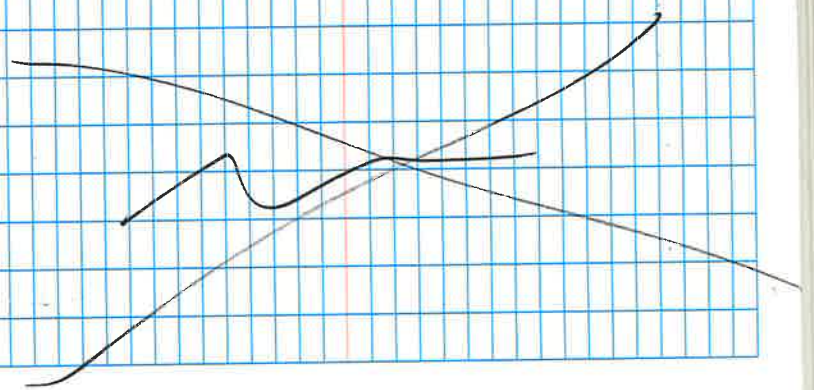
WEATHER: FOG, 50's

0715 ERM ON-SITE

- CALLED BRIAN OF INFINEON TO OPEN BUILDING AT KANSAS ST.

0740 CALIBRATE PID: AIR 0ppm ISO 100ppm

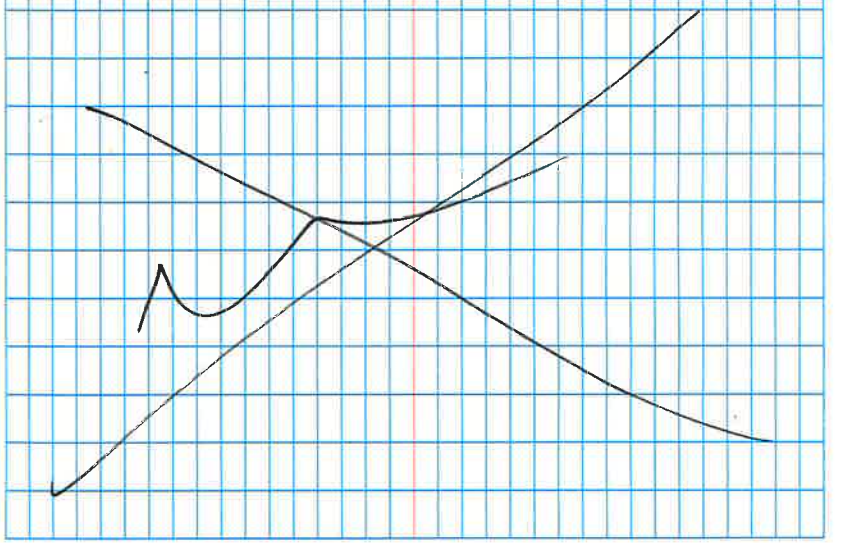
SAMPLE ID	PID (ppm)	TIME
~~SV-20~~ SV-21	2.5	815
SV-14	5.8	833
SV-16	3.6	836
SV-15	3.7	837
SV-17	3.9	838
SV-18	3.4	839
SV-10	17.3	925
SV-1	5.4	926
SVB2-5	14.3	1428
SVB2-10	15.4	1548



3/17/17 INFINEON - EL SEGUNDO

SAMPLE ID	I.P.	F.P	START	STOP
SV-21	-28	-15	828	913
SV-14	-28	-15	922	954
SV-16	-28	-15	1004	1034
SV-15	-28	-15	1044	1114
SV-17	-28	-5	1124	1157
SV-18	-28	-6	1205	1236
SV-10	-28	-3	1310	1340
SV-1	-28	-4	1349	1420
SVB2-5	-28	-3	1435	1507
DUPLICATE-1	-28	-5	1509	1541
SVB2-10	-28	-5	1553	1623

Dup-1 SVB2-5



3/17/17 INF. NEON - EL SEGUNDO

SAMPLE ID	CATALOG #	SERIAL #
SV-21	24142	2455
SV-14	24142	2446
SV-16	29-10621	5655
SV-15	24182	1875
SV-17	24142	2454
SV-18	24182	2204
SV-10	29-10621	5653
SV-1	24182	2195
SVB2-5	29-10621	7431 (Dup-1)
~~SVB2 Duplicate~~		
Duplicate-1	24182	2216 (SVB2-5)
SVB2-10	29-10621	7430

1616 SAMPLES PICK-UP BY COURIER UP TO DUPLICATE-1

1630 ERM OFF-SITE

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Ordered By

ERM-West, Inc.
1920 Main Street Suite 300
Irvine, CA 92614-

Telephone: (949)623-4700
Attention: Marlene Dawes

Project ID: INFINEON
Date Received 03/17/2017
Date Reported 03/28/2017

Job Number	Order Date	Client
87042	03/17/2017	ERM

CERTIFICATE OF ANALYSIS
CASE NARRATIVE

AETL received 10 samples with the following specification on 03/17/2017.

Lab ID	Sample ID	Sample Date	Matrix	Quantity Of Containers
87042.01	SV-21	03/17/2017	Gaseous	1
87042.02	SV-14	03/17/2017	Gaseous	1
87042.03	SV-16	03/17/2017	Gaseous	1
87042.04	SV-15	03/17/2017	Gaseous	1
87042.05	SV-17	03/17/2017	Gaseous	1
87042.06	SV-18	03/17/2017	Gaseous	1
87042.07	SV-10	03/17/2017	Gaseous	1
87042.08	SV-1	03/17/2017	Gaseous	1
87042.09	SVB2-5	03/17/2017	Gaseous	1
87042.10	DUPLICATE 1	03/17/2017	Gaseous	1

Method ^ Submethod	*Req Date*	*Priority*	*TAT*	*Units*
EPA-18 ^ UG/M3	03/24/2017	2	Normal	ug/m3
TO-15 ^ UG/M3-1	03/24/2017	2	Normal	ug/m3

The samples were analyzed as specified on the enclosed chain of custody.
No analytical non-conformances were encountered.

Checked By: _____ Approved By: C. Razmara

Cyrus Razmara, Ph.D.
Laboratory Director

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ANALYTICAL RESULTS

Ordered By

ERM-West, Inc.
1920 Main Street
Suite 300
Irvine, CA 92614-

Telephone: (949)623-4700
Attn: Marlene Dawes
Page: **2**

Site

1520 Grand Ave.
El Segundo, CA 90245

Project ID: INFINEON
Project Name: Infineon-El Segundo

AETL Job Number	Submitted	Client
87042	03/17/2017	ERM

Method: EPA-18, Methane by GC

QC Batch No: 032120177A

Our Lab I.D.			Method Blank	87042.01	87042.02	87042.03	87042.04
Client Sample I.D.				SV-21	SV-14	SV-16	SV-15
Date Sampled				03/17/2017	03/17/2017	03/17/2017	03/17/2017
Date Prepared			03/20/2017	03/20/2017	03/20/2017	03/20/2017	03/20/2017
Preparation Method			EPA-18	EPA-18	EPA-18	EPA-18	EPA-18
Date Analyzed			03/21/2017	03/21/2017	03/21/2017	03/21/2017	03/21/2017
Matrix			Gaseous	Gaseous	Gaseous	Gaseous	Gaseous
Units			ug/m3	ug/m3	ug/m3	ug/m3	ug/m3
Dilution Factor			1	1	1	1	1
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**	**Results**	**Results**
Methane	0.30	0.30	ND	ND	ND	ND	ND

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ANALYTICAL RESULTS

Ordered By

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1920 Main Street
Suite 300
Irvine, CA 92614-

Telephone: (949)623-4700
Attn: Marlene Dawes

Site

1520 Grand Ave.
El Segundo, CA 90245

Page: **3**

Project ID: INFINEON
Project Name: Infineon-El Segundo

AETL Job Number	Submitted	Client
87042	03/17/2017	ERM

Method: EPA-18, Methane by GC

QC Batch No: 032120177A

Our Lab I.D.			87042.05	87042.06	87042.07	87042.08	87042.09
Client Sample I.D.			SV-17	SV-18	SV-10	SV-1	SVB2-5
Date Sampled			03/17/2017	03/17/2017	03/17/2017	03/17/2017	03/17/2017
Date Prepared			03/20/2017	03/20/2017	03/20/2017	03/20/2017	03/20/2017
Preparation Method			EPA-18	EPA-18	EPA-18	EPA-18	EPA-18
Date Analyzed			03/21/2017	03/21/2017	03/21/2017	03/21/2017	03/21/2017
Matrix			Gaseous	Gaseous	Gaseous	Gaseous	Gaseous
Units			ug/m3	ug/m3	ug/m3	ug/m3	ug/m3
Dilution Factor			1	1	1	1	1
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**	**Results**	**Results**
Methane	0.30	0.30	ND	ND	ND	ND	ND

American Environmental Testing Laboratory Inc.
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ANALYTICAL RESULTS

Ordered By

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Irvine, CA 92614-

Telephone: (949)623-4700
Attn: Marlene Dawes
Page: **4**

Site

1520 Grand Ave.
El Segundo, CA 90245

Project ID: INFINEON
Project Name: Infineon-El Segundo

AETL Job Number	Submitted	Client
87042	03/17/2017	ERM

Method: EPA-18, Methane by GC

QC Batch No: 032120177A

Our Lab I.D.			87042.10				
Client Sample I.D.			DUPLICATE 1				
Date Sampled			03/17/2017				
Date Prepared			03/20/2017				
Preparation Method			EPA-18				
Date Analyzed			03/21/2017				
Matrix			Gaseous				
Units			ug/m3				
Dilution Factor			1				
Analytes	**MDL**	**PQL**	**Results**				
Methane	0.30	0.30	ND				

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Site

1520 Grand Ave.
El Segundo, CA 90245

Project ID: INFINEON
Project Name: Infineon-El Segundo

AETL Job Number	Submitted	Client
87042	03/17/2017	ERM

Method: TO-15, Volatile Organic Compounds (ug/m3)

QC Batch No: 0320177D2

Our Lab I.D.			Method Blank				
Client Sample I.D.							
Date Sampled							
Date Prepared			03/20/2017				
Preparation Method			TO-15				
Date Analyzed			03/20/2017				
Matrix			Gaseous				
Units			ug/m3				
Dilution Factor			1				
Analytes	**MDL**	**PQL**	**Results**				
1,2-Dichlorotetrafluoroethane (Freon114)	2.5	2.5	ND				
2-Methylpropane (Isobutane)	5.0	5.0	ND				
4-Ethyltoluene	5.0	5.0	ND				
Acetone	5.0	5.0	ND				
Benzene	1.0	1.0	ND				
Benzyl chloride	1.5	1.5	ND				
Bromodichloromethane	1.5	1.5	ND				
Bromoform	1.5	1.5	ND				
Bromomethane (Methyl bromide)	1.5	1.5	ND				
2-Butanone (MEK)	5.0	5.0	ND				
Carbon disulfide	1.5	1.5	ND				
Carbon tetrachloride	2.0	2.0	ND				
Chlorobenzene	1.0	1.0	ND				
Chloroethane	1.5	1.5	ND				
Chloroform (Trichloromethane)	1.5	1.5	ND				
Chloromethane (Methyl chloride)	1.0	1.0	ND				
3-Chloropropene (Allyl chloride)	1.5	1.5	ND				
Cyclohexane	1.0	1.0	ND				
Dibromochloromethane	1.5	1.5	ND				
1,2-Dibromoethane (EDB)	2.0	2.0	ND				
1,2-Dichlorobenzene	2.0	2.0	ND				
1,3-Dichlorobenzene	2.0	2.0	ND				
1,4-Dichlorobenzene	2.0	2.0	ND				
Dichlorodifluoromethane	2.0	2.0	ND				
1,1-Dichloroethane	1.5	1.5	ND				
1,2-Dichloroethane (EDC)	1.5	1.5	ND				
1,1-Dichloroethene	1.5	1.5	ND				

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ANALYTICAL RESULTS

Project ID: INFINEON
Project Name: Infineon-El Segundo

AETL Job Number	Submitted	Client
87042	03/17/2017	ERM

Method: TO-15, Volatile Organic Compounds (ug/m3)

QC Batch No: 0320177D2

Our Lab I.D.			Method Blank				
Client Sample I.D.							
Date Sampled							
Date Prepared			03/20/2017				
Preparation Method			TO-15				
Date Analyzed			03/20/2017				
Matrix			Gaseous				
Units			ug/m3				
Dilution Factor			1				
Analytes	**MDL**	**PQL**	**Results**				
cis-1,2-Dichloroethene	1.5	1.5	ND				
trans-1,2-Dichloroethene	1.5	1.5	ND				
1,2-Dichloropropane	1.5	1.5	ND				
cis-1,3-Dichloropropene	1.5	1.5	ND				
trans-1,3-Dichloropropene	1.5	1.5	ND				
1,4-Dioxane	1.0	1.0	ND				
Ethyl acetate	1.5	1.5	ND				
Ethylbenzene	1.5	1.5	ND				
Hexachlorobutadiene	6.0	6.0	ND				
n-Hexane	1.5	1.5	ND				
2-Hexanone	5.0	5.0	ND				
Isopropyl alcohol	5.0	5.0	ND				
4-Methyl-2-pentanone (MIBK)	5.0	5.0	ND				
Methylene chloride (DCM)	5.0	5.0	ND				
n-Heptane	1.5	1.5	ND				
Propene	1.5	1.5	ND				
Styrene	1.5	1.5	ND				
1,1,2,2-Tetrachloroethane	2.0	2.0	ND				
Tetrachloroethene	1.5	1.5	ND				
Tetrahydrofuran	1.5	1.5	ND				
Toluene (Methyl benzene)	1.0	1.0	ND				
1,2,4-Trichlorobenzene	1.0	1.0	ND				
1,1,1-Trichloroethane	1.5	1.5	ND				
1,1,2-Trichloroethane	1.5	1.5	ND				
Trichloroethene	1.5	1.5	ND				
Trichlorofluoromethane	2.0	2.0	ND				
Trichlorotrifluoroethane (Freon-113)	2.5	2.5	ND				
1,2,4-Trimethylbenzene	1.5	1.5	ND				
1,3,5-Trimethylbenzene	1.5	1.5	ND				
2,2,4-Trimethylpentane	1.5	1.5	ND				
Vinyl acetate	5.0	5.0	ND				
Vinyl bromide	1.5	1.5	ND				
Vinyl chloride (Chloroethene)	1.0	1.0	ND				
o-Xylene	1.0	1.0	ND				

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ANALYTICAL RESULTS

Project ID: INFINEON
Project Name: Infineon-El Segundo

AETL Job Number	Submitted	Client
87042	03/17/2017	ERM

Method: TO-15, Volatile Organic Compounds (ug/m3)

QC Batch No: 0320177D2

Our Lab I.D.			Method Blank				
Client Sample I.D.							
Date Sampled							
Date Prepared			03/20/2017				
Preparation Method			TO-15				
Date Analyzed			03/20/2017				
Matrix			Gaseous				
Units			ug/m3				
Dilution Factor			1				
Analytes	**MDL**	**PQL**	**Results**				
m,p-Xylenes	2.0	2.0	ND				
Our Lab I.D.			Method Blank				
Surrogates	**%Rec.Limit**		**% Rec.**				
4-Bromofluorobenzene	70-130		76.9				
1,2-Dichloroethane-d4	70-130		113				
Toluene-d8	70-130		106				

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Project ID: INFINEON
Project Name: Infineon-El Segundo

AETL Job Number	Submitted	Client
87042	03/17/2017	ERM

Method: TO-15, Volatile Organic Compounds (ug/m3)

QC Batch No: 0320177D2

Our Lab I.D.			87042.01				
Client Sample I.D.			SV-21				
Date Sampled			03/17/2017				
Date Prepared			03/20/2017				
Preparation Method			TO-15				
Date Analyzed			03/20/2017				
Matrix			Gaseous				
Units			ug/m3				
Dilution Factor			1				
Analytes	**MDL**	**PQL**	**Results**				
1,2-Dichlorotetrafluoroethane (Freon114)	2.5	2.5	ND				
2-Methylpropane (Isobutane)	5.0	5.0	ND				
4-Ethyltoluene	5.0	5.0	ND				
Acetone	5.0	5.0	ND				
Benzene	1.0	1.0	ND				
Benzyl chloride	1.5	1.5	ND				
Bromodichloromethane	1.5	1.5	ND				
Bromoform	1.5	1.5	ND				
Bromomethane (Methyl bromide)	1.5	1.5	ND				
2-Butanone (MEK)	5.0	5.0	ND				
Carbon disulfide	1.5	1.5	ND				
Carbon tetrachloride	2.0	2.0	ND				
Chlorobenzene	1.0	1.0	ND				
Chloroethane	1.5	1.5	ND				
Chloroform (Trichloromethane)	1.5	1.5	5.91				
Chloromethane (Methyl chloride)	1.0	1.0	ND				
3-Chloropropene (Allyl chloride)	1.5	1.5	ND				
Cyclohexane	1.0	1.0	ND				
Dibromochloromethane	1.5	1.5	ND				
1,2-Dibromoethane (EDB)	2.0	2.0	ND				
1,2-Dichlorobenzene	2.0	2.0	ND				
1,3-Dichlorobenzene	2.0	2.0	ND				
1,4-Dichlorobenzene	2.0	2.0	ND				
Dichlorodifluoromethane	2.0	2.0	ND				
1,1-Dichloroethane	1.5	1.5	ND				
1,2-Dichloroethane (EDC)	1.5	1.5	ND				
1,1-Dichloroethene	1.5	1.5	ND				

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ANALYTICAL RESULTS

Project ID: INFINEON
Project Name: Infineon-El Segundo

AETL Job Number	Submitted	Client
87042	03/17/2017	ERM

Method: TO-15, Volatile Organic Compounds (ug/m3)

QC Batch No: 0320177D2

Our Lab I.D.			87042.01				
Client Sample I.D.			SV-21				
Date Sampled			03/17/2017				
Date Prepared			03/20/2017				
Preparation Method			TO-15				
Date Analyzed			03/20/2017				
Matrix			Gaseous				
Units			ug/m3				
Dilution Factor			1				
Analytes	**MDL**	**PQL**	**Results**				
cis-1,2-Dichloroethene	1.5	1.5	ND				
trans-1,2-Dichloroethene	1.5	1.5	ND				
1,2-Dichloropropane	1.5	1.5	ND				
cis-1,3-Dichloropropene	1.5	1.5	ND				
trans-1,3-Dichloropropene	1.5	1.5	ND				
1,4-Dioxane	1.0	1.0	28.1				
Ethyl acetate	1.5	1.5	ND				
Ethylbenzene	1.5	1.5	ND				
Hexachlorobutadiene	6.0	6.0	ND				
n-Hexane	1.5	1.5	ND				
2-Hexanone	5.0	5.0	ND				
Isopropyl alcohol	5.0	5.0	ND				
4-Methyl-2-pentanone (MIBK)	5.0	5.0	ND				
Methylene chloride (DCM)	5.0	5.0	ND				
n-Heptane	1.5	1.5	ND				
Propene	1.5	1.5	ND				
Styrene	1.5	1.5	ND				
1,1,2,2-Tetrachloroethane	2.0	2.0	ND				
Tetrachloroethene	15	15	3,620				
Tetrahydrofuran	1.5	1.5	ND				
Toluene (Methyl benzene)	1.0	1.0	5.84				
1,2,4-Trichlorobenzene	1.0	1.0	ND				
1,1,1-Trichloroethane	1.5	1.5	ND				
1,1,2-Trichloroethane	1.5	1.5	ND				
Trichloroethene	1.5	1.5	356				
Trichlorofluoromethane	2.0	2.0	ND				
Trichlorotrifluoroethane (Freon-113)	2.5	2.5	ND				
1,2,4-Trimethylbenzene	1.5	1.5	ND				
1,3,5-Trimethylbenzene	1.5	1.5	ND				
2,2,4-Trimethylpentane	1.5	1.5	ND				
Vinyl acetate	5.0	5.0	ND				
Vinyl bromide	1.5	1.5	ND				
Vinyl chloride (Chloroethene)	1.0	1.0	ND				
o-Xylene	1.0	1.0	4.82				

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ANALYTICAL RESULTS

Project ID: INFINEON
Project Name: Infineon-El Segundo

AETL Job Number	Submitted	Client
87042	03/17/2017	ERM

Method: TO-15, Volatile Organic Compounds (ug/m3)

QC Batch No: 0320177D2

Our Lab I.D.			**87042.01**				
Client Sample I.D.			SV-21				
Date Sampled			03/17/2017				
Date Prepared			03/20/2017				
Preparation Method			TO-15				
Date Analyzed			03/20/2017				
Matrix			Gaseous				
Units			ug/m3				
Dilution Factor			1				
Analytes	**MDL**	**PQL**	**Results**				
m,p-Xylenes	2.0	2.0	13.0				
Our Lab I.D.			**87042.01**				
Surrogates	**%Rec.Limit**		**% Rec.**				
4-Bromofluorobenzene	70-130		86.6				
1,2-Dichloroethane-d4	70-130		83.1				
Toluene-d8	70-130		101				

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Project ID: INFINEON
Project Name: Infineon-El Segundo

AETL Job Number	Submitted	Client
87042	03/17/2017	ERM

Method: TO-15, Volatile Organic Compounds (ug/m3)

QC Batch No: 0320177D2

Our Lab I.D.			87042.02				
Client Sample I.D.			SV-14				
Date Sampled			03/17/2017				
Date Prepared			03/20/2017				
Preparation Method			TO-15				
Date Analyzed			03/20/2017				
Matrix			Gaseous				
Units			ug/m3				
Dilution Factor			2				
Analytes	**MDL**	**PQL**	**Results**				
1,2-Dichlorotetrafluoroethane (Freon114)	5	5	ND				
2-Methylpropane (Isobutane)	10	10	ND				
4-Ethyltoluene	10	10	ND				
Acetone	10	10	ND				
Benzene	2.0	2.0	ND				
Benzyl chloride	3.0	3.0	ND				
Bromodichloromethane	3.0	3.0	ND				
Bromoform	3.0	3.0	ND				
Bromomethane (Methyl bromide)	3.0	3.0	ND				
2-Butanone (MEK)	10	10	ND				
Carbon disulfide	3.0	3.0	ND				
Carbon tetrachloride	4.0	4.0	ND				
Chlorobenzene	2.0	2.0	ND				
Chloroethane	3.0	3.0	ND				
Chloroform (Trichloromethane)	3.0	3.0	11.1				
Chloromethane (Methyl chloride)	2.0	2.0	ND				
3-Chloropropene (Allyl chloride)	3.0	3.0	ND				
Cyclohexane	2.0	2.0	ND				
Dibromochloromethane	3.0	3.0	ND				
1,2-Dibromoethane (EDB)	4.0	4.0	ND				
1,2-Dichlorobenzene	4.0	4.0	ND				
1,3-Dichlorobenzene	4.0	4.0	ND				
1,4-Dichlorobenzene	4.0	4.0	ND				
Dichlorodifluoromethane	4.0	4.0	ND				
1,1-Dichloroethane	3.0	3.0	ND				
1,2-Dichloroethane (EDC)	3.0	3.0	ND				
1,1-Dichloroethene	3.0	3.0	ND				

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ANALYTICAL RESULTS

Project ID: INFINEON
Project Name: Infineon-El Segundo

AETL Job Number	Submitted	Client
87042	03/17/2017	ERM

Method: TO-15, Volatile Organic Compounds (ug/m3)

QC Batch No: 0320177D2

Our Lab I.D.			87042.02				
Client Sample I.D.			SV-14				
Date Sampled			03/17/2017				
Date Prepared			03/20/2017				
Preparation Method			TO-15				
Date Analyzed			03/20/2017				
Matrix			Gaseous				
Units			ug/m3				
Dilution Factor			2				
Analytes	**MDL**	**PQL**	**Results**				
cis-1,2-Dichloroethene	3.0	3.0	ND				
trans-1,2-Dichloroethene	3.0	3.0	ND				
1,2-Dichloropropane	3.0	3.0	ND				
cis-1,3-Dichloropropene	3.0	3.0	ND				
trans-1,3-Dichloropropene	3.0	3.0	ND				
1,4-Dioxane	2.0	2.0	ND				
Ethyl acetate	3.0	3.0	ND				
Ethylbenzene	3.0	3.0	ND				
Hexachlorobutadiene	12	12	ND				
n-Hexane	3.0	3.0	ND				
2-Hexanone	10	10	ND				
Isopropyl alcohol	10	10	ND				
4-Methyl-2-pentanone (MIBK)	10	10	ND				
Methylene chloride (DCM)	10	10	ND				
n-Heptane	3.0	3.0	ND				
Propene	3.0	3.0	ND				
Styrene	3.0	3.0	ND				
1,1,2,2-Tetrachloroethane	4.0	4.0	ND				
Tetrachloroethene	30	30	9,020				
Tetrahydrofuran	3.0	3.0	ND				
Toluene (Methyl benzene)	2.0	2.0	ND				
1,2,4-Trichlorobenzene	2.0	2.0	ND				
1,1,1-Trichloroethane	3.0	3.0	ND				
1,1,2-Trichloroethane	3.0	3.0	ND				
Trichloroethene	3.0	3.0	886				
Trichlorofluoromethane	4.0	4.0	ND				
Trichlorotrifluoroethane (Freon-113)	5	5	ND				
1,2,4-Trimethylbenzene	3.0	3.0	ND				
1,3,5-Trimethylbenzene	3.0	3.0	ND				
2,2,4-Trimethylpentane	3.0	3.0	ND				
Vinyl acetate	10	10	ND				
Vinyl bromide	3.0	3.0	ND				
Vinyl chloride (Chloroethene)	2.0	2.0	ND				
o-Xylene	2.0	2.0	ND				

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ANALYTICAL RESULTS

Project ID: INFINEON
Project Name: Infineon-El Segundo

AETL Job Number	Submitted	Client
87042	03/17/2017	ERM

Method: TO-15, Volatile Organic Compounds (ug/m3)

QC Batch No: 0320177D2

Our Lab I.D.			**87042.02**				
Client Sample I.D.			SV-14				
Date Sampled			03/17/2017				
Date Prepared			03/20/2017				
Preparation Method			TO-15				
Date Analyzed			03/20/2017				
Matrix			Gaseous				
Units			ug/m3				
Dilution Factor			2				
Analytes	**MDL**	**PQL**	**Results**				
m,p-Xylenes	4.0	4.0	ND				
Our Lab I.D.			**87042.02**				
Surrogates	**%Rec.Limit**		**% Rec.**				
4-Bromofluorobenzene	70-130		82.7				
1,2-Dichloroethane-d4	70-130		119				
Toluene-d8	70-130		105				

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Project ID: INFINEON
Project Name: Infineon-El Segundo

AETL Job Number	Submitted	Client
87042	03/17/2017	ERM

Method: TO-15, Volatile Organic Compounds (ug/m3)

QC Batch No: 0320177D2

Our Lab I.D.			87042.03				
Client Sample I.D.			SV-16				
Date Sampled			03/17/2017				
Date Prepared			03/20/2017				
Preparation Method			TO-15				
Date Analyzed			03/20/2017				
Matrix			Gaseous				
Units			ug/m3				
Dilution Factor			2				
Analytes	**MDL**	**PQL**	**Results**				
1,2-Dichlorotetrafluoroethane (Freon114)	5	5	ND				
2-Methylpropane (Isobutane)	10	10	ND				
4-Ethyltoluene	10	10	ND				
Acetone	10	10	ND				
Benzene	2.0	2.0	ND				
Benzyl chloride	3.0	3.0	ND				
Bromodichloromethane	3.0	3.0	ND				
Bromoform	3.0	3.0	ND				
Bromomethane (Methyl bromide)	3.0	3.0	ND				
2-Butanone (MEK)	10	10	ND				
Carbon disulfide	3.0	3.0	ND				
Carbon tetrachloride	4.0	4.0	ND				
Chlorobenzene	2.0	2.0	ND				
Chloroethane	3.0	3.0	ND				
Chloroform (Trichloromethane)	3.0	3.0	ND				
Chloromethane (Methyl chloride)	2.0	2.0	ND				
3-Chloropropene (Allyl chloride)	3.0	3.0	ND				
Cyclohexane	2.0	2.0	ND				
Dibromochloromethane	3.0	3.0	ND				
1,2-Dibromoethane (EDB)	4.0	4.0	ND				
1,2-Dichlorobenzene	4.0	4.0	ND				
1,3-Dichlorobenzene	4.0	4.0	ND				
1,4-Dichlorobenzene	4.0	4.0	ND				
Dichlorodifluoromethane	4.0	4.0	ND				
1,1-Dichloroethane	3.0	3.0	ND				
1,2-Dichloroethane (EDC)	3.0	3.0	ND				
1,1-Dichloroethene	3.0	3.0	ND				

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ANALYTICAL RESULTS

Project ID: INFINEON
Project Name: Infineon-El Segundo

AETL Job Number	Submitted	Client
87042	03/17/2017	ERM

Method: TO-15, Volatile Organic Compounds (ug/m3)

QC Batch No: 0320177D2

Our Lab I.D.			87042.03				
Client Sample I.D.			SV-16				
Date Sampled			03/17/2017				
Date Prepared			03/20/2017				
Preparation Method			TO-15				
Date Analyzed			03/20/2017				
Matrix			Gaseous				
Units			ug/m3				
Dilution Factor			2				
Analytes	**MDL**	**PQL**	**Results**				
cis-1,2-Dichloroethene	3.0	3.0	ND				
trans-1,2-Dichloroethene	3.0	3.0	ND				
1,2-Dichloropropane	3.0	3.0	ND				
cis-1,3-Dichloropropene	3.0	3.0	ND				
trans-1,3-Dichloropropene	3.0	3.0	ND				
1,4-Dioxane	2.0	2.0	ND				
Ethyl acetate	3.0	3.0	ND				
Ethylbenzene	3.0	3.0	ND				
Hexachlorobutadiene	12	12	ND				
n-Hexane	3.0	3.0	ND				
2-Hexanone	10	10	ND				
Isopropyl alcohol	10	10	ND				
4-Methyl-2-pentanone (MIBK)	10	10	ND				
Methylene chloride (DCM)	10	10	ND				
n-Heptane	3.0	3.0	ND				
Propene	3.0	3.0	ND				
Styrene	3.0	3.0	ND				
1,1,2,2-Tetrachloroethane	4.0	4.0	ND				
Tetrachloroethene	3.0	3.0	1,890				
Tetrahydrofuran	3.0	3.0	ND				
Toluene (Methyl benzene)	2.0	2.0	ND				
1,2,4-Trichlorobenzene	2.0	2.0	ND				
1,1,1-Trichloroethane	3.0	3.0	ND				
1,1,2-Trichloroethane	3.0	3.0	ND				
Trichloroethene	3.0	3.0	493				
Trichlorofluoromethane	4.0	4.0	ND				
Trichlorotrifluoroethane (Freon-113)	5	5	39.3				
1,2,4-Trimethylbenzene	3.0	3.0	ND				
1,3,5-Trimethylbenzene	3.0	3.0	ND				
2,2,4-Trimethylpentane	3.0	3.0	ND				
Vinyl acetate	10	10	ND				
Vinyl bromide	3.0	3.0	ND				
Vinyl chloride (Chloroethene)	2.0	2.0	ND				
o-Xylene	2.0	2.0	ND				

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ANALYTICAL RESULTS

Project ID: INFINEON
Project Name: Infineon-El Segundo

AETL Job Number	Submitted	Client
87042	03/17/2017	ERM

Method: TO-15, Volatile Organic Compounds (ug/m3)

QC Batch No: 0320177D2

Our Lab I.D.			**87042.03**				
Client Sample I.D.			SV-16				
Date Sampled			03/17/2017				
Date Prepared			03/20/2017				
Preparation Method			TO-15				
Date Analyzed			03/20/2017				
Matrix			Gaseous				
Units			ug/m3				
Dilution Factor			2				
Analytes	**MDL**	**PQL**	**Results**				
m,p-Xylenes	4.0	4.0	ND				
Our Lab I.D.			**87042.03**				
Surrogates	**%Rec.Limit**		**% Rec.**				
4-Bromofluorobenzene	70-130		80.9				
1,2-Dichloroethane-d4	70-130		129				
Toluene-d8	70-130		104				

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Project ID: INFINEON
Project Name: Infineon-El Segundo

AETL Job Number	Submitted	Client
87042	03/17/2017	ERM

Method: TO-15, Volatile Organic Compounds (ug/m3)

QC Batch No: 0320177D2

Our Lab I.D.			87042.04				
Client Sample I.D.			SV-15				
Date Sampled			03/17/2017				
Date Prepared			03/20/2017				
Preparation Method			TO-15				
Date Analyzed			03/20/2017				
Matrix			Gaseous				
Units			ug/m3				
Dilution Factor			2				
Analytes	**MDL**	**PQL**	**Results**				
1,2-Dichlorotetrafluoroethane (Freon114)	5	5	ND				
2-Methylpropane (Isobutane)	10	10	ND				
4-Ethyltoluene	10	10	ND				
Acetone	10	10	ND				
Benzene	2.0	2.0	ND				
Benzyl chloride	3.0	3.0	ND				
Bromodichloromethane	3.0	3.0	ND				
Bromoform	3.0	3.0	ND				
Bromomethane (Methyl bromide)	3.0	3.0	ND				
2-Butanone (MEK)	10	10	ND				
Carbon disulfide	3.0	3.0	ND				
Carbon tetrachloride	4.0	4.0	ND				
Chlorobenzene	2.0	2.0	ND				
Chloroethane	3.0	3.0	ND				
Chloroform (Trichloromethane)	3.0	3.0	ND				
Chloromethane (Methyl chloride)	2.0	2.0	ND				
3-Chloropropene (Allyl chloride)	3.0	3.0	ND				
Cyclohexane	2.0	2.0	ND				
Dibromochloromethane	3.0	3.0	ND				
1,2-Dibromoethane (EDB)	4.0	4.0	ND				
1,2-Dichlorobenzene	4.0	4.0	ND				
1,3-Dichlorobenzene	4.0	4.0	ND				
1,4-Dichlorobenzene	4.0	4.0	ND				
Dichlorodifluoromethane	4.0	4.0	ND				
1,1-Dichloroethane	3.0	3.0	ND				
1,2-Dichloroethane (EDC)	3.0	3.0	ND				
1,1-Dichloroethene	3.0	3.0	12.8				

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ANALYTICAL RESULTS

Project ID: INFINEON
Project Name: Infineon-El Segundo

AETL Job Number	Submitted	Client
87042	03/17/2017	ERM

Method: TO-15, Volatile Organic Compounds (ug/m3)

QC Batch No: 0320177D2

Our Lab I.D.			87042.04				
Client Sample I.D.			SV-15				
Date Sampled			03/17/2017				
Date Prepared			03/20/2017				
Preparation Method			TO-15				
Date Analyzed			03/20/2017				
Matrix			Gaseous				
Units			ug/m3				
Dilution Factor			2				
Analytes	**MDL**	**PQL**	**Results**				
cis-1,2-Dichloroethene	3.0	3.0	13.2				
trans-1,2-Dichloroethene	3.0	3.0	ND				
1,2-Dichloropropane	3.0	3.0	ND				
cis-1,3-Dichloropropene	3.0	3.0	ND				
trans-1,3-Dichloropropene	3.0	3.0	ND				
1,4-Dioxane	2.0	2.0	ND				
Ethyl acetate	3.0	3.0	ND				
Ethylbenzene	3.0	3.0	ND				
Hexachlorobutadiene	12	12	ND				
n-Hexane	3.0	3.0	ND				
2-Hexanone	10	10	ND				
Isopropyl alcohol	10	10	ND				
4-Methyl-2-pentanone (MIBK)	10	10	ND				
Methylene chloride (DCM)	10	10	ND				
n-Heptane	3.0	3.0	ND				
Propene	3.0	3.0	ND				
Styrene	3.0	3.0	ND				
1,1,2,2-Tetrachloroethane	4.0	4.0	ND				
Tetrachloroethene	30	30	3,570				
Tetrahydrofuran	3.0	3.0	ND				
Toluene (Methyl benzene)	2.0	2.0	ND				
1,2,4-Trichlorobenzene	2.0	2.0	ND				
1,1,1-Trichloroethane	3.0	3.0	ND				
1,1,2-Trichloroethane	3.0	3.0	ND				
Trichloroethene	3.0	3.0	1,290				
Trichlorofluoromethane	4.0	4.0	ND				
Trichlorotrifluoroethane (Freon-113)	5	5	128				
1,2,4-Trimethylbenzene	3.0	3.0	ND				
1,3,5-Trimethylbenzene	3.0	3.0	ND				
2,2,4-Trimethylpentane	3.0	3.0	ND				
Vinyl acetate	10	10	ND				
Vinyl bromide	3.0	3.0	ND				
Vinyl chloride (Chloroethene)	2.0	2.0	ND				
o-Xylene	2.0	2.0	ND				

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ANALYTICAL RESULTS

Project ID: INFINEON
Project Name: Infineon-El Segundo

AETL Job Number	Submitted	Client
87042	03/17/2017	ERM

Method: TO-15, Volatile Organic Compounds (ug/m3)

QC Batch No: 0320177D2

Our Lab I.D.			**87042.04**				
Client Sample I.D.			SV-15				
Date Sampled			03/17/2017				
Date Prepared			03/20/2017				
Preparation Method			TO-15				
Date Analyzed			03/20/2017				
Matrix			Gaseous				
Units			ug/m3				
Dilution Factor			2				
Analytes	**MDL**	**PQL**	**Results**				
m,p-Xylenes	4.0	4.0	ND				
Our Lab I.D.			**87042.04**				
Surrogates	**%Rec.Limit**		**% Rec.**				
4-Bromofluorobenzene	70-130		81.3				
1,2-Dichloroethane-d4	70-130		116				
Toluene-d8	70-130		104				

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Project ID: INFINEON
Project Name: Infineon-El Segundo

AETL Job Number	Submitted	Client
87042	03/17/2017	ERM

Method: TO-15, Volatile Organic Compounds (ug/m3)

QC Batch No: 0320177D2

Our Lab I.D.			**87042.05**				
Client Sample I.D.			SV-17				
Date Sampled			03/17/2017				
Date Prepared			03/20/2017				
Preparation Method			TO-15				
Date Analyzed			03/20/2017				
Matrix			Gaseous				
Units			ug/m3				
Dilution Factor			2				
Analytes	**MDL**	**PQL**	**Results**				
1,2-Dichlorotetrafluoroethane (Freon114)	5	5	ND				
2-Methylpropane (Isobutane)	10	10	ND				
4-Ethyltoluene	10	10	ND				
Acetone	10	10	ND				
Benzene	2.0	2.0	ND				
Benzyl chloride	3.0	3.0	ND				
Bromodichloromethane	3.0	3.0	ND				
Bromoform	3.0	3.0	ND				
Bromomethane (Methyl bromide)	3.0	3.0	ND				
2-Butanone (MEK)	10	10	ND				
Carbon disulfide	3.0	3.0	ND				
Carbon tetrachloride	4.0	4.0	ND				
Chlorobenzene	2.0	2.0	ND				
Chloroethane	3.0	3.0	ND				
Chloroform (Trichloromethane)	3.0	3.0	ND				
Chloromethane (Methyl chloride)	2.0	2.0	ND				
3-Chloropropene (Allyl chloride)	3.0	3.0	ND				
Cyclohexane	2.0	2.0	ND				
Dibromochloromethane	3.0	3.0	ND				
1,2-Dibromoethane (EDB)	4.0	4.0	ND				
1,2-Dichlorobenzene	4.0	4.0	ND				
1,3-Dichlorobenzene	4.0	4.0	ND				
1,4-Dichlorobenzene	4.0	4.0	ND				
Dichlorodifluoromethane	4.0	4.0	ND				
1,1-Dichloroethane	3.0	3.0	ND				
1,2-Dichloroethane (EDC)	3.0	3.0	ND				
1,1-Dichloroethene	3.0	3.0	8.28				

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ANALYTICAL RESULTS

Project ID: INFINEON
Project Name: Infineon-El Segundo

AETL Job Number	Submitted	Client
87042	03/17/2017	ERM

Method: TO-15, Volatile Organic Compounds (ug/m3)

QC Batch No: 0320177D2

Our Lab I.D.			87042.05				
Client Sample I.D.			SV-17				
Date Sampled			03/17/2017				
Date Prepared			03/20/2017				
Preparation Method			TO-15				
Date Analyzed			03/20/2017				
Matrix			Gaseous				
Units			ug/m3				
Dilution Factor			2				
Analytes	**MDL**	**PQL**	**Results**				
cis-1,2-Dichloroethene	3.0	3.0	ND				
trans-1,2-Dichloroethene	3.0	3.0	ND				
1,2-Dichloropropane	3.0	3.0	ND				
cis-1,3-Dichloropropene	3.0	3.0	ND				
trans-1,3-Dichloropropene	3.0	3.0	ND				
1,4-Dioxane	2.0	2.0	ND				
Ethyl acetate	3.0	3.0	ND				
Ethylbenzene	3.0	3.0	ND				
Hexachlorobutadiene	12	12	ND				
n-Hexane	3.0	3.0	ND				
2-Hexanone	10	10	ND				
Isopropyl alcohol	10	10	ND				
4-Methyl-2-pentanone (MIBK)	10	10	ND				
Methylene chloride (DCM)	10	10	ND				
n-Heptane	3.0	3.0	ND				
Propene	3.0	3.0	ND				
Styrene	3.0	3.0	ND				
1,1,2,2-Tetrachloroethane	4.0	4.0	ND				
Tetrachloroethene	3.0	3.0	1,630				
Tetrahydrofuran	3.0	3.0	ND				
Toluene (Methyl benzene)	2.0	2.0	ND				
1,2,4-Trichlorobenzene	2.0	2.0	ND				
1,1,1-Trichloroethane	3.0	3.0	ND				
1,1,2-Trichloroethane	3.0	3.0	ND				
Trichloroethene	3.0	3.0	794				
Trichlorofluoromethane	4.0	4.0	ND				
Trichlorotrifluoroethane (Freon-113)	5	5	142				
1,2,4-Trimethylbenzene	3.0	3.0	ND				
1,3,5-Trimethylbenzene	3.0	3.0	ND				
2,2,4-Trimethylpentane	3.0	3.0	ND				
Vinyl acetate	10	10	ND				
Vinyl bromide	3.0	3.0	ND				
Vinyl chloride (Chloroethene)	2.0	2.0	ND				
o-Xylene	2.0	2.0	ND				

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ANALYTICAL RESULTS

Project ID: INFINEON
Project Name: Infineon-El Segundo

AETL Job Number	Submitted	Client
87042	03/17/2017	ERM

Method: TO-15, Volatile Organic Compounds (ug/m3)

QC Batch No: 0320177D2

Our Lab I.D.			**87042.05**				
Client Sample I.D.			SV-17				
Date Sampled			03/17/2017				
Date Prepared			03/20/2017				
Preparation Method			TO-15				
Date Analyzed			03/20/2017				
Matrix			Gaseous				
Units			ug/m3				
Dilution Factor			2				
Analytes	**MDL**	**PQL**	**Results**				
m,p-Xylenes	4.0	4.0	ND				
Our Lab I.D.			**87042.05**				
Surrogates	**%Rec.Limit**		**% Rec.**				
4-Bromofluorobenzene	70-130		82.6				
1,2-Dichloroethane-d4	70-130		102				
Toluene-d8	70-130		104				

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Project ID: INFINEON
Project Name: Infineon-El Segundo

AETL Job Number	Submitted	Client
87042	03/17/2017	ERM

Method: TO-15, Volatile Organic Compounds (ug/m3)

QC Batch No: 0320177D2

Our Lab I.D.			87042.06				
Client Sample I.D.			SV-18				
Date Sampled			03/17/2017				
Date Prepared			03/20/2017				
Preparation Method			TO-15				
Date Analyzed			03/20/2017				
Matrix			Gaseous				
Units			ug/m3				
Dilution Factor			2				
Analytes	**MDL**	**PQL**	**Results**				
1,2-Dichlorotetrafluoroethane (Freon114)	5	5	ND				
2-Methylpropane (Isobutane)	10	10	ND				
4-Ethyltoluene	10	10	ND				
Acetone	10	10	ND				
Benzene	2.0	2.0	ND				
Benzyl chloride	3.0	3.0	ND				
Bromodichloromethane	3.0	3.0	ND				
Bromoform	3.0	3.0	ND				
Bromomethane (Methyl bromide)	3.0	3.0	ND				
2-Butanone (MEK)	10	10	ND				
Carbon disulfide	3.0	3.0	ND				
Carbon tetrachloride	4.0	4.0	ND				
Chlorobenzene	2.0	2.0	ND				
Chloroethane	3.0	3.0	ND				
Chloroform (Trichloromethane)	3.0	3.0	ND				
Chloromethane (Methyl chloride)	2.0	2.0	ND				
3-Chloropropene (Allyl chloride)	3.0	3.0	ND				
Cyclohexane	2.0	2.0	ND				
Dibromochloromethane	3.0	3.0	ND				
1,2-Dibromoethane (EDB)	4.0	4.0	ND				
1,2-Dichlorobenzene	4.0	4.0	ND				
1,3-Dichlorobenzene	4.0	4.0	ND				
1,4-Dichlorobenzene	4.0	4.0	ND				
Dichlorodifluoromethane	4.0	4.0	ND				
1,1-Dichloroethane	3.0	3.0	ND				
1,2-Dichloroethane (EDC)	3.0	3.0	ND				
1,1-Dichloroethene	3.0	3.0	ND				

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ANALYTICAL RESULTS

Project ID: INFINEON
Project Name: Infineon-El Segundo

AETL Job Number	Submitted	Client
87042	03/17/2017	ERM

Method: TO-15, Volatile Organic Compounds (ug/m3)

QC Batch No: 0320177D2

Our Lab I.D.			87042.06				
Client Sample I.D.			SV-18				
Date Sampled			03/17/2017				
Date Prepared			03/20/2017				
Preparation Method			TO-15				
Date Analyzed			03/20/2017				
Matrix			Gaseous				
Units			ug/m3				
Dilution Factor			2				
Analytes	**MDL**	**PQL**	**Results**				
cis-1,2-Dichloroethene	3.0	3.0	ND				
trans-1,2-Dichloroethene	3.0	3.0	ND				
1,2-Dichloropropane	3.0	3.0	ND				
cis-1,3-Dichloropropene	3.0	3.0	ND				
trans-1,3-Dichloropropene	3.0	3.0	ND				
1,4-Dioxane	2.0	2.0	ND				
Ethyl acetate	3.0	3.0	ND				
Ethylbenzene	3.0	3.0	ND				
Hexachlorobutadiene	12	12	ND				
n-Hexane	3.0	3.0	ND				
2-Hexanone	10	10	ND				
Isopropyl alcohol	10	10	ND				
4-Methyl-2-pentanone (MIBK)	10	10	ND				
Methylene chloride (DCM)	10	10	ND				
n-Heptane	3.0	3.0	ND				
Propene	3.0	3.0	ND				
Styrene	3.0	3.0	ND				
1,1,2,2-Tetrachloroethane	4.0	4.0	ND				
Tetrachloroethene	30	30	4,690				
Tetrahydrofuran	3.0	3.0	ND				
Toluene (Methyl benzene)	2.0	2.0	ND				
1,2,4-Trichlorobenzene	2.0	2.0	ND				
1,1,1-Trichloroethane	3.0	3.0	ND				
1,1,2-Trichloroethane	3.0	3.0	ND				
Trichloroethene	3.0	3.0	2,080				
Trichlorofluoromethane	4.0	4.0	ND				
Trichlorotrifluoroethane (Freon-113)	5	5	212				
1,2,4-Trimethylbenzene	3.0	3.0	ND				
1,3,5-Trimethylbenzene	3.0	3.0	ND				
2,2,4-Trimethylpentane	3.0	3.0	ND				
Vinyl acetate	10	10	ND				
Vinyl bromide	3.0	3.0	ND				
Vinyl chloride (Chloroethene)	2.0	2.0	ND				
o-Xylene	2.0	2.0	ND				

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ANALYTICAL RESULTS

Project ID: INFINEON
Project Name: Infineon-El Segundo

AETL Job Number	Submitted	Client
87042	03/17/2017	ERM

Method: TO-15, Volatile Organic Compounds (ug/m3)

QC Batch No: 0320177D2

Our Lab I.D.			**87042.06**				
Client Sample I.D.			SV-18				
Date Sampled			03/17/2017				
Date Prepared			03/20/2017				
Preparation Method			TO-15				
Date Analyzed			03/20/2017				
Matrix			Gaseous				
Units			ug/m3				
Dilution Factor			2				
Analytes	**MDL**	**PQL**	**Results**				
m,p-Xylenes	4.0	4.0	8.20				
Our Lab I.D.			**87042.06**				
Surrogates	**%Rec.Limit**		**% Rec.**				
4-Bromofluorobenzene	70-130		80.2				
1,2-Dichloroethane-d4	70-130		118				
Toluene-d8	70-130		102				

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ANALYTICAL RESULTS

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1520 Grand Ave.
El Segundo, CA 90245

Project ID: INFINEON
Project Name: Infineon-El Segundo

AETL Job Number	Submitted	Client
87042	03/17/2017	ERM

Method: TO-15, Volatile Organic Compounds (ug/m3)

QC Batch No: 0320177D2

Our Lab I.D.			87042.07				
Client Sample I.D.			SV-10				
Date Sampled			03/17/2017				
Date Prepared			03/20/2017				
Preparation Method			TO-15				
Date Analyzed			03/20/2017				
Matrix			Gaseous				
Units			ug/m3				
Dilution Factor			2				
Analytes	**MDL**	**PQL**	**Results**				
1,2-Dichlorotetrafluoroethane (Freon114)	5	5	ND				
2-Methylpropane (Isobutane)	10	10	ND				
4-Ethyltoluene	10	10	ND				
Acetone	10	10	ND				
Benzene	2.0	2.0	ND				
Benzyl chloride	3.0	3.0	ND				
Bromodichloromethane	3.0	3.0	ND				
Bromoform	3.0	3.0	ND				
Bromomethane (Methyl bromide)	3.0	3.0	ND				
2-Butanone (MEK)	10	10	ND				
Carbon disulfide	3.0	3.0	ND				
Carbon tetrachloride	4.0	4.0	ND				
Chlorobenzene	2.0	2.0	ND				
Chloroethane	3.0	3.0	ND				
Chloroform (Trichloromethane)	3.0	3.0	11.9				
Chloromethane (Methyl chloride)	2.0	2.0	ND				
3-Chloropropene (Allyl chloride)	3.0	3.0	ND				
Cyclohexane	2.0	2.0	ND				
Dibromochloromethane	3.0	3.0	ND				
1,2-Dibromoethane (EDB)	4.0	4.0	ND				
1,2-Dichlorobenzene	4.0	4.0	ND				
1,3-Dichlorobenzene	4.0	4.0	ND				
1,4-Dichlorobenzene	4.0	4.0	ND				
Dichlorodifluoromethane	4.0	4.0	ND				
1,1-Dichloroethane	3.0	3.0	ND				
1,2-Dichloroethane (EDC)	3.0	3.0	ND				
1,1-Dichloroethene	3.0	3.0	ND				

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ANALYTICAL RESULTS

Project ID: INFINEON
Project Name: Infineon-El Segundo

AETL Job Number	Submitted	Client
87042	03/17/2017	ERM

Method: TO-15, Volatile Organic Compounds (ug/m3)

QC Batch No: 0320177D2

Our Lab I.D.			87042.07				
Client Sample I.D.			SV-10				
Date Sampled			03/17/2017				
Date Prepared			03/20/2017				
Preparation Method			TO-15				
Date Analyzed			03/20/2017				
Matrix			Gaseous				
Units			ug/m3				
Dilution Factor			2				
Analytes	**MDL**	**PQL**	**Results**				
cis-1,2-Dichloroethene	3.0	3.0	ND				
trans-1,2-Dichloroethene	3.0	3.0	ND				
1,2-Dichloropropane	3.0	3.0	ND				
cis-1,3-Dichloropropene	3.0	3.0	ND				
trans-1,3-Dichloropropene	3.0	3.0	ND				
1,4-Dioxane	2.0	2.0	ND				
Ethyl acetate	3.0	3.0	ND				
Ethylbenzene	3.0	3.0	ND				
Hexachlorobutadiene	12	12	ND				
n-Hexane	3.0	3.0	ND				
2-Hexanone	10	10	ND				
Isopropyl alcohol	10	10	ND				
4-Methyl-2-pentanone (MIBK)	10	10	ND				
Methylene chloride (DCM)	10	10	ND				
n-Heptane	3.0	3.0	ND				
Propene	3.0	3.0	ND				
Styrene	3.0	3.0	ND				
1,1,2,2-Tetrachloroethane	4.0	4.0	ND				
Tetrachloroethene	210	210	76,300				
Tetrahydrofuran	3.0	3.0	ND				
Toluene (Methyl benzene)	2.0	2.0	9.57				
1,2,4-Trichlorobenzene	2.0	2.0	ND				
1,1,1-Trichloroethane	3.0	3.0	ND				
1,1,2-Trichloroethane	3.0	3.0	ND				
Trichloroethene	3.0	3.0	574				
Trichlorofluoromethane	4.0	4.0	13.0				
Trichlorotrifluoroethane (Freon-113)	5	5	188				
1,2,4-Trimethylbenzene	3.0	3.0	ND				
1,3,5-Trimethylbenzene	3.0	3.0	ND				
2,2,4-Trimethylpentane	3.0	3.0	ND				
Vinyl acetate	10	10	ND				
Vinyl bromide	3.0	3.0	ND				
Vinyl chloride (Chloroethene)	2.0	2.0	ND				
o-Xylene	2.0	2.0	ND				

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ANALYTICAL RESULTS

Project ID: INFINEON
Project Name: Infineon-El Segundo

AETL Job Number	Submitted	Client
87042	03/17/2017	ERM

Method: TO-15, Volatile Organic Compounds (ug/m3)

QC Batch No: 0320177D2

Our Lab I.D.			**87042.07**				
Client Sample I.D.			SV-10				
Date Sampled			03/17/2017				
Date Prepared			03/20/2017				
Preparation Method			TO-15				
Date Analyzed			03/20/2017				
Matrix			Gaseous				
Units			ug/m3				
Dilution Factor			2				
Analytes	**MDL**	**PQL**	**Results**				
m,p-Xylenes	4.0	4.0	8.38				
Our Lab I.D.			**87042.07**				
Surrogates	**%Rec.Limit**		**% Rec.**				
4-Bromofluorobenzene	70-130		98.0				
1,2-Dichloroethane-d4	70-130		104				
Toluene-d8	70-130		116				

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1520 Grand Ave.
El Segundo, CA 90245

Project ID: INFINEON
Project Name: Infineon-El Segundo

AETL Job Number	Submitted	Client
87042	03/17/2017	ERM

Method: TO-15, Volatile Organic Compounds (ug/m3)

QC Batch No: 0320177D2

Our Lab I.D.			87042.08				
Client Sample I.D.			SV-1				
Date Sampled			03/17/2017				
Date Prepared			03/20/2017				
Preparation Method			TO-15				
Date Analyzed			03/20/2017				
Matrix			Gaseous				
Units			ug/m3				
Dilution Factor			2				
Analytes	**MDL**	**PQL**	**Results**				
1,2-Dichlorotetrafluoroethane (Freon114)	5	5	ND				
2-Methylpropane (Isobutane)	10	10	ND				
4-Ethyltoluene	10	10	ND				
Acetone	10	10	ND				
Benzene	2.0	2.0	ND				
Benzyl chloride	3.0	3.0	ND				
Bromodichloromethane	3.0	3.0	ND				
Bromoform	3.0	3.0	ND				
Bromomethane (Methyl bromide)	3.0	3.0	ND				
2-Butanone (MEK)	10	10	ND				
Carbon disulfide	3.0	3.0	ND				
Carbon tetrachloride	4.0	4.0	ND				
Chlorobenzene	2.0	2.0	ND				
Chloroethane	3.0	3.0	ND				
Chloroform (Trichloromethane)	3.0	3.0	ND				
Chloromethane (Methyl chloride)	2.0	2.0	ND				
3-Chloropropene (Allyl chloride)	3.0	3.0	ND				
Cyclohexane	2.0	2.0	ND				
Dibromochloromethane	3.0	3.0	ND				
1,2-Dibromoethane (EDB)	4.0	4.0	ND				
1,2-Dichlorobenzene	4.0	4.0	ND				
1,3-Dichlorobenzene	4.0	4.0	ND				
1,4-Dichlorobenzene	4.0	4.0	ND				
Dichlorodifluoromethane	4.0	4.0	ND				
1,1-Dichloroethane	3.0	3.0	ND				
1,2-Dichloroethane (EDC)	3.0	3.0	ND				
1,1-Dichloroethene	3.0	3.0	ND				

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ANALYTICAL RESULTS

Project ID: INFINEON
Project Name: Infineon-El Segundo

AETL Job Number	Submitted	Client
87042	03/17/2017	ERM

Method: TO-15, Volatile Organic Compounds (ug/m3)

QC Batch No: 0320177D2

Our Lab I.D.			87042.08				
Client Sample I.D.			SV-1				
Date Sampled			03/17/2017				
Date Prepared			03/20/2017				
Preparation Method			TO-15				
Date Analyzed			03/20/2017				
Matrix			Gaseous				
Units			ug/m3				
Dilution Factor			2				
Analytes	**MDL**	**PQL**	**Results**				
cis-1,2-Dichloroethene	3.0	3.0	ND				
trans-1,2-Dichloroethene	3.0	3.0	ND				
1,2-Dichloropropane	3.0	3.0	ND				
cis-1,3-Dichloropropene	3.0	3.0	ND				
trans-1,3-Dichloropropene	3.0	3.0	ND				
1,4-Dioxane	2.0	2.0	ND				
Ethyl acetate	3.0	3.0	ND				
Ethylbenzene	3.0	3.0	10.4				
Hexachlorobutadiene	12	12	ND				
n-Hexane	3.0	3.0	ND				
2-Hexanone	10	10	ND				
Isopropyl alcohol	10	10	ND				
4-Methyl-2-pentanone (MIBK)	10	10	ND				
Methylene chloride (DCM)	10	10	ND				
n-Heptane	3.0	3.0	ND				
Propene	3.0	3.0	ND				
Styrene	3.0	3.0	ND				
1,1,2,2-Tetrachloroethane	4.0	4.0	ND				
Tetrachloroethene	3.0	3.0	1,560				
Tetrahydrofuran	3.0	3.0	ND				
Toluene (Methyl benzene)	2.0	2.0	8.63				
1,2,4-Trichlorobenzene	2.0	2.0	ND				
1,1,1-Trichloroethane	3.0	3.0	ND				
1,1,2-Trichloroethane	3.0	3.0	ND				
Trichloroethene	3.0	3.0	23.6				
Trichlorofluoromethane	4.0	4.0	ND				
Trichlorotrifluoroethane (Freon-113)	5	5	ND				
1,2,4-Trimethylbenzene	3.0	3.0	20.5				
1,3,5-Trimethylbenzene	3.0	3.0	9.29				
2,2,4-Trimethylpentane	3.0	3.0	ND				
Vinyl acetate	10	10	ND				
Vinyl bromide	3.0	3.0	ND				
Vinyl chloride (Chloroethene)	2.0	2.0	ND				
o-Xylene	2.0	2.0	18.4				

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ANALYTICAL RESULTS

Project ID: INFINEON
Project Name: Infineon-El Segundo

AETL Job Number	Submitted	Client
87042	03/17/2017	ERM

Method: TO-15, Volatile Organic Compounds (ug/m3)

QC Batch No: 0320177D2

Our Lab I.D.			**87042.08**				
Client Sample I.D.			SV-1				
Date Sampled			03/17/2017				
Date Prepared			03/20/2017				
Preparation Method			TO-15				
Date Analyzed			03/20/2017				
Matrix			Gaseous				
Units			ug/m3				
Dilution Factor			2				
Analytes	**MDL**	**PQL**	**Results**				
m,p-Xylenes	4.0	4.0	45.9				
Our Lab I.D.			**87042.08**				
Surrogates	**%Rec.Limit**		**% Rec.**				
4-Bromofluorobenzene	70-130		82.5				
1,2-Dichloroethane-d4	70-130		115				
Toluene-d8	70-130		104				

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Project ID: INFINEON
Project Name: Infineon-El Segundo

AETL Job Number	Submitted	Client
87042	03/17/2017	ERM

Method: TO-15, Volatile Organic Compounds (ug/m3)

QC Batch No: 0320177D2

Our Lab I.D.			87042.09	87042.10			
Client Sample I.D.			SVB2-5	DUPLICATE 1			
Date Sampled			03/17/2017	03/17/2017			
Date Prepared			03/20/2017	03/20/2017			
Preparation Method			TO-15	TO-15			
Date Analyzed			03/20/2017	03/20/2017			
Matrix			Gaseous	Gaseous			
Units			ug/m3	ug/m3			
Dilution Factor			2	2			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
1,2-Dichlorotetrafluoroethane (Freon114)	5	5	ND	ND			
2-Methylpropane (Isobutane)	10	10	ND	ND			
4-Ethyltoluene	10	10	ND	ND			
Acetone	10	10	164	205			
Benzene	2.0	2.0	ND	ND			
Benzyl chloride	3.0	3.0	ND	ND			
Bromodichloromethane	3.0	3.0	ND	ND			
Bromoform	3.0	3.0	ND	ND			
Bromomethane (Methyl bromide)	3.0	3.0	ND	ND			
2-Butanone (MEK)	10	10	ND	ND			
Carbon disulfide	3.0	3.0	ND	ND			
Carbon tetrachloride	4.0	4.0	ND	ND			
Chlorobenzene	2.0	2.0	ND	ND			
Chloroethane	3.0	3.0	ND	ND			
Chloroform (Trichloromethane)	3.0	3.0	27.1	25.6			
Chloromethane (Methyl chloride)	2.0	2.0	ND	ND			
3-Chloropropene (Allyl chloride)	3.0	3.0	ND	ND			
Cyclohexane	2.0	2.0	ND	ND			
Dibromochloromethane	3.0	3.0	ND	ND			
1,2-Dibromoethane (EDB)	4.0	4.0	ND	ND			
1,2-Dichlorobenzene	4.0	4.0	ND	ND			
1,3-Dichlorobenzene	4.0	4.0	ND	ND			
1,4-Dichlorobenzene	4.0	4.0	ND	ND			
Dichlorodifluoromethane	4.0	4.0	ND	ND			
1,1-Dichloroethane	3.0	3.0	ND	ND			
1,2-Dichloroethane (EDC)	3.0	3.0	ND	ND			

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ANALYTICAL RESULTS

Project ID: INFINEON
Project Name: Infineon-El Segundo

AETL Job Number	Submitted	Client
87042	03/17/2017	ERM

Method: TO-15, Volatile Organic Compounds (ug/m3)

QC Batch No: 0320177D2

Our Lab I.D.			87042.09	87042.10			
Client Sample I.D.			SVB2-5	DUPLICATE 1			
Date Sampled			03/17/2017	03/17/2017			
Date Prepared			03/20/2017	03/20/2017			
Preparation Method			TO-15	TO-15			
Date Analyzed			03/20/2017	03/20/2017			
Matrix			Gaseous	Gaseous			
Units			ug/m3	ug/m3			
Dilution Factor			2	2			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
1,1-Dichloroethene	3.0	3.0	44.8	37.8			
cis-1,2-Dichloroethene	3.0	3.0	ND	ND			
trans-1,2-Dichloroethene	3.0	3.0	ND	ND			
1,2-Dichloropropane	3.0	3.0	ND	ND			
cis-1,3-Dichloropropene	3.0	3.0	ND	ND			
trans-1,3-Dichloropropene	3.0	3.0	ND	ND			
1,4-Dioxane	2.0	2.0	ND	ND			
Ethyl acetate	3.0	3.0	ND	ND			
Ethylbenzene	3.0	3.0	11.5	9.33			
Hexachlorobutadiene	12	12	ND	ND			
n-Hexane	3.0	3.0	ND	ND			
2-Hexanone	10	10	ND	ND			
Isopropyl alcohol	10	10	ND	ND			
4-Methyl-2-pentanone (MIBK)	10	10	ND	ND			
Methylene chloride (DCM)	10	10	ND	ND			
n-Heptane	3.0	3.0	ND	ND			
Propene	3.0	3.0	ND	ND			
Styrene	3.0	3.0	ND	ND			
1,1,2,2-Tetrachloroethane	4.0	4.0	ND	ND			
Tetrachloroethene	210	210	28,500	29,500			
Tetrahydrofuran	3.0	3.0	ND	ND			
Toluene (Methyl benzene)	2.0	2.0	ND	ND			
1,2,4-Trichlorobenzene	2.0	2.0	ND	ND			
1,1,1-Trichloroethane	3.0	3.0	50.7	47.6			
1,1,2-Trichloroethane	3.0	3.0	ND	ND			
Trichloroethene	210	210	10,200	10,500			
Trichlorofluoromethane	4.0	4.0	33.7	31.1			
Trichlorotrifluoroethane (Freon-113)	5	5	106	97.3			
1,2,4-Trimethylbenzene	3.0	3.0	14.6	13.2			
1,3,5-Trimethylbenzene	3.0	3.0	ND	ND			
2,2,4-Trimethylpentane	3.0	3.0	ND	ND			
Vinyl acetate	10	10	ND	ND			
Vinyl bromide	3.0	3.0	ND	ND			

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ANALYTICAL RESULTS

Project ID: INFINEON
Project Name: Infineon-El Segundo

AETL Job Number	Submitted	Client
87042	03/17/2017	ERM

Method: TO-15, Volatile Organic Compounds (ug/m3)

QC Batch No: 0320177D2

Our Lab I.D.			87042.09	87042.10			
Client Sample I.D.			SVB2-5	DUPLICATE 1			
Date Sampled			03/17/2017	03/17/2017			
Date Prepared			03/20/2017	03/20/2017			
Preparation Method			TO-15	TO-15			
Date Analyzed			03/20/2017	03/20/2017			
Matrix			Gaseous	Gaseous			
Units			ug/m3	ug/m3			
Dilution Factor			2	2			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Vinyl chloride (Chloroethene)	2.0	2.0	ND	ND			
o-Xylene	2.0	2.0	29.9	25.0			
m,p-Xylenes	4.0	4.0	64.4	53.0			
Our Lab I.D.			**87042.09**	**87042.10**			
Surrogates	**%Rec.Limit**		**% Rec.**	**% Rec.**			
4-Bromofluorobenzene	70-130		81.0	81.4			
1,2-Dichloroethane-d4	70-130		109	119			
Toluene-d8	70-130		107	106			

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Project ID: INFINEON
Project Name: Infineon-El Segundo

AETL Job Number	Submitted	Client
87042	03/17/2017	ERM

Method: EPA-18, Methane by GC

QC Batch No: 032120177A; LCS: Blank; LCS Prepared: 03/20/2017; LCS Analyzed: 03/21/2017; Units: ug/m3

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit	
Methane	1.00	0.830	83.0	1.00	0.840	84.0	1.2	85-115	<25	

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QUALITY CONTROL RESULTS

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1520 Grand Ave.
El Segundo, CA 90245

Project ID: INFINEON
Project Name: Infineon-El Segundo

AETL Job Number	Submitted	Client
87042	03/17/2017	ERM

Method: TO-15, Volatile Organic Compounds (ug/m3)

QC Batch No: 0320177D2; LCS: Blank; LCS Prepared: 03/20/2017; LCS Analyzed: 03/20/2017; Units: ug/m3

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit	
1,1-Dichloroethene	10.0	10.5	105	10.0	12.4	124	16.6	70-130	<30	
Methylene chloride (DCM)	10.0	10.2	102	10.0	12.0	120	16.2	70-130	<30	
1,1,2,2-Tetrachloroethane	10.0	9.84	98.4	10.0	11.5	115	15.6	70-130	<30	
Toluene (Methyl benzene)	10.0	9.78	97.8	10.0	11.3	113	14.4	70-130	<30	
Trichloroethene	10.0	9.75	97.5	10.0	11.2	112	13.8	70-130	<30	
Surrogates										
4-Bromofluorobenzene	10.0	8.96	89.6	10.0	8.40	84.0	6.45	70-130	<30	
1,2-Dichloroethane-d4	10.0	12.1	121	10.0	12.0	120	<1	70-130	<30	
Toluene-d8	10.0	10.7	107	10.0	10.5	105	1.89	70-130	<30	

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Data Qualifiers and Descriptors

Data Qualifier:

#:	Recovery is not within acceptable control limits.
*:	In the QC section, sample results have been taken directly from the ICP reading. No preparation factor has been applied.
B:	Analyte was present in the Method Blank.
D:	Result is from a diluted analysis.
E:	Result is beyond calibration limits and is estimated.
H:	Analysis was performed over the allowed holding time due to circumstances which were beyond laboratory control.
J:	Analyte was detected . However, the analyte concentration is an estimated value, which is between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL).
M:	Matrix spike recovery is outside control limits due to matrix interference. Laboratory Control Sample recovery was acceptable.
MCL:	Maximum Contaminant Level
NS:	No Standard Available
S6:	Surrogate recovery is outside control limits due to matrix interference.
S8:	The analysis of the sample required a dilution such that the surrogate concentration was diluted below the method acceptance criteria.
X:	Results represent LCS and LCSD data.

Definition:

%Limi:	Percent acceptable limits.
%REC:	Percent recovery.
Con.L:	Acceptable Control Limits
Conce:	Added concentration to the sample.
LCS:	Laboratory Control Sample
MDL:	Method Detection Limit is a statistically derived number which is specific for each instrument, each method, and each compound. It indicates a distinctively detectable quantity with 99% probability.

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Data Qualifiers and Descriptors

MS:	Matrix Spike
MS DU:	Matrix Spike Duplicate
ND:	Analyte was not detected in the sample at or above MDL.
PQL:	Practical Quantitation Limit or ML (Minimum Level as per RWQCB) is the minimum concentration that can be quantified with more than 99% confidence. Taking into account all aspects of the entire analytical instrumentation and practice.
Recov:	Recovered concentration in the sample.
RPD:	Relative Percent Difference

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Client Project Name: Infineon Indoor Air Block 2 / 0397848
Work Order Number: 17-03-0951

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Work Order Narrative

Work Order: 17-03-0951 Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 03/13/17. They were assigned to Work Order 17-03-0951.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

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Sample Summary

Client:	ERM-WEST 1920 Main Street, Suite 300 Irvine, CA 92614-7279	Work Order:	17-03-0951
		Project Name:	Infineon Indoor Air Block 2 / 0397848
		PO Number:	0397848
		Date/Time Received:	03/13/17 16:38
		Number of Containers:	5
Attn:	Maggie Tymkow		

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
IA-01	17-03-0951-1	03/13/17 14:25	1	Air
IA-01D	17-03-0951-2	03/13/17 14:25	1	Air
IA-03	17-03-0951-3	03/13/17 14:24	1	Air
IA-08	17-03-0951-4	03/13/17 14:35	1	Air
IA-11	17-03-0951-5	03/13/17 14:33	1	Air

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Detections Summary

Client:	ERM-WEST	Work Order:	17-03-0951
	1920 Main Street, Suite 300	Project Name:	Infineon Indoor Air Block 2 / 0397848
	Irvine, CA 92614-7279	Received:	03/13/17
Attn:	Maggie Tymkow		Page 1 of 1

Client SampleID

Analyte	Result	Qualifiers	RL	Units	Method	Extraction
IA-01 (17-03-0951-1)						
Acetone	29		4.8	ug/m3	EPA TO-15	N/A
Benzene	1.7		1.6	ug/m3	EPA TO-15	N/A
Chloromethane	2.0		1.0	ug/m3	EPA TO-15	N/A
Dichlorodifluoromethane	3.0		2.5	ug/m3	EPA TO-15	N/A
1,1-Difluoroethane	9.8		5.4	ug/m3	EPA TO-15	N/A
Isopropanol	440		39	ug/m3	EPA TO-15	N/A
Toluene	4.0		1.9	ug/m3	EPA TO-15	N/A
IA-01D (17-03-0951-2)						
Acetone	28		4.8	ug/m3	EPA TO-15	N/A
Benzene	1.7		1.6	ug/m3	EPA TO-15	N/A
Chloromethane	1.9		1.0	ug/m3	EPA TO-15	N/A
Dichlorodifluoromethane	3.0		2.5	ug/m3	EPA TO-15	N/A
1,1-Difluoroethane	9.1		5.4	ug/m3	EPA TO-15	N/A
Isopropanol	450		39	ug/m3	EPA TO-15	N/A
Toluene	3.6		1.9	ug/m3	EPA TO-15	N/A
IA-03 (17-03-0951-3)						
Acetone	26		4.8	ug/m3	EPA TO-15	N/A
Benzene	1.7		1.6	ug/m3	EPA TO-15	N/A
Chloromethane	2.1		1.0	ug/m3	EPA TO-15	N/A
Dichlorodifluoromethane	3.1		2.5	ug/m3	EPA TO-15	N/A
Isopropanol	60		12	ug/m3	EPA TO-15	N/A
Toluene	3.8		1.9	ug/m3	EPA TO-15	N/A
IA-08 (17-03-0951-4)						
Acetone	21		4.8	ug/m3	EPA TO-15	N/A
Chloromethane	1.9		1.0	ug/m3	EPA TO-15	N/A
Dichlorodifluoromethane	3.5		2.5	ug/m3	EPA TO-15	N/A
Toluene	2.2		1.9	ug/m3	EPA TO-15	N/A
IA-11 (17-03-0951-5)						
Acetone	25		4.8	ug/m3	EPA TO-15	N/A
Chloromethane	2.0		1.0	ug/m3	EPA TO-15	N/A
Dichlorodifluoromethane	3.1		2.5	ug/m3	EPA TO-15	N/A
Toluene	3.3		1.9	ug/m3	EPA TO-15	N/A

Subcontracted analyses, if any, are not included in this summary.

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* MDL is shown

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/13/17
Work Order: 17-03-0951
Preparation: N/A
Method: ASTM D-1946
Units: ug/m3

Project: Infineon Indoor Air Block 2 / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-01	**17-03-0951-1-A**	**03/13/17 14:25**	**Air**	**GC 65**	**N/A**	**03/13/17 18:34**	**170313L01**

Parameter	Result	RL	DF	Qualifiers
Methane	ND	3280000	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-01D	**17-03-0951-2-A**	**03/13/17 14:25**	**Air**	**GC 65**	**N/A**	**03/13/17 19:01**	**170313L01**

Parameter	Result	RL	DF	Qualifiers
Methane	ND	3280000	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-03	**17-03-0951-3-A**	**03/13/17 14:24**	**Air**	**GC 65**	**N/A**	**03/13/17 19:20**	**170313L01**

Parameter	Result	RL	DF	Qualifiers
Methane	ND	3280000	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-08	**17-03-0951-4-A**	**03/13/17 14:35**	**Air**	**GC 65**	**N/A**	**03/13/17 19:40**	**170313L01**

Parameter	Result	RL	DF	Qualifiers
Methane	ND	3280000	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-11	**17-03-0951-5-A**	**03/13/17 14:33**	**Air**	**GC 65**	**N/A**	**03/13/17 19:58**	**170313L01**

Parameter	Result	RL	DF	Qualifiers
Methane	ND	3280000	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-16-444-564**	**N/A**	**Air**	**GC 65**	**N/A**	**03/13/17 13:57**	**170313L01**

Parameter	Result	RL	DF	Qualifiers
Methane	ND	3280000	1.00	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/13/17
Work Order: 17-03-0951
Preparation: N/A
Method: EPA TO-15
Units: ug/m3

Project: Infineon Indoor Air Block 2 / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-01	**17-03-0951-1-A**	**03/13/17 14:25**	**Air**	**GC/MS ZZ**	**N/A**	**03/14/17 01:47**	**170313L02**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	15	1.00	
Acetone	29	4.8	1.00	
Benzene	1.7	1.6	1.00	
Benzyl Chloride	ND	7.8	1.00	
Bromodichloromethane	ND	3.4	1.00	
Bromoform	ND	5.2	1.00	
Bromomethane	ND	1.9	1.00	
2-Butanone	ND	4.4	1.00	
n-Butylbenzene	ND	2.7	1.00	
sec-Butylbenzene	ND	2.7	1.00	
tert-Butylbenzene	ND	2.7	1.00	
Carbon Disulfide	ND	6.2	1.00	
Carbon Tetrachloride	ND	3.1	1.00	
Chlorobenzene	ND	2.3	1.00	
Chloroethane	ND	1.3	1.00	
Chloroform	ND	2.4	1.00	
Chloromethane	2.0	1.0	1.00	
Dibromochloromethane	ND	4.3	1.00	
1,2-Dibromoethane	ND	3.8	1.00	
1,2-Dichlorobenzene	ND	3.0	1.00	
1,3-Dichlorobenzene	ND	3.0	1.00	
1,4-Dichlorobenzene	ND	3.0	1.00	
Dichlorodifluoromethane	3.0	2.5	1.00	
1,1-Dichloroethane	ND	2.0	1.00	
1,2-Dichloroethane	ND	2.0	1.00	
1,1-Dichloroethene	ND	2.0	1.00	
c-1,2-Dichloroethene	ND	2.0	1.00	
t-1,2-Dichloroethene	ND	2.0	1.00	
1,2-Dichloropropane	ND	2.3	1.00	
c-1,3-Dichloropropene	ND	2.3	1.00	
t-1,3-Dichloropropene	ND	4.5	1.00	
Dichlorotetrafluoroethane	ND	14	1.00	
1,1-Difluoroethane	9.8	5.4	1.00	
Ethylbenzene	ND	2.2	1.00	
4-Ethyltoluene	ND	2.5	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/13/17
1920 Main Street, Suite 300		Work Order:	17-03-0951
Irvine, CA 92614-7279		Preparation:	N/A
		Method:	EPA TO-15
		Units:	ug/m3
Project: Infineon Indoor Air Block 2 / 0397848			Page 2 of 12

Parameter	Result	RL	DF	Qualifiers
Hexachloro-1,3-Butadiene	ND	16	1.00	
2-Hexanone	ND	6.1	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	7.2	1.00	
Methylene Chloride	ND	17	1.00	
4-Methyl-2-Pentanone	ND	6.1	1.00	
Styrene	ND	6.4	1.00	
1,1,2,2-Tetrachloroethane	ND	6.9	1.00	
Tetrachloroethene	ND	3.4	1.00	
Toluene	4.0	1.9	1.00	
1,1,1-Trichloroethane	ND	2.7	1.00	
1,1,2-Trichloroethane	ND	2.7	1.00	
Trichloroethene	ND	2.7	1.00	
Trichlorofluoromethane	ND	5.6	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	11	1.00	
1,2,4-Trimethylbenzene	ND	7.4	1.00	
1,3,5-Trimethylbenzene	ND	2.5	1.00	
Vinyl Acetate	ND	7.0	1.00	
Vinyl Chloride	ND	1.3	1.00	
o-Xylene	ND	2.2	1.00	
p/m-Xylene	ND	8.7	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	101	68-134	
1,2-Dichloroethane-d4	104	67-133	
Toluene-d8	95	70-130	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-01	**17-03-0951-1-A**	**03/13/17 14:25**	**Air**	**GC/MS ZZ**	**N/A**	**03/14/17 18:28**	**170314L01**

Parameter	Result	RL	DF	Qualifiers
Isopropanol	440	39	3.20	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	93	68-134	
1,2-Dichloroethane-d4	105	67-133	
Toluene-d8	94	70-130	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/13/17
Work Order: 17-03-0951
Preparation: N/A
Method: EPA TO-15
Units: ug/m3

Project: Infineon Indoor Air Block 2 / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-01D	**17-03-0951-2-A**	**03/13/17 14:25**	**Air**	**GC/MS ZZ**	**N/A**	**03/14/17 02:34**	**170313L02**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	15	1.00	
Acetone	28	4.8	1.00	
Benzene	1.7	1.6	1.00	
Benzyl Chloride	ND	7.8	1.00	
Bromodichloromethane	ND	3.4	1.00	
Bromoform	ND	5.2	1.00	
Bromomethane	ND	1.9	1.00	
2-Butanone	ND	4.4	1.00	
n-Butylbenzene	ND	2.7	1.00	
sec-Butylbenzene	ND	2.7	1.00	
tert-Butylbenzene	ND	2.7	1.00	
Carbon Disulfide	ND	6.2	1.00	
Carbon Tetrachloride	ND	3.1	1.00	
Chlorobenzene	ND	2.3	1.00	
Chloroethane	ND	1.3	1.00	
Chloroform	ND	2.4	1.00	
Chloromethane	1.9	1.0	1.00	
Dibromochloromethane	ND	4.3	1.00	
1,2-Dibromoethane	ND	3.8	1.00	
1,2-Dichlorobenzene	ND	3.0	1.00	
1,3-Dichlorobenzene	ND	3.0	1.00	
1,4-Dichlorobenzene	ND	3.0	1.00	
Dichlorodifluoromethane	3.0	2.5	1.00	
1,1-Dichloroethane	ND	2.0	1.00	
1,2-Dichloroethane	ND	2.0	1.00	
1,1-Dichloroethene	ND	2.0	1.00	
c-1,2-Dichloroethene	ND	2.0	1.00	
t-1,2-Dichloroethene	ND	2.0	1.00	
1,2-Dichloropropane	ND	2.3	1.00	
c-1,3-Dichloropropene	ND	2.3	1.00	
t-1,3-Dichloropropene	ND	4.5	1.00	
Dichlorotetrafluoroethane	ND	14	1.00	
1,1-Difluoroethane	9.1	5.4	1.00	
Ethylbenzene	ND	2.2	1.00	
4-Ethyltoluene	ND	2.5	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/13/17
1920 Main Street, Suite 300		Work Order:	17-03-0951
Irvine, CA 92614-7279		Preparation:	N/A
		Method:	EPA TO-15
		Units:	ug/m3
Project: Infineon Indoor Air Block 2 / 0397848			Page 4 of 12

Parameter	Result	RL	DF	Qualifiers
Hexachloro-1,3-Butadiene	ND	16	1.00	
2-Hexanone	ND	6.1	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	7.2	1.00	
Methylene Chloride	ND	17	1.00	
4-Methyl-2-Pentanone	ND	6.1	1.00	
Styrene	ND	6.4	1.00	
1,1,2,2-Tetrachloroethane	ND	6.9	1.00	
Tetrachloroethene	ND	3.4	1.00	
Toluene	3.6	1.9	1.00	
1,1,1-Trichloroethane	ND	2.7	1.00	
1,1,2-Trichloroethane	ND	2.7	1.00	
Trichloroethene	ND	2.7	1.00	
Trichlorofluoromethane	ND	5.6	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	11	1.00	
1,2,4-Trimethylbenzene	ND	7.4	1.00	
1,3,5-Trimethylbenzene	ND	2.5	1.00	
Vinyl Acetate	ND	7.0	1.00	
Vinyl Chloride	ND	1.3	1.00	
o-Xylene	ND	2.2	1.00	
p/m-Xylene	ND	8.7	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	102	68-134	
1,2-Dichloroethane-d4	106	67-133	
Toluene-d8	98	70-130	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-01D	**17-03-0951-2-A**	**03/13/17 14:25**	**Air**	**GC/MS ZZ**	**N/A**	**03/14/17 19:11**	**170314L01**

Parameter	Result	RL	DF	Qualifiers
Isopropanol	450	39	3.20	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	96	68-134	
1,2-Dichloroethane-d4	106	67-133	
Toluene-d8	94	70-130	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/13/17
Work Order: 17-03-0951
Preparation: N/A
Method: EPA TO-15
Units: ug/m3

Project: Infineon Indoor Air Block 2 / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-03	**17-03-0951-3-A**	**03/13/17 14:24**	**Air**	**GC/MS ZZ**	**N/A**	**03/14/17 03:21**	**170313L02**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	15	1.00	
Acetone	26	4.8	1.00	
Benzene	1.7	1.6	1.00	
Benzyl Chloride	ND	7.8	1.00	
Bromodichloromethane	ND	3.4	1.00	
Bromoform	ND	5.2	1.00	
Bromomethane	ND	1.9	1.00	
2-Butanone	ND	4.4	1.00	
n-Butylbenzene	ND	2.7	1.00	
sec-Butylbenzene	ND	2.7	1.00	
tert-Butylbenzene	ND	2.7	1.00	
Carbon Disulfide	ND	6.2	1.00	
Carbon Tetrachloride	ND	3.1	1.00	
Chlorobenzene	ND	2.3	1.00	
Chloroethane	ND	1.3	1.00	
Chloroform	ND	2.4	1.00	
Chloromethane	2.1	1.0	1.00	
Dibromochloromethane	ND	4.3	1.00	
1,2-Dibromoethane	ND	3.8	1.00	
1,2-Dichlorobenzene	ND	3.0	1.00	
1,3-Dichlorobenzene	ND	3.0	1.00	
1,4-Dichlorobenzene	ND	3.0	1.00	
Dichlorodifluoromethane	3.1	2.5	1.00	
1,1-Dichloroethane	ND	2.0	1.00	
1,2-Dichloroethane	ND	2.0	1.00	
1,1-Dichloroethene	ND	2.0	1.00	
c-1,2-Dichloroethene	ND	2.0	1.00	
t-1,2-Dichloroethene	ND	2.0	1.00	
1,2-Dichloropropane	ND	2.3	1.00	
c-1,3-Dichloropropene	ND	2.3	1.00	
t-1,3-Dichloropropene	ND	4.5	1.00	
Dichlorotetrafluoroethane	ND	14	1.00	
1,1-Difluoroethane	ND	5.4	1.00	
Ethylbenzene	ND	2.2	1.00	
4-Ethyltoluene	ND	2.5	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/13/17
1920 Main Street, Suite 300	Work Order:	17-03-0951
Irvine, CA 92614-7279	Preparation:	N/A
	Method:	EPA TO-15
	Units:	ug/m3
Project: Infineon Indoor Air Block 2 / 0397848		Page 6 of 12

Parameter	Result	RL	DF	Qualifiers
Hexachloro-1,3-Butadiene	ND	16	1.00	
2-Hexanone	ND	6.1	1.00	
Isopropanol	60	12	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	7.2	1.00	
Methylene Chloride	ND	17	1.00	
4-Methyl-2-Pentanone	ND	6.1	1.00	
Styrene	ND	6.4	1.00	
1,1,2,2-Tetrachloroethane	ND	6.9	1.00	
Tetrachloroethene	ND	3.4	1.00	
Toluene	3.8	1.9	1.00	
1,1,1-Trichloroethane	ND	2.7	1.00	
1,1,2-Trichloroethane	ND	2.7	1.00	
Trichloroethene	ND	2.7	1.00	
Trichlorofluoromethane	ND	5.6	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	11	1.00	
1,2,4-Trimethylbenzene	ND	7.4	1.00	
1,3,5-Trimethylbenzene	ND	2.5	1.00	
Vinyl Acetate	ND	7.0	1.00	
Vinyl Chloride	ND	1.3	1.00	
o-Xylene	ND	2.2	1.00	
p/m-Xylene	ND	8.7	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	102	68-134	
1,2-Dichloroethane-d4	107	67-133	
Toluene-d8	98	70-130	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/13/17
Work Order: 17-03-0951
Preparation: N/A
Method: EPA TO-15
Units: ug/m3

Project: Infineon Indoor Air Block 2 / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-08	**17-03-0951-4-A**	**03/13/17 14:35**	**Air**	**GC/MS ZZ**	**N/A**	**03/14/17 04:06**	**170313L02**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	15	1.00	
Acetone	21	4.8	1.00	
Benzene	ND	1.6	1.00	
Benzyl Chloride	ND	7.8	1.00	
Bromodichloromethane	ND	3.4	1.00	
Bromoform	ND	5.2	1.00	
Bromomethane	ND	1.9	1.00	
2-Butanone	ND	4.4	1.00	
n-Butylbenzene	ND	2.7	1.00	
sec-Butylbenzene	ND	2.7	1.00	
tert-Butylbenzene	ND	2.7	1.00	
Carbon Disulfide	ND	6.2	1.00	
Carbon Tetrachloride	ND	3.1	1.00	
Chlorobenzene	ND	2.3	1.00	
Chloroethane	ND	1.3	1.00	
Chloroform	ND	2.4	1.00	
Chloromethane	1.9	1.0	1.00	
Dibromochloromethane	ND	4.3	1.00	
1,2-Dibromoethane	ND	3.8	1.00	
1,2-Dichlorobenzene	ND	3.0	1.00	
1,3-Dichlorobenzene	ND	3.0	1.00	
1,4-Dichlorobenzene	ND	3.0	1.00	
Dichlorodifluoromethane	3.5	2.5	1.00	
1,1-Dichloroethane	ND	2.0	1.00	
1,2-Dichloroethane	ND	2.0	1.00	
1,1-Dichloroethene	ND	2.0	1.00	
c-1,2-Dichloroethene	ND	2.0	1.00	
t-1,2-Dichloroethene	ND	2.0	1.00	
1,2-Dichloropropane	ND	2.3	1.00	
c-1,3-Dichloropropene	ND	2.3	1.00	
t-1,3-Dichloropropene	ND	4.5	1.00	
Dichlorotetrafluoroethane	ND	14	1.00	
1,1-Difluoroethane	ND	5.4	1.00	
Ethylbenzene	ND	2.2	1.00	
4-Ethyltoluene	ND	2.5	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/13/17
1920 Main Street, Suite 300	Work Order:	17-03-0951
Irvine, CA 92614-7279	Preparation:	N/A
	Method:	EPA TO-15
	Units:	ug/m3
Project: Infineon Indoor Air Block 2 / 0397848		Page 8 of 12

Parameter	Result	RL	DF	Qualifiers
Hexachloro-1,3-Butadiene	ND	16	1.00	
2-Hexanone	ND	6.1	1.00	
Isopropanol	ND	12	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	7.2	1.00	
Methylene Chloride	ND	17	1.00	
4-Methyl-2-Pentanone	ND	6.1	1.00	
Styrene	ND	6.4	1.00	
1,1,2,2-Tetrachloroethane	ND	6.9	1.00	
Tetrachloroethene	ND	3.4	1.00	
Toluene	2.2	1.9	1.00	
1,1,1-Trichloroethane	ND	2.7	1.00	
1,1,2-Trichloroethane	ND	2.7	1.00	
Trichloroethene	ND	2.7	1.00	
Trichlorofluoromethane	ND	5.6	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	11	1.00	
1,2,4-Trimethylbenzene	ND	7.4	1.00	
1,3,5-Trimethylbenzene	ND	2.5	1.00	
Vinyl Acetate	ND	7.0	1.00	
Vinyl Chloride	ND	1.3	1.00	
o-Xylene	ND	2.2	1.00	
p/m-Xylene	ND	8.7	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	102	68-134	
1,2-Dichloroethane-d4	108	67-133	
Toluene-d8	99	70-130	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/13/17
Work Order: 17-03-0951
Preparation: N/A
Method: EPA TO-15
Units: ug/m3

Project: Infineon Indoor Air Block 2 / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
IA-11	**17-03-0951-5-A**	**03/13/17 14:33**	**Air**	**GC/MS ZZ**	**N/A**	**03/14/17 04:53**	**170313L02**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	15	1.00	
Acetone	25	4.8	1.00	
Benzene	ND	1.6	1.00	
Benzyl Chloride	ND	7.8	1.00	
Bromodichloromethane	ND	3.4	1.00	
Bromoform	ND	5.2	1.00	
Bromomethane	ND	1.9	1.00	
2-Butanone	ND	4.4	1.00	
n-Butylbenzene	ND	2.7	1.00	
sec-Butylbenzene	ND	2.7	1.00	
tert-Butylbenzene	ND	2.7	1.00	
Carbon Disulfide	ND	6.2	1.00	
Carbon Tetrachloride	ND	3.1	1.00	
Chlorobenzene	ND	2.3	1.00	
Chloroethane	ND	1.3	1.00	
Chloroform	ND	2.4	1.00	
Chloromethane	2.0	1.0	1.00	
Dibromochloromethane	ND	4.3	1.00	
1,2-Dibromoethane	ND	3.8	1.00	
1,2-Dichlorobenzene	ND	3.0	1.00	
1,3-Dichlorobenzene	ND	3.0	1.00	
1,4-Dichlorobenzene	ND	3.0	1.00	
Dichlorodifluoromethane	3.1	2.5	1.00	
1,1-Dichloroethane	ND	2.0	1.00	
1,2-Dichloroethane	ND	2.0	1.00	
1,1-Dichloroethene	ND	2.0	1.00	
c-1,2-Dichloroethene	ND	2.0	1.00	
t-1,2-Dichloroethene	ND	2.0	1.00	
1,2-Dichloropropane	ND	2.3	1.00	
c-1,3-Dichloropropene	ND	2.3	1.00	
t-1,3-Dichloropropene	ND	4.5	1.00	
Dichlorotetrafluoroethane	ND	14	1.00	
1,1-Difluoroethane	ND	5.4	1.00	
Ethylbenzene	ND	2.2	1.00	
4-Ethyltoluene	ND	2.5	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/13/17
1920 Main Street, Suite 300	Work Order:	17-03-0951
Irvine, CA 92614-7279	Preparation:	N/A
	Method:	EPA TO-15
	Units:	ug/m3
Project: Infineon Indoor Air Block 2 / 0397848		Page 10 of 12

Parameter	Result	RL	DF	Qualifiers
Hexachloro-1,3-Butadiene	ND	16	1.00	
2-Hexanone	ND	6.1	1.00	
Isopropanol	ND	12	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	7.2	1.00	
Methylene Chloride	ND	17	1.00	
4-Methyl-2-Pentanone	ND	6.1	1.00	
Styrene	ND	6.4	1.00	
1,1,2,2-Tetrachloroethane	ND	6.9	1.00	
Tetrachloroethene	ND	3.4	1.00	
Toluene	3.3	1.9	1.00	
1,1,1-Trichloroethane	ND	2.7	1.00	
1,1,2-Trichloroethane	ND	2.7	1.00	
Trichloroethene	ND	2.7	1.00	
Trichlorofluoromethane	ND	5.6	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	11	1.00	
1,2,4-Trimethylbenzene	ND	7.4	1.00	
1,3,5-Trimethylbenzene	ND	2.5	1.00	
Vinyl Acetate	ND	7.0	1.00	
Vinyl Chloride	ND	1.3	1.00	
o-Xylene	ND	2.2	1.00	
p/m-Xylene	ND	8.7	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	101	68-134	
1,2-Dichloroethane-d4	109	67-133	
Toluene-d8	99	70-130	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/13/17
Work Order: 17-03-0951
Preparation: N/A
Method: EPA TO-15
Units: ug/m3

Project: Infineon Indoor Air Block 2 / 0397848

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**095-01-021-18245**	**N/A**	**Air**	**GC/MS ZZ**	**N/A**	**03/13/17 14:04**	**170313L02**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	15	1.00	
Acetone	ND	4.8	1.00	
Benzene	ND	1.6	1.00	
Benzyl Chloride	ND	7.8	1.00	
Bromodichloromethane	ND	3.4	1.00	
Bromoform	ND	5.2	1.00	
Bromomethane	ND	1.9	1.00	
2-Butanone	ND	4.4	1.00	
n-Butylbenzene	ND	2.7	1.00	
sec-Butylbenzene	ND	2.7	1.00	
tert-Butylbenzene	ND	2.7	1.00	
Carbon Disulfide	ND	6.2	1.00	
Carbon Tetrachloride	ND	3.1	1.00	
Chlorobenzene	ND	2.3	1.00	
Chloroethane	ND	1.3	1.00	
Chloroform	ND	2.4	1.00	
Chloromethane	ND	1.0	1.00	
Dibromochloromethane	ND	4.3	1.00	
1,2-Dibromoethane	ND	3.8	1.00	
1,2-Dichlorobenzene	ND	3.0	1.00	
1,3-Dichlorobenzene	ND	3.0	1.00	
1,4-Dichlorobenzene	ND	3.0	1.00	
Dichlorodifluoromethane	ND	2.5	1.00	
1,1-Dichloroethane	ND	2.0	1.00	
1,2-Dichloroethane	ND	2.0	1.00	
1,1-Dichloroethene	ND	2.0	1.00	
c-1,2-Dichloroethene	ND	2.0	1.00	
t-1,2-Dichloroethene	ND	2.0	1.00	
1,2-Dichloropropane	ND	2.3	1.00	
c-1,3-Dichloropropene	ND	2.3	1.00	
t-1,3-Dichloropropene	ND	4.5	1.00	
Dichlorotetrafluoroethane	ND	14	1.00	
1,1-Difluoroethane	ND	5.4	1.00	
Ethylbenzene	ND	2.2	1.00	
4-Ethyltoluene	ND	2.5	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/13/17
1920 Main Street, Suite 300		Work Order:	17-03-0951
Irvine, CA 92614-7279		Preparation:	N/A
		Method:	EPA TO-15
		Units:	ug/m3
Project: Infineon Indoor Air Block 2 / 0397848			Page 12 of 12

Parameter	Result	RL	DF	Qualifiers
Hexachloro-1,3-Butadiene	ND	16	1.00	
2-Hexanone	ND	6.1	1.00	
Isopropanol	ND	12	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	7.2	1.00	
Methylene Chloride	ND	17	1.00	
4-Methyl-2-Pentanone	ND	6.1	1.00	
Styrene	ND	6.4	1.00	
1,1,2,2-Tetrachloroethane	ND	6.9	1.00	
Tetrachloroethene	ND	3.4	1.00	
Toluene	ND	1.9	1.00	
1,1,1-Trichloroethane	ND	2.7	1.00	
1,1,2-Trichloroethane	ND	2.7	1.00	
Trichloroethene	ND	2.7	1.00	
Trichlorofluoromethane	ND	5.6	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	11	1.00	
1,2,4-Trimethylbenzene	ND	7.4	1.00	
1,3,5-Trimethylbenzene	ND	2.5	1.00	
Vinyl Acetate	ND	7.0	1.00	
Vinyl Chloride	ND	1.3	1.00	
o-Xylene	ND	2.2	1.00	
p/m-Xylene	ND	8.7	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	100	68-134	
1,2-Dichloroethane-d4	104	67-133	
Toluene-d8	98	70-130	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**095-01-021-18248**	**N/A**	**Air**	**GC/MS ZZ**	**N/A**	**03/14/17 16:40**	**170314L01**

Parameter	Result	RL	DF	Qualifiers
Isopropanol	ND	12	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	100	68-134	
1,2-Dichloroethane-d4	107	67-133	
Toluene-d8	100	70-130	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Quality Control - LCS/LCSD

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon Indoor Air Block 2 / 0397848

Date Received: 03/13/17
Work Order: 17-03-0951
Preparation: N/A
Method: ASTM D-1946
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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-16-444-564	**LCS**	**Air**	**GC 65**	**N/A**	**03/13/17 12:55**	**170313L01**
099-16-444-564	**LCSD**	**Air**	**GC 65**	**N/A**	**03/13/17 13:21**	**170313L01**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Methane	29520000	27810000	94	27910000	95	80-120	0	0-30	
Carbon Dioxide	270600000	278200000	103	280400000	104	80-120	1	0-30	
Carbon Monoxide	80330000	80930000	101	81150000	101	80-120	0	0-30	
Oxygen (+ Argon)	52480000	51990000	99	51190000	98	80-120	2	0-30	
Nitrogen	796200000	765600000	96	764800000	96	80-120	0	0-30	

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS/LCSD

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/13/17
Work Order: 17-03-0951
Preparation: N/A
Method: EPA TO-15

Project: Infineon Indoor Air Block 2 / 0397848

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
095-01-021-18245	**LCS**	**Air**	**GC/MS ZZ**	**N/A**	**03/13/17 11:27**	**170313L02**
095-01-021-18245	**LCSD**	**Air**	**GC/MS ZZ**	**N/A**	**03/13/17 12:13**	**170313L02**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
1,2,4-Trichlorobenzene	185.5	203.4	110	204.2	110	31-151	11-171	0	0-30	
Acetone	59.39	67.24	113	66.55	112	67-133	56-144	1	0-30	
Benzene	79.87	79.73	100	80.73	101	70-130	60-140	1	0-30	
Benzyl Chloride	129.4	153.0	118	153.0	118	38-158	18-178	0	0-30	
Bromodichloromethane	167.5	175.5	105	175.0	104	70-130	60-140	0	0-30	
Bromoform	258.4	278.3	108	278.9	108	63-147	49-161	0	0-30	
Bromomethane	97.08	102.1	105	101.4	104	70-139	58-150	1	0-30	
2-Butanone	73.73	84.58	115	84.05	114	66-132	55-143	1	0-30	
n-Butylbenzene	137.2	150.9	110	150.6	110	50-150	33-167	0	0-30	
sec-Butylbenzene	137.2	143.6	105	143.7	105	50-150	33-167	0	0-30	
tert-Butylbenzene	137.2	144.0	105	143.3	104	50-150	33-167	1	0-30	
Carbon Disulfide	77.85	81.21	104	82.09	105	68-146	55-159	1	0-30	
Carbon Tetrachloride	157.3	164.1	104	162.8	104	70-136	59-147	1	0-30	
Chlorobenzene	115.1	114.4	99	116.0	101	70-130	60-140	1	0-30	
Chloroethane	65.96	69.17	105	69.46	105	65-149	51-163	0	0-30	
Chloroform	122.1	125.0	102	124.8	102	70-130	60-140	0	0-30	
Chloromethane	51.63	62.87	122	62.44	121	69-141	57-153	1	0-30	
Dibromochloromethane	213.0	221.2	104	222.7	105	70-138	59-149	1	0-30	
1,2-Dibromoethane	192.1	195.0	101	197.0	103	70-133	60-144	1	0-30	
1,2-Dichlorobenzene	150.3	156.1	104	156.4	104	48-138	33-153	0	0-30	
1,3-Dichlorobenzene	150.3	152.5	101	152.8	102	56-134	43-147	0	0-30	
1,4-Dichlorobenzene	150.3	152.2	101	152.2	101	52-136	38-150	0	0-30	
Dichlorodifluoromethane	123.6	138.1	112	134.7	109	67-139	55-151	2	0-30	
1,1-Dichloroethane	101.2	104.2	103	104.5	103	70-130	60-140	0	0-30	
1,2-Dichloroethane	101.2	106.7	105	105.7	104	70-132	60-142	1	0-30	
1,1-Dichloroethene	99.12	104.0	105	103.8	105	70-135	59-146	0	0-30	
c-1,2-Dichloroethene	99.12	98.29	99	99.04	100	70-130	60-140	1	0-30	
t-1,2-Dichloroethene	99.12	98.41	99	99.41	100	70-130	60-140	1	0-30	
1,2-Dichloropropane	115.5	119.0	103	120.0	104	70-130	60-140	1	0-30	
c-1,3-Dichloropropene	113.5	120.3	106	120.7	106	70-130	60-140	0	0-30	
t-1,3-Dichloropropene	113.5	123.1	108	123.3	109	70-147	57-160	0	0-30	
Dichlorotetrafluoroethane	174.8	194.8	111	191.1	109	51-135	37-149	2	0-30	
1,1-Difluoroethane	67.54	76.41	113	75.96	112	70-131	60-141	1	0-30	
Ethylbenzene	108.6	109.0	100	110.5	102	70-130	60-140	1	0-30	
4-Ethyltoluene	122.9	125.1	102	125.0	102	68-130	58-140	0	0-30	
Hexachloro-1,3-Butadiene	266.6	291.9	109	289.1	108	44-146	27-163	1	0-30	

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS/LCSD

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/13/17
Work Order: 17-03-0951
Preparation: N/A
Method: EPA TO-15

Project: Infineon Indoor Air Block 2 / 0397848

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
2-Hexanone	102.4	117.7	115	118.7	116	70-136	59-147	1	0-30	
Isopropanol	61.45	69.92	114	69.53	113	57-135	44-148	1	0-30	
Methyl-t-Butyl Ether (MTBE)	90.13	88.95	99	89.82	100	68-130	58-140	1	0-30	
Methylene Chloride	86.84	89.57	103	89.85	103	69-130	59-140	0	0-30	
4-Methyl-2-Pentanone	102.4	115.8	113	116.2	113	70-130	60-140	0	0-30	
Styrene	106.5	105.7	99	107.3	101	65-131	54-142	1	0-30	
1,1,2,2-Tetrachloroethane	171.6	180.5	105	181.8	106	63-130	52-141	1	0-30	
Tetrachloroethene	169.6	163.1	96	166.2	98	70-130	60-140	2	0-30	
Toluene	94.21	90.70	96	92.19	98	70-130	60-140	2	0-30	
1,1,1-Trichloroethane	136.4	138.1	101	138.0	101	70-130	60-140	0	0-30	
1,1,2-Trichloroethane	136.4	141.6	104	142.3	104	70-130	60-140	1	0-30	
Trichloroethene	134.3	134.1	100	134.7	100	70-130	60-140	0	0-30	
Trichlorofluoromethane	140.5	138.1	98	137.4	98	63-141	50-154	1	0-30	
1,1,2-Trichloro-1,2,2-Trifluoroethane	191.6	196.4	103	196.8	103	70-136	59-147	0	0-30	
1,2,4-Trimethylbenzene	122.9	132.0	107	132.7	108	60-132	48-144	1	0-30	
1,3,5-Trimethylbenzene	122.9	127.3	104	127.3	104	62-130	51-141	0	0-30	
Vinyl Acetate	88.03	99.38	113	98.58	112	58-130	46-142	1	0-30	
Vinyl Chloride	63.91	71.81	112	71.60	112	70-134	59-145	0	0-30	
o-Xylene	108.6	108.0	99	108.4	100	69-130	59-140	0	0-30	
p/m-Xylene	217.1	221.0	102	223.0	103	70-132	60-142	1	0-30	

Total number of LCS compounds: 56
Total number of ME compounds: 0
Total number of ME compounds allowed: 3
LCS ME CL validation result: Pass

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS/LCSD

ERM-WEST		Date Received:	03/13/17
1920 Main Street, Suite 300		Work Order:	17-03-0951
Irvine, CA 92614-7279		Preparation:	N/A
		Method:	EPA TO-15
Project: Infineon Indoor Air Block 2 / 0397848			Page 4 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
095-01-021-18248	**LCS**	**Air**	**GC/MS ZZ**	**N/A**	**03/14/17 13:59**	**170314L01**
095-01-021-18248	**LCSD**	**Air**	**GC/MS ZZ**	**N/A**	**03/14/17 14:44**	**170314L01**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
1,2,4-Trichlorobenzene	185.5	203.7	110	211.4	114	31-151	11-171	4	0-30	
Acetone	59.39	68.08	115	69.73	117	67-133	56-144	2	0-30	
Benzene	79.87	80.45	101	84.10	105	70-130	60-140	4	0-30	
Benzyl Chloride	129.4	155.6	120	161.5	125	38-158	18-178	4	0-30	
Bromodichloromethane	167.5	175.8	105	181.9	109	70-130	60-140	3	0-30	
Bromoform	258.4	279.0	108	291.2	113	63-147	49-161	4	0-30	
Bromomethane	97.08	102.6	106	105.0	108	70-139	58-150	2	0-30	
2-Butanone	73.73	85.40	116	88.21	120	66-132	55-143	3	0-30	
n-Butylbenzene	137.2	152.4	111	157.8	115	50-150	33-167	3	0-30	
sec-Butylbenzene	137.2	143.7	105	149.8	109	50-150	33-167	4	0-30	
tert-Butylbenzene	137.2	143.9	105	149.2	109	50-150	33-167	4	0-30	
Carbon Disulfide	77.85	81.93	105	83.43	107	68-146	55-159	2	0-30	
Carbon Tetrachloride	157.3	162.9	104	168.0	107	70-136	59-147	3	0-30	
Chlorobenzene	115.1	114.7	100	121.4	106	70-130	60-140	6	0-30	
Chloroethane	65.96	70.46	107	72.03	109	65-149	51-163	2	0-30	
Chloroform	122.1	125.3	103	129.9	106	70-130	60-140	4	0-30	
Chloromethane	51.63	64.26	124	65.34	127	69-141	57-153	2	0-30	
Dibromochloromethane	213.0	222.1	104	232.3	109	70-138	59-149	4	0-30	
1,2-Dibromoethane	192.1	197.2	103	206.9	108	70-133	60-144	5	0-30	
1,2-Dichlorobenzene	150.3	156.0	104	163.0	108	48-138	33-153	4	0-30	
1,3-Dichlorobenzene	150.3	151.8	101	159.1	106	56-134	43-147	5	0-30	
1,4-Dichlorobenzene	150.3	151.7	101	158.8	106	52-136	38-150	5	0-30	
Dichlorodifluoromethane	123.6	138.4	112	140.4	114	67-139	55-151	1	0-30	
1,1-Dichloroethane	101.2	104.8	104	108.9	108	70-130	60-140	4	0-30	
1,2-Dichloroethane	101.2	106.9	106	110.2	109	70-132	60-142	3	0-30	
1,1-Dichloroethene	99.12	104.5	105	108.0	109	70-135	59-146	3	0-30	
c-1,2-Dichloroethene	99.12	99.06	100	103.3	104	70-130	60-140	4	0-30	
t-1,2-Dichloroethene	99.12	98.97	100	103.3	104	70-130	60-140	4	0-30	
1,2-Dichloropropane	115.5	120.9	105	126.1	109	70-130	60-140	4	0-30	
c-1,3-Dichloropropene	113.5	120.6	106	125.6	111	70-130	60-140	4	0-30	
t-1,3-Dichloropropene	113.5	123.5	109	128.0	113	70-147	57-160	4	0-30	
Dichlorotetrafluoroethane	174.8	197.7	113	201.8	115	51-135	37-149	2	0-30	
1,1-Difluoroethane	67.54	77.81	115	79.94	118	70-131	60-141	3	0-30	
Ethylbenzene	108.6	109.9	101	115.5	106	70-130	60-140	5	0-30	
4-Ethyltoluene	122.9	124.5	101	130.4	106	68-130	58-140	5	0-30	
Hexachloro-1,3-Butadiene	266.6	292.7	110	301.4	113	44-146	27-163	3	0-30	

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS/LCSD

ERM-WEST		Date Received:	03/13/17
1920 Main Street, Suite 300		Work Order:	17-03-0951
Irvine, CA 92614-7279		Preparation:	N/A
		Method:	EPA TO-15
Project: Infineon Indoor Air Block 2 / 0397848			Page 5 of 5

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
2-Hexanone	102.4	119.3	116	124.7	122	70-136	59-147	4	0-30	
Isopropanol	61.45	70.22	114	72.36	118	57-135	44-148	3	0-30	
Methyl-t-Butyl Ether (MTBE)	90.13	88.81	99	92.53	103	68-130	58-140	4	0-30	
Methylene Chloride	86.84	90.29	104	93.95	108	69-130	59-140	4	0-30	
4-Methyl-2-Pentanone	102.4	116.8	114	121.6	119	70-130	60-140	4	0-30	
Styrene	106.5	106.3	100	111.8	105	65-131	54-142	5	0-30	
1,1,2,2-Tetrachloroethane	171.6	183.3	107	192.0	112	63-130	52-141	5	0-30	
Tetrachloroethene	169.6	164.2	97	172.8	102	70-130	60-140	5	0-30	
Toluene	94.21	92.04	98	96.35	102	70-130	60-140	5	0-30	
1,1,1-Trichloroethane	136.4	137.3	101	142.0	104	70-130	60-140	3	0-30	
1,1,2-Trichloroethane	136.4	143.0	105	148.9	109	70-130	60-140	4	0-30	
Trichloroethene	134.3	135.1	101	140.5	105	70-130	60-140	4	0-30	
Trichlorofluoromethane	140.5	138.2	98	142.3	101	63-141	50-154	3	0-30	
1,1,2-Trichloro-1,2,2-Trifluoroethane	191.6	197.1	103	205.1	107	70-136	59-147	4	0-30	
1,2,4-Trimethylbenzene	122.9	132.5	108	138.0	112	60-132	48-144	4	0-30	
1,3,5-Trimethylbenzene	122.9	126.2	103	131.8	107	62-130	51-141	4	0-30	
Vinyl Acetate	88.03	100.3	114	103.2	117	58-130	46-142	3	0-30	
Vinyl Chloride	63.91	72.80	114	74.80	117	70-134	59-145	3	0-30	
o-Xylene	108.6	108.4	100	113.0	104	69-130	59-140	4	0-30	
p/m-Xylene	217.1	223.1	103	233.5	108	70-132	60-142	5	0-30	

Total number of LCS compounds: 56
Total number of ME compounds: 0
Total number of ME compounds allowed: 3
LCS ME CL validation result: Pass

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RPD: Relative Percent Difference. CL: Control Limits

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Summa Canister Vacuum Summary

Work Order: 17-03-0951 Page 1 of 1

Sample Name	Vacuum Out	Vacuum In	Equipment	Description
IA-01	-29.50 in Hg	-8.60 in Hg	D553	Summa Canister 6L
IA-01D	-29.50 in Hg	-6.10 in Hg	D559	Summa Canister 6L
IA-03	-29.50 in Hg	-6.50 in Hg	D172	Summa Canister 6L
IA-08	-29.50 in Hg	-8.10 in Hg	SIM098	Summa Canister 6L
IA-11	-29.50 in Hg	-6.50 in Hg	SIM074	Summa Canister 6L

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Sample Analysis Summary Report

Work Order: 17-03-0951 Page 1 of 1

Method	Extraction	Chemist ID	Instrument	Analytical Location
ASTM D-1946	N/A	1074	GC 65	2
EPA TO-15	N/A	884	GC/MS ZZ	2

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Glossary of Terms and Qualifiers

Work Order: 17-03-0951 Page 1 of 1

Qualifiers	Definition
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
CI	See case narrative.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

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7440 Lincoln Way, Garden Grove, CA 92841-1427 • (714) 895-5494
For courier service / sample drop off information, contact us26_sales@eurofinsus.com or call us.

AIR CHAIN-OF-CUSTODY RECORD

WO NO. / LAB USE ONLY: **17-03-0951**

DATE: 3/13/17
PAGE: 1 OF 1

LABORATORY CLIENT: ERM - Maggie Tymkow
ADDRESS: 1920 Main St. Suite 300
CITY: Irvine STATE: CA ZIP: 92614
TEL: 562-882-4402 E-MAIL: maggie.tymkow@erm.com

CLIENT PROJECT NAME / NO.: Infineon Indoor Air Block 2
P.O. NO.: 0397848
PROJECT CONTACT: Bengie
LAB CONTACT OR QUOTE NO.: Virendra
PROJECT ADDRESS: 1521 Grand
SAMPLER(S): (PRINT) Brian Kane
CITY: El Segundo STATE: CA ZIP: 90245

TURNAROUND TIME (Rush surcharges may apply to any TAT not "STANDARD"):
☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAYS ☒ STANDARD

EDD: ☐ COELT EDF ☐ OTHER
UNITS:

SPECIAL INSTRUCTIONS:
Please email results to address above.

IA-01 End Time: 1425

REQUESTED ANALYSES

LAB USE ONLY	SAMPLE ID	FIELD ID / POINT OF COLLECTION	MATRIX: Indoor (I) Soil Vap. (SV) Ambient (A)	SAMPLING EQUIPMENT: Media ID	Canister Size 6L or 1L	Flow Controller ID	START SAMPLING INFORMATION: Date	Time (24 hr clock)	Canister Pressure (in Hg)	STOP SAMPLING INFORMATION: Date	Time (24 hr clock)	Canister Pressure (in Hg)	TO-15	Methane (ASTM D1946)
1	IA-01		A	0581	6L	FC65	3/13/17	0724	-30	3/13/17	~~1442~~ 1425	-8	X	X
2	IA-01D		I	D559	↓	FC385	↓	0724	-30	↓	1425	-7	X	X
3	IA-03		I	0232	↓	FC39	↓	0722	-30	↓	1424	-8	X	X
4	IA-08		I	1756	↓	FC395	↓	0732	-30	↓	1435	-7	X	X
5	IA-11		I	1773	↓	FC132	↓	0729	-30	↓	1433	-7	X	X

Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
Brian Kane	Dannyh ERI	3/13/17	16:38
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:

2014-07-01 Revision

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WORK ORDER NUMBER: 17-03- 0951

SAMPLE RECEIPT CHECKLIST

COOLER 0 OF 0

CLIENT: ERM

DATE: 03 / 13 / 2017

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)

Thermometer ID: SC3B (CF: 0.0°C); Temperature (w/o CF): _____°C (w/ CF): _____°C; ☐ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____)

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling

☐ Sample(s) received at ambient temperature; placed on ice for transport by courier

Ambient Temperature: ☑ Air ☐ Filter Checked by: GB

CUSTODY SEAL:

Cooler ☐ Present and Intact ☐ Present but Not Intact ☐ Not Present ☑ N/A Checked by: GB

Sample(s) ☐ Present and Intact ☐ Present but Not Intact ☑ Not Present ☐ N/A Checked by: GB

SAMPLE CONDITION:	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ Sampling date ☐ Sampling time ☐ Matrix ☐ Number of containers			
☐ No analysis requested ☐ Not relinquished ☐ No relinquished date ☐ No relinquished time			
Sampler's name indicated on COC	☑	☐	☐
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and in good condition	☑	☐	☐
Proper containers for analyses requested	☑	☐	☐
Sufficient volume/mass for analyses requested	☑	☐	☐
Samples received within holding time	☑	☐	☐
Aqueous samples for certain analyses received within 15-minute holding time			
☐ pH ☐ Residual Chlorine ☐ Dissolved Sulfide ☐ Dissolved Oxygen	☐	☐	☑
Proper preservation chemical(s) noted on COC and/or sample container	☐	☐	☑
Unpreserved aqueous sample(s) received for certain analyses			
☐ Volatile Organics ☐ Total Metals ☐ Dissolved Metals			
Container(s) for certain analysis free of headspace	☐	☐	☑
☐ Volatile Organics ☐ Dissolved Gases (RSK-175) ☐ Dissolved Oxygen (SM 4500)			
☐ Carbon Dioxide (SM 4500) ☐ Ferrous Iron (SM 3500) ☐ Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE: **(Trip Blank Lot Number:** _____**)**

Aqueous: ☐ VOA ☐ VOA**h** ☐ VOA**na$_2$** ☐ 100PJ ☐ 100PJ**na$_2$** ☐ 125AGB ☐ 125AGB**h** ☐ 125AGB**p** ☐ 125PB

☐ 125PB**znna** ☐ 250AGB ☐ 250CGB ☐ 250CGB**s** ☐ 250PB ☐ 250PB**n** ☐ 500AGB ☐ 500AGJ ☐ 500AGJ**s**

☐ 500PB ☐ 1AGB ☐ 1AGB**na$_2$** ☐ 1AGB**s** ☐ 1PB ☐ 1PB**na** ☐ _____ ☐ _____ ☐ _____ ☐ _____

Solid: ☐ 4ozCGJ ☐ 8ozCGJ ☐ 16ozCGJ ☐ Sleeve (_____) ☐ EnCores® (_____) ☐ TerraCores® (_____) ☐ _____

Air: ☐ Tedlar™ ☑ Canister ☐ Sorbent Tube ☐ PUF ☐ _____ **Other Matrix** (_____): ☐ _____ ☐ _____

Container: **A** = Amber, **B** = Bottle, **C** = Clear, **E** = Envelope, **G** = Glass, **J** = Jar, **P** = Plastic, and **Z** = Ziploc/Resealable Bag

Preservative: **b** = buffered, **f** = filtered, **h** = HCl, **n** = HNO_3, **na** = NaOH, **na$_2$** = $Na_2S_2O_3$, **p** = H_3PO_4, **s** = H_2SO_4, **u** = ultra-pure, **x** = Na_2SO_3+$NaHSO_4.H_2O$, **znna** = Zn $(CH_3CO_2)_2$ + NaOH

Labeled/Checked by: GB

Reviewed by: JD

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APPENDIX F SOIL BORING LOGS - ERM 2018 PHASE II SITE INVESTIGATION - BLOCK 1

Final Data Package for Membrane Interface Probe Services

Site Location: 1521 East Grand Avenue, Infineon, El Segundo, California

Project Number: 304181021

Report Date: March 15, 2018

Prepared for:
ERM Group, Inc.
Maggie Tymkow
1920 Main Street, Suite 300
Irvine, California 92614
Tel. / 949.623.4700
E-Mail / Maggie.tymkow@erm.com

Prepared by:
Cascade Technical Services
Daniel Caputo
7991 Shaffer Parkway, Suite 101
Littleton, Colorado 80127
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E-Mail /DCaputo@cascade-env.com

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Project Narrative

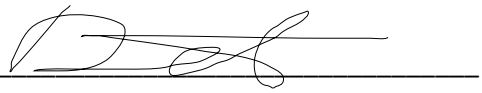
Cascade Technical Services (Cascade) is pleased to present this data report to ERM Group, Inc. for the membrane interface probe (MIP) services that were provided between the dates of March 1st and March 9th, 2018 at your site located at 1521 East Grand Avenue, Infineon, El Segundo, California.

The results associated with the data and plots presented in this report were generated in accordance to Cascade's and Geoprobe's Standard Operating Procedures (SOPs) for MIP services.

All field work and data management were completed by trained, scientific professionals and all quality assurance/quality control (QA/QC) measurements associated with these data were found to be within the tolerances set forth in the SOPs for these services. Response tests conducted previous to, and subsequent to the MIP borings were found to be within the tolerances set forth for this MIP survey and therefore the data are deemed acceptable for use. Exception/deviations regarding these response tests and the related data are noted on the MIP Summary Table that is part of this report.

This report contains two sets of plots for each of the MIP locations; one set is scaled to show the lower level responses based on the responses in each individual boring and the second set is scaled to show the higher level detector responses.

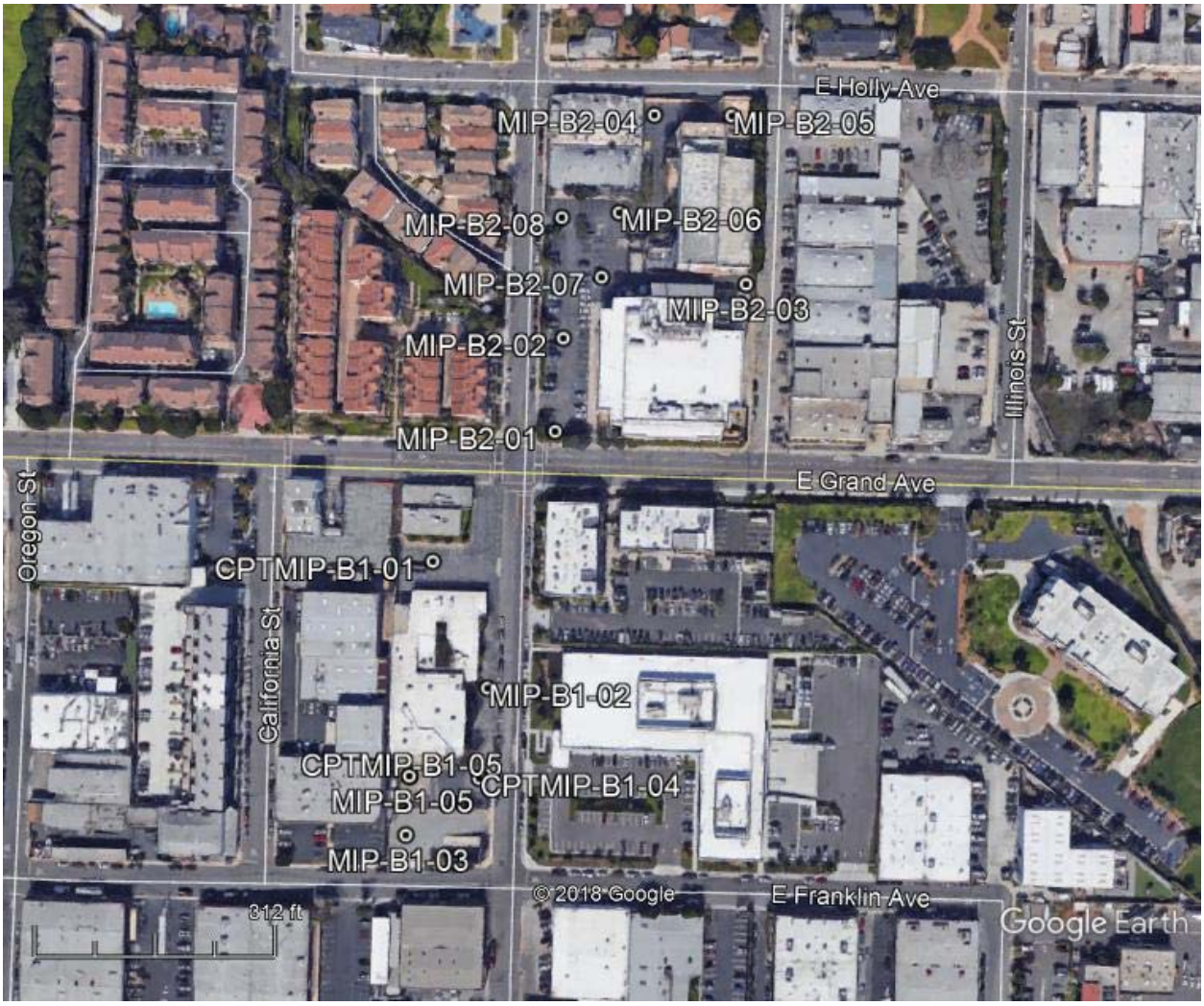
I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Signature: 

Daniel Caputo, Western Regional Manager of Site Characterization Services

Project Site Map and MIP Locations

Approximate boring locations are provided below. Field staff estimated boring locations using reference points observed on site in relation to the same reference points visible in Google Earth map software.



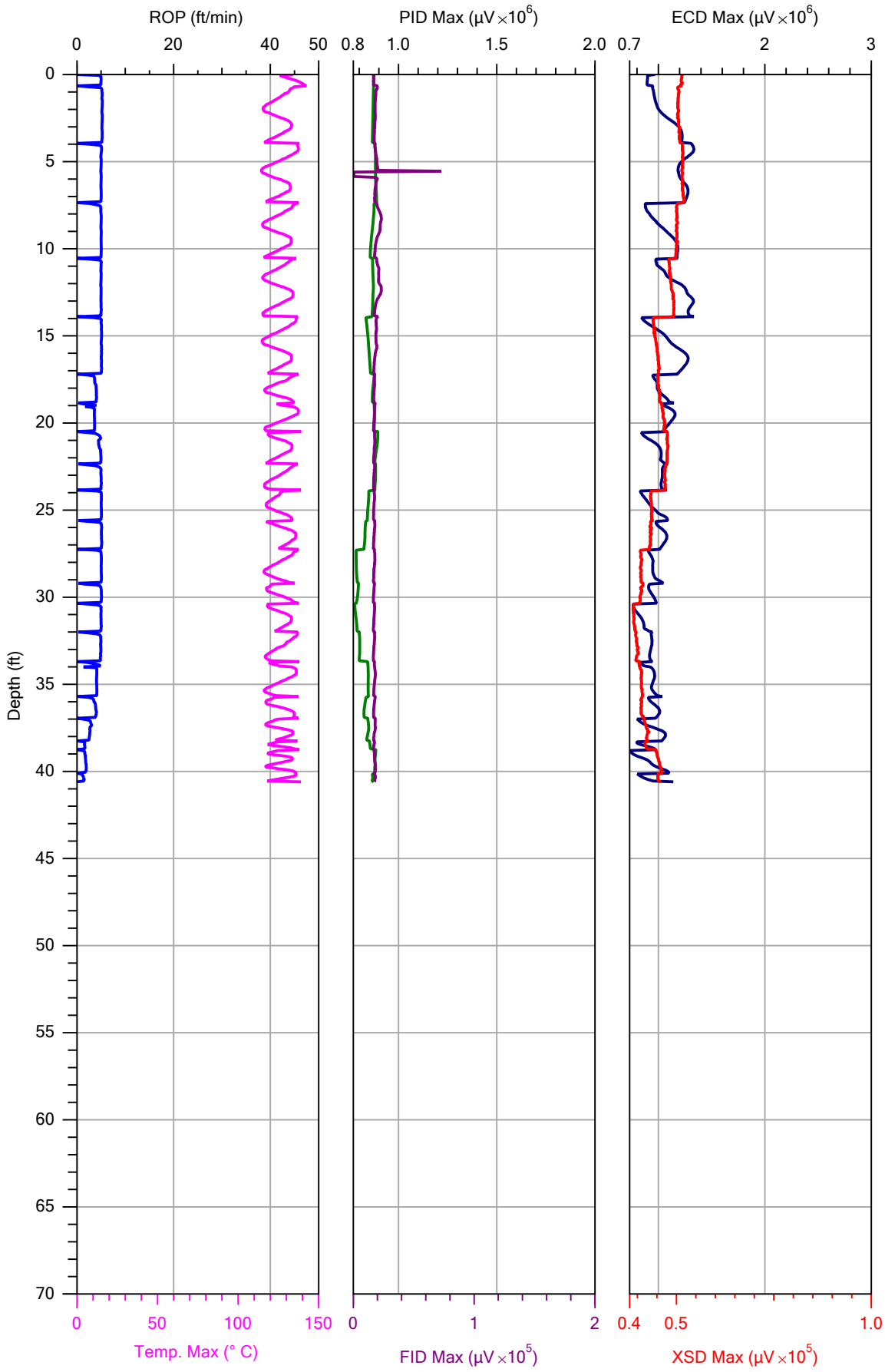
Membrane Interface Probe Data Summary Table

Provided below is a summary of MIP information, including response test acceptability and any deviations from the standard operating procedure that occurred during the field activities.

MIP Location	Total Depth (ft)	Response Test Results, ECD - (mV)			Response Test Results, PID - (mV)			Response Test Results, XSD - (mV)			Comments/Deviations
		Pre	Post	Acceptable*	Pre	Post	Acceptable*	Pre	Post	Acceptable*	
CPTMIP-B1-01	40.60	1549.8	1407.3	YES	173.3	118.5	YES	11.1	11.1	YES	
CPTMIP-B1-04	50.15	1407.3	7354.7	YES	118.5	244.7	YES	11.1	62.4	YES	
CPTMIP-B1-05	41.75	3153.5	825.3	YES	430.6	436.1	YES	64.5	459.0	YES	
MIP-B1-02	39.70	651.9	1153.1	YES	41.7	68.2	NO	5.3	8.7	YES	New membrane. Low response. Peak shape acceptable. Proceed.
MIP-B1-03	60.95	2030.2	2816.2	YES	200.8	208.8	YES	16.2	16.7	YES	
MIP-B1-05	57.70	2030.2	2000.9	YES	200.8	126.9	YES	16.2	12.8	YES	
MIP-B2-01	67.00	2562.1	1901.2	YES	264.4	133.8	YES	12.1	8.9	YES	
MIP-B2-02	48.40	1717.8	2030.0	YES	163.7	157.7	YES	12.9	14.6	YES	
MIP-B2-03	56.80	2030.0	1654.2	YES	157.7	143.3	YES	14.6	11.3	YES	
MIP-B2-04	24.80	2030.0	1398.1	YES	157.7	119.3	YES	14.6	13.3	YES	
MIP-B2-05	44.60	2220.3	2271.9	YES	198.0	214.3	YES	15.2	15.9	YES	
MIP-B2-06	38.95	2271.9	2255.3	YES	214.3	273.5	YES	15.9	15.8	YES	
MIP-B2-07	43.55	1955.5	1992.1	YES	200.9	231.6	YES	12.5	12.6	YES	
MIP-B2-08	40.85	2562.1	1901.2	YES	264.4	133.8	YES	12.1	8.9	YES	

*Acceptable values for ECD, PID, and XSD detectors are 200mV, 50mV, and 5mV, respectively.

Membrane Interface Probe Data Plots – Low Range Scales



CASCADE
DRILLING | TECHNICAL SERVICES

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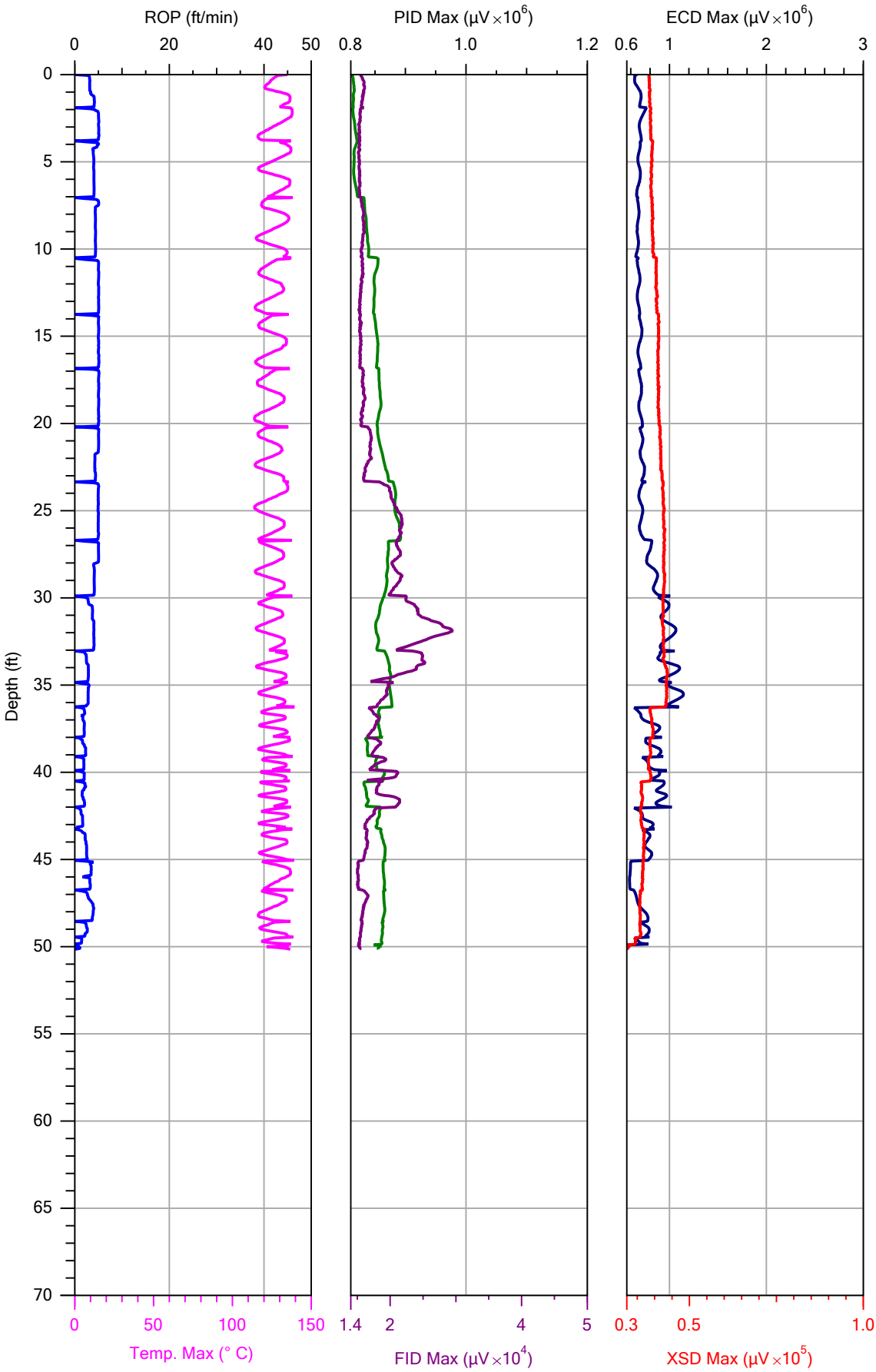
Company: Cascade	Operator: Horrell	Date: 3/1/2018
Project ID: Infineon	Client: ERM	Location: El Segundo



CASCADE
DRILLING | TECHNICAL SERVICES

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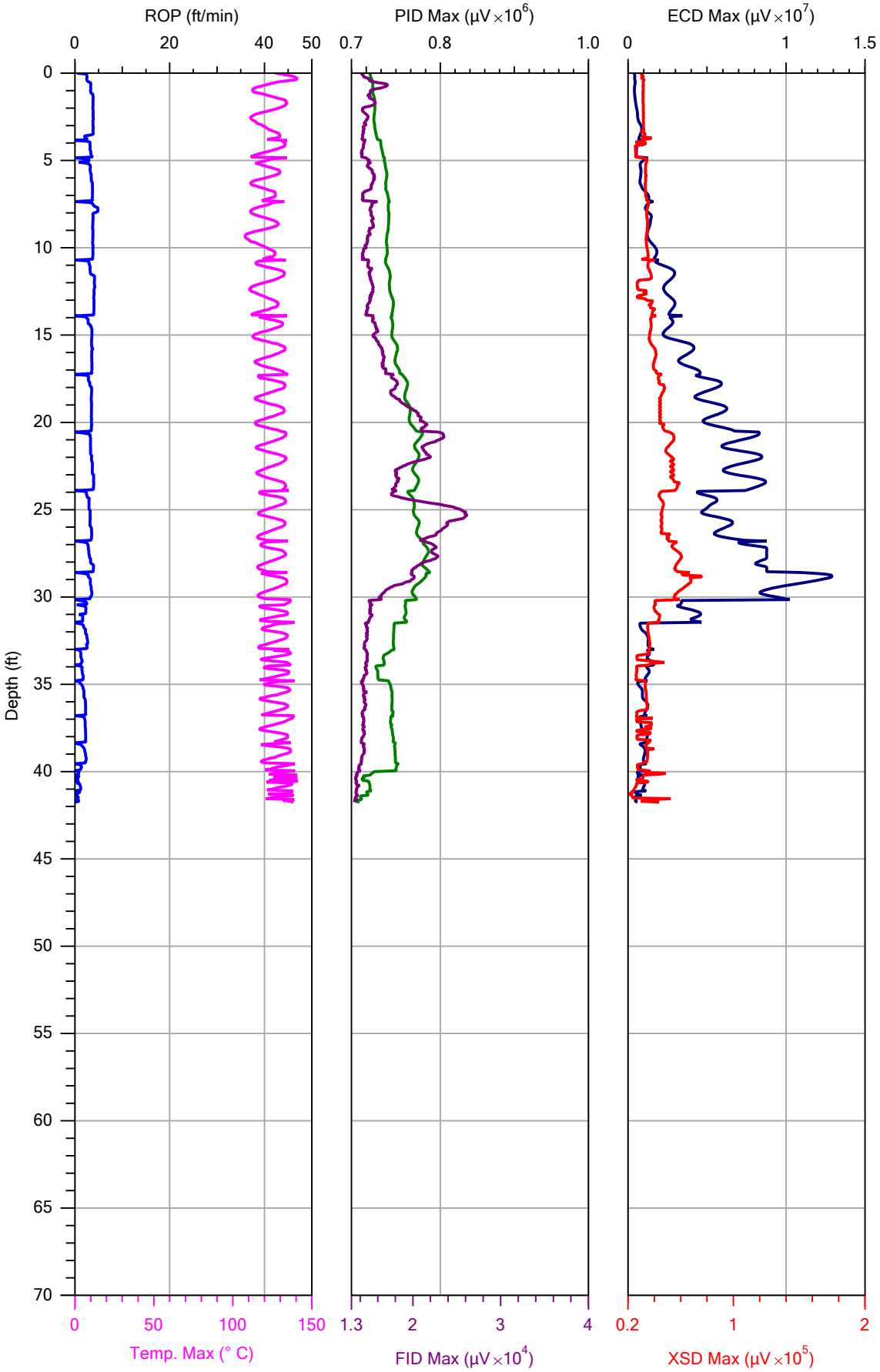

CASCADE
DRILLING | TECHNICAL SERVICES

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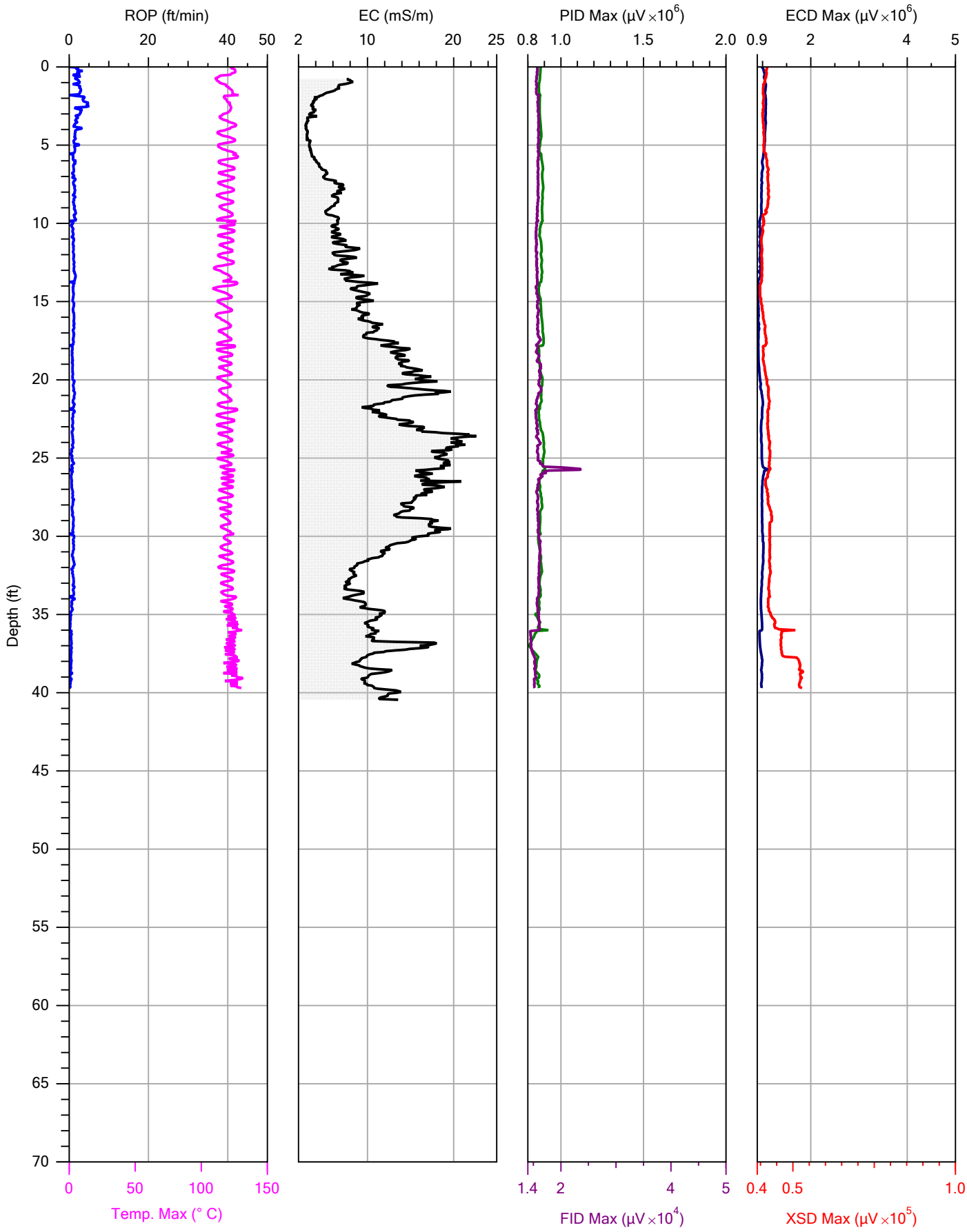

CASCADE
DRILLING | TECHNICAL SERVICES

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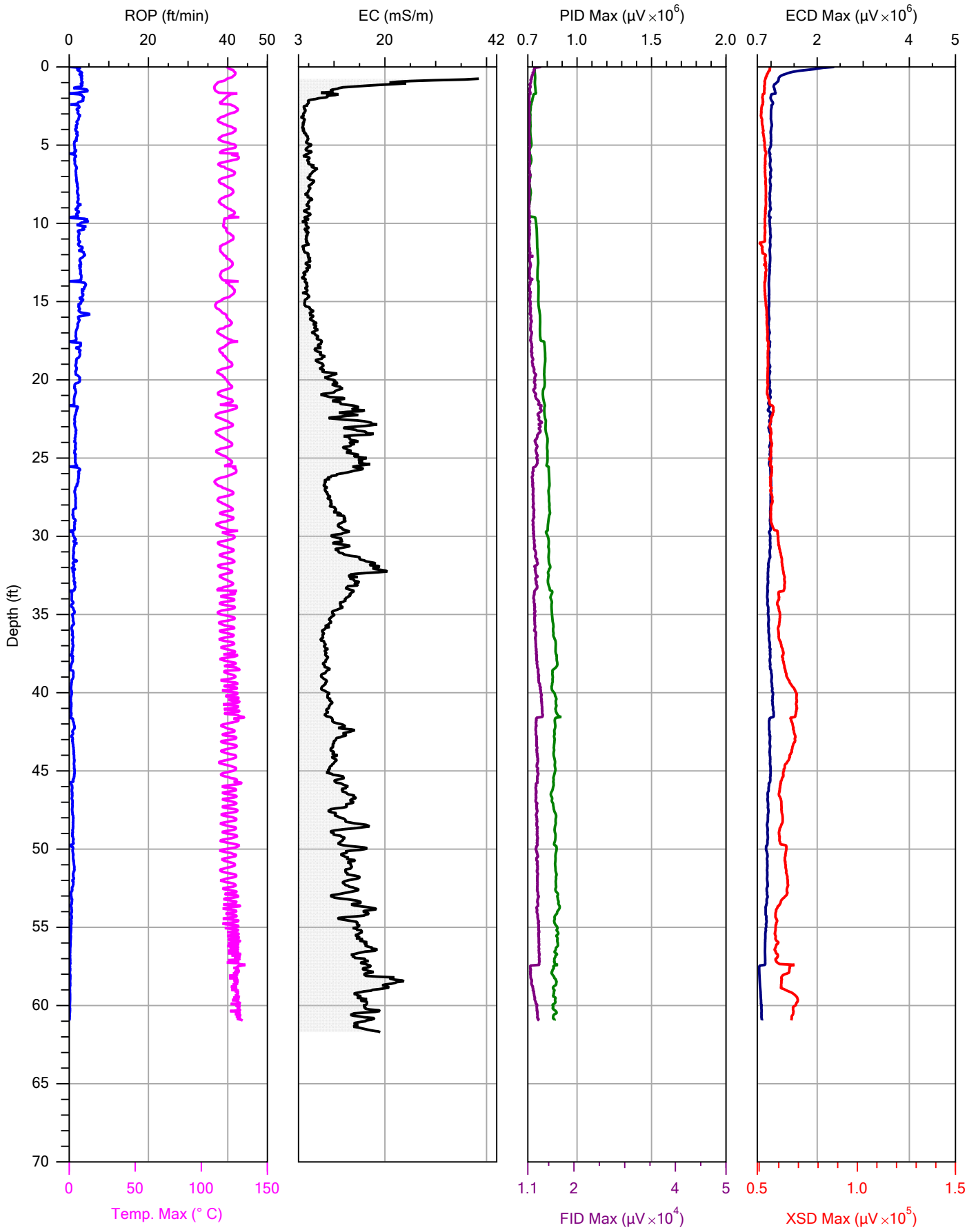
Project ID: Infineon	Client: ERM	Location: El Segundo



CASCADE
DRILLING | TECHNICAL SERVICES

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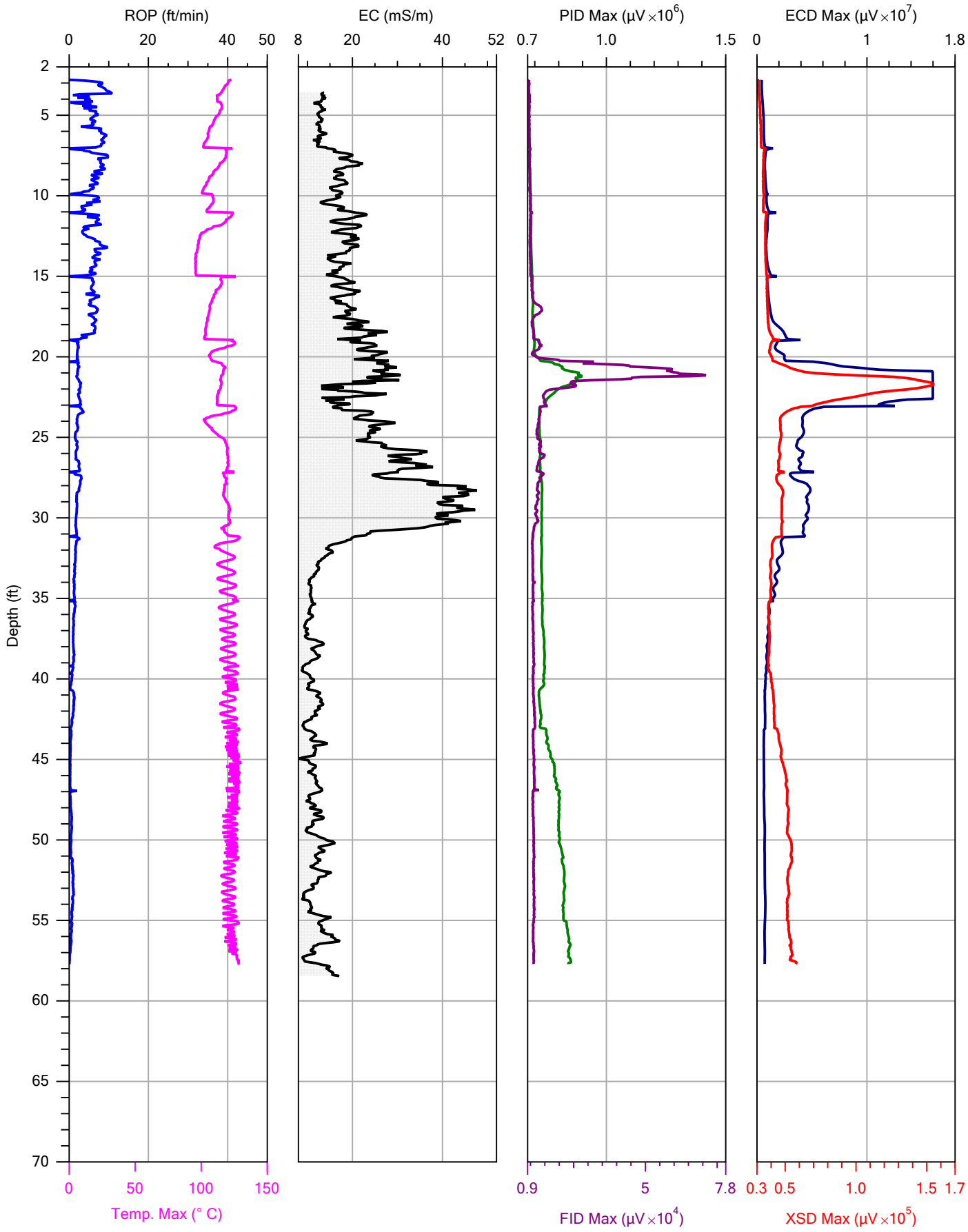
Project ID: Infineon	Client: ERM	Location: El Segundo



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DRILLING | TECHNICAL SERVICES

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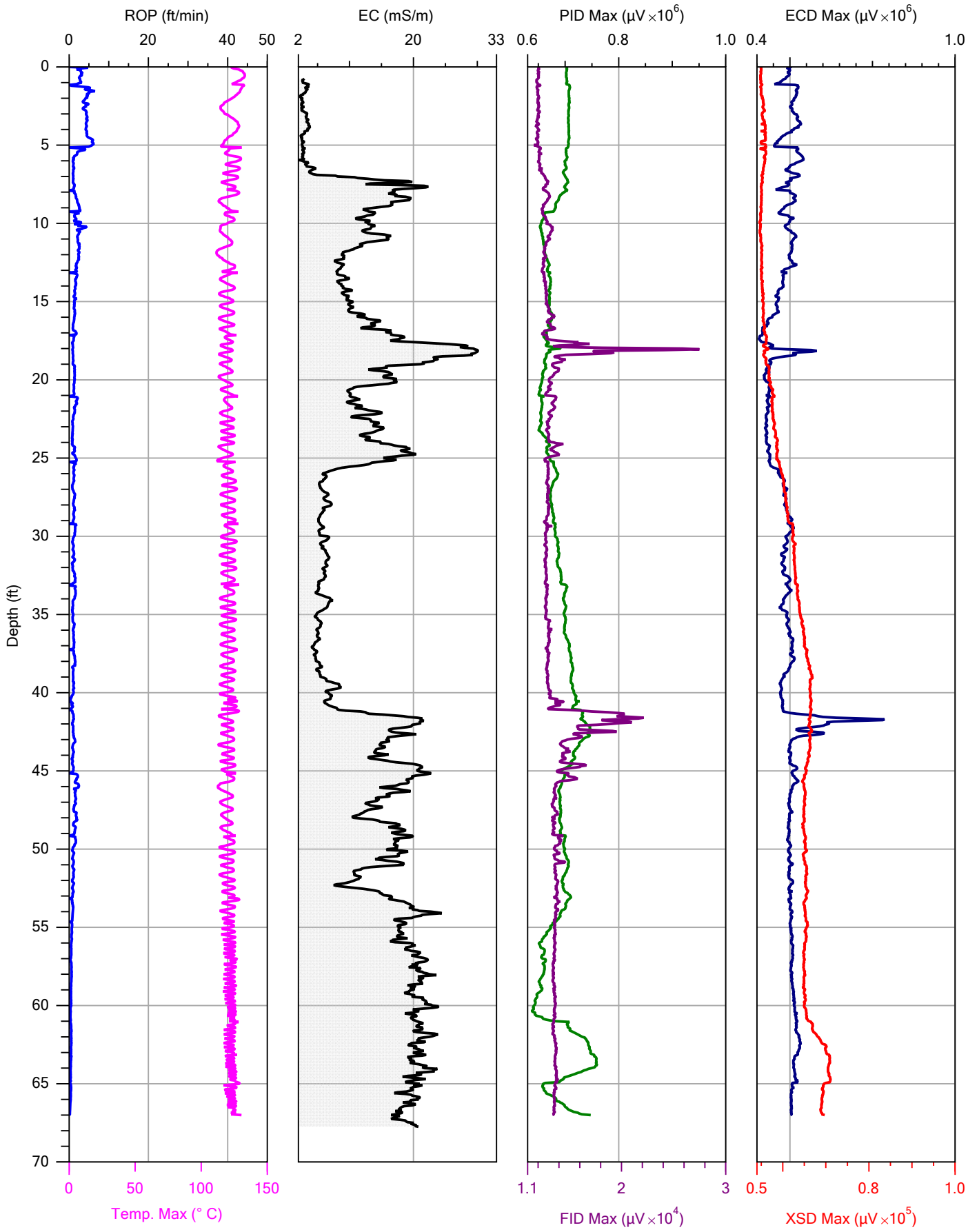
Project ID: Infineon	Client: ERM	Location: El Segundo



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DRILLING | TECHNICAL SERVICES

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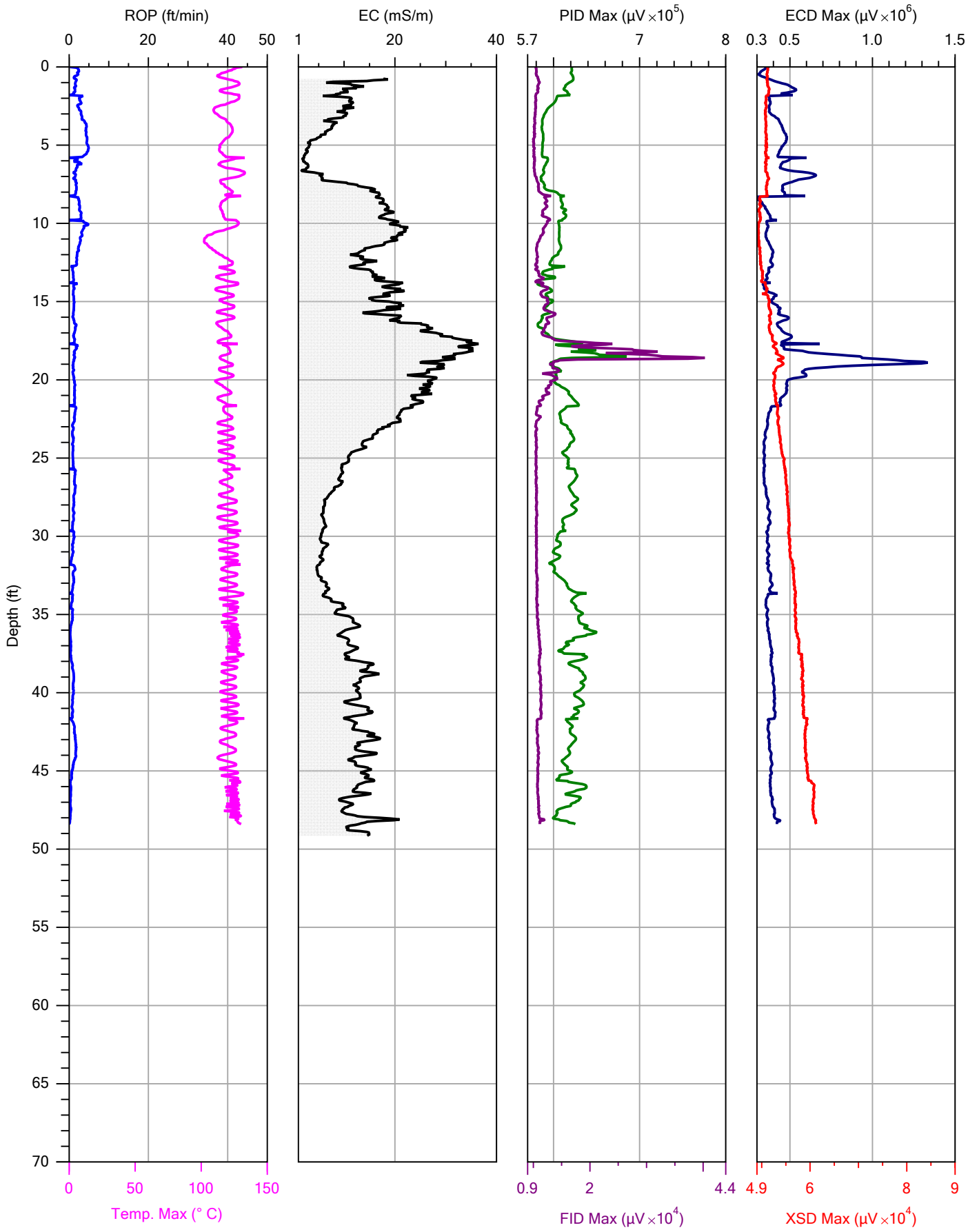
Project ID: Infineon	Client: ERM	Location: El Segundo



CASCADE
DRILLING | TECHNICAL SERVICES

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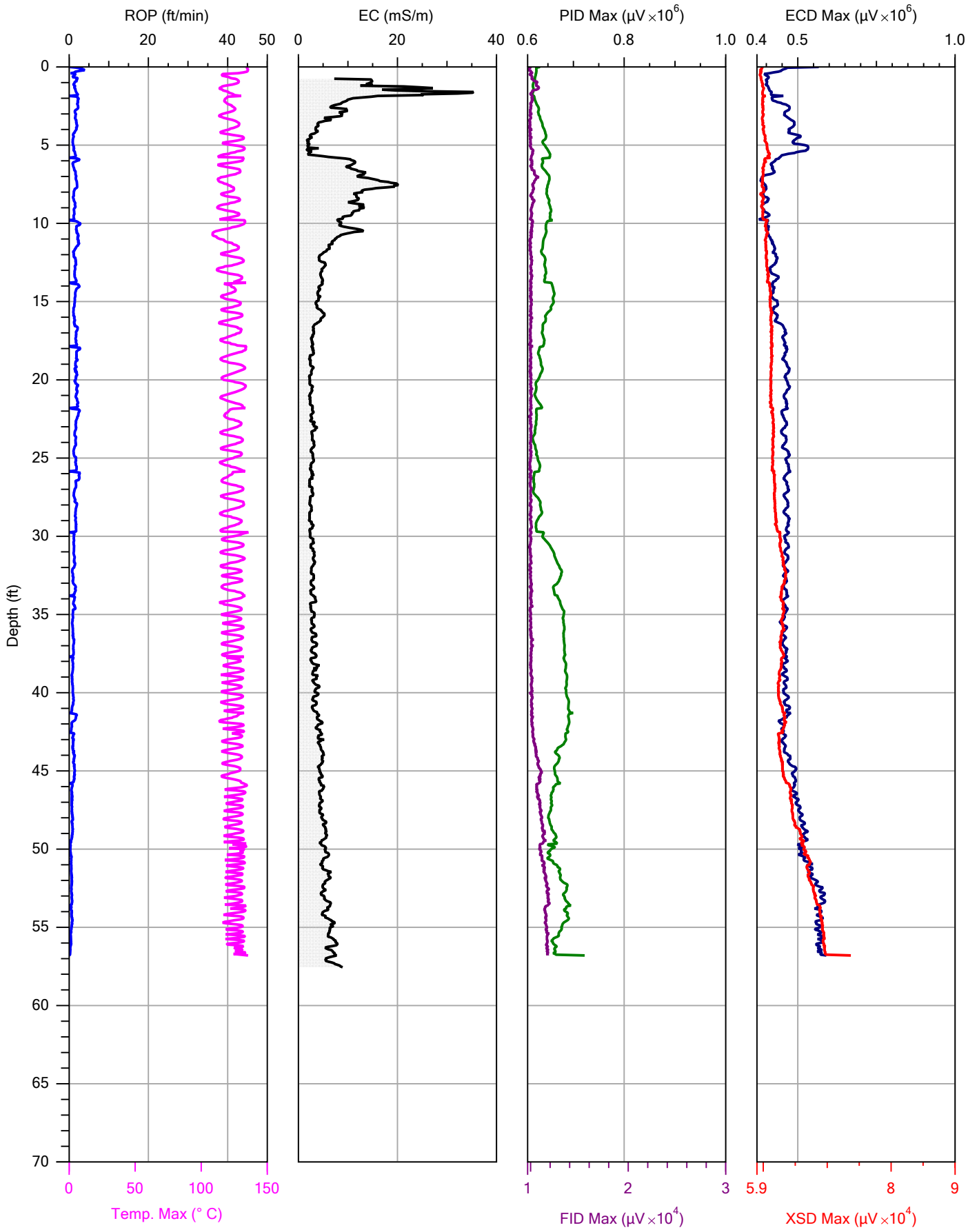
Project ID: Infineon	Client: ERM	Location: El Segundo



CASCADE
DRILLING | TECHNICAL SERVICES

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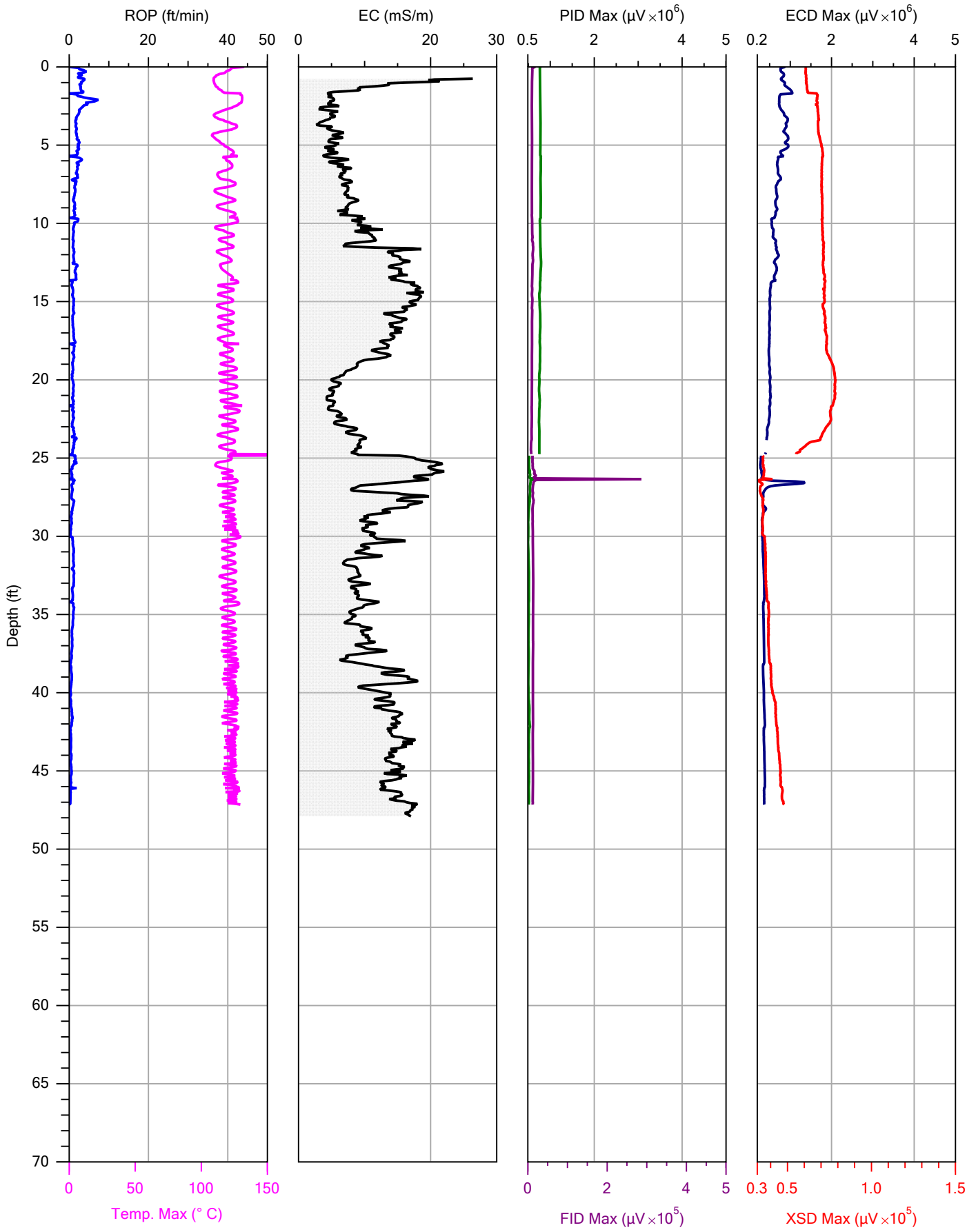

CASCADE
DRILLING | TECHNICAL SERVICES

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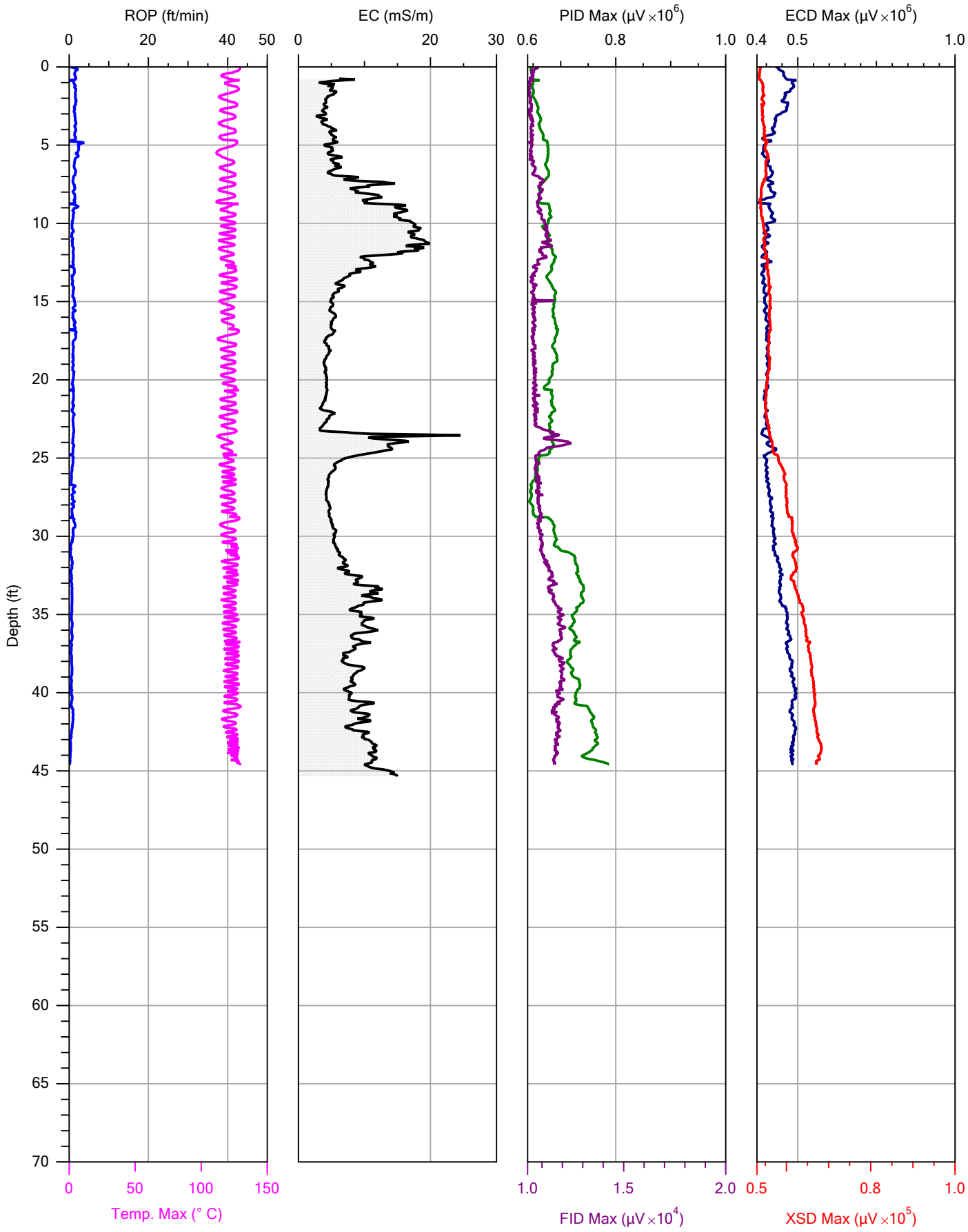
Project ID: Infineon	Client: ERM	Location: El Segundo



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DRILLING | TECHNICAL SERVICES

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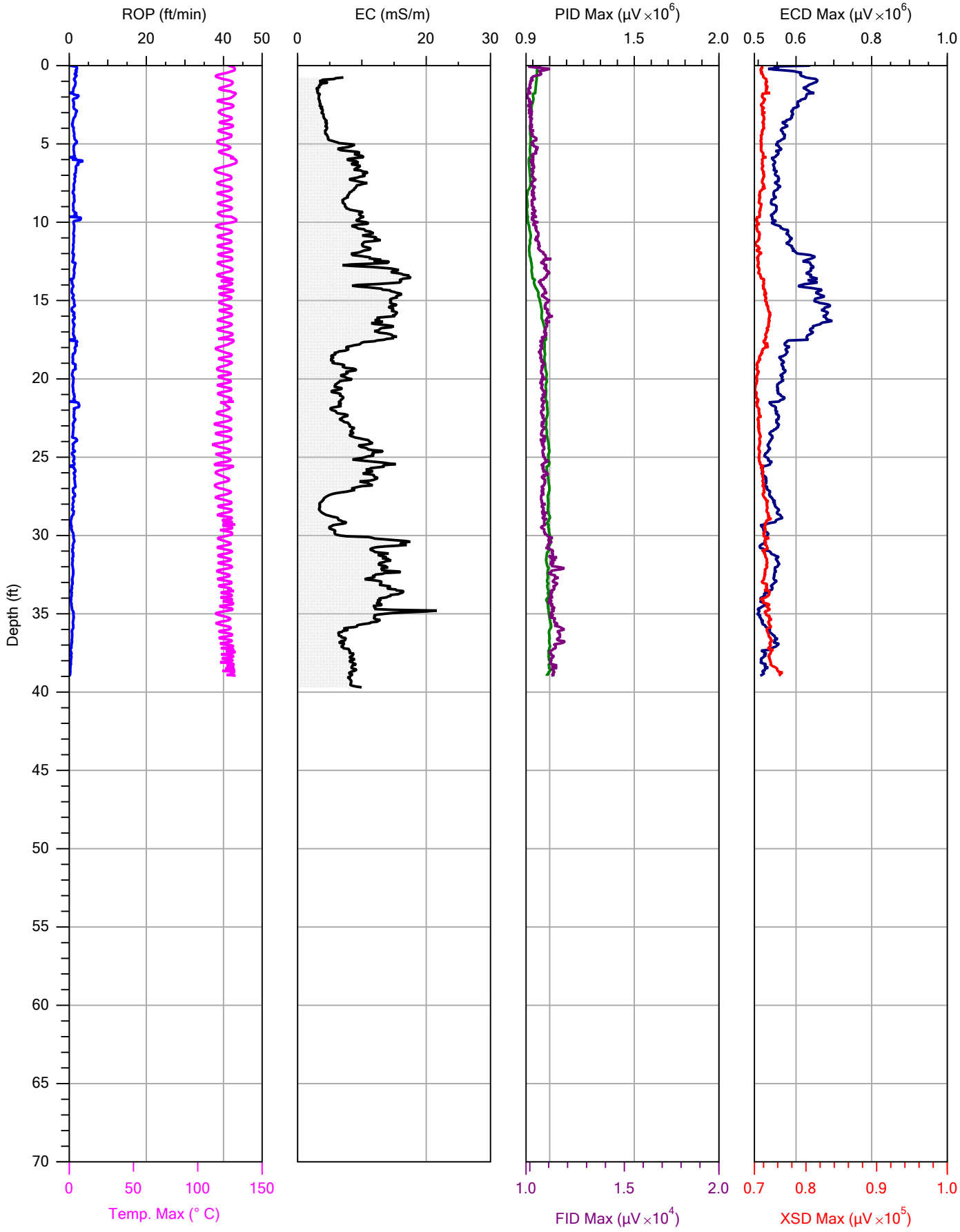
Project ID: Infineon	Client: ERM	Location: El Segundo



CASCADE
DRILLING | TECHNICAL SERVICES

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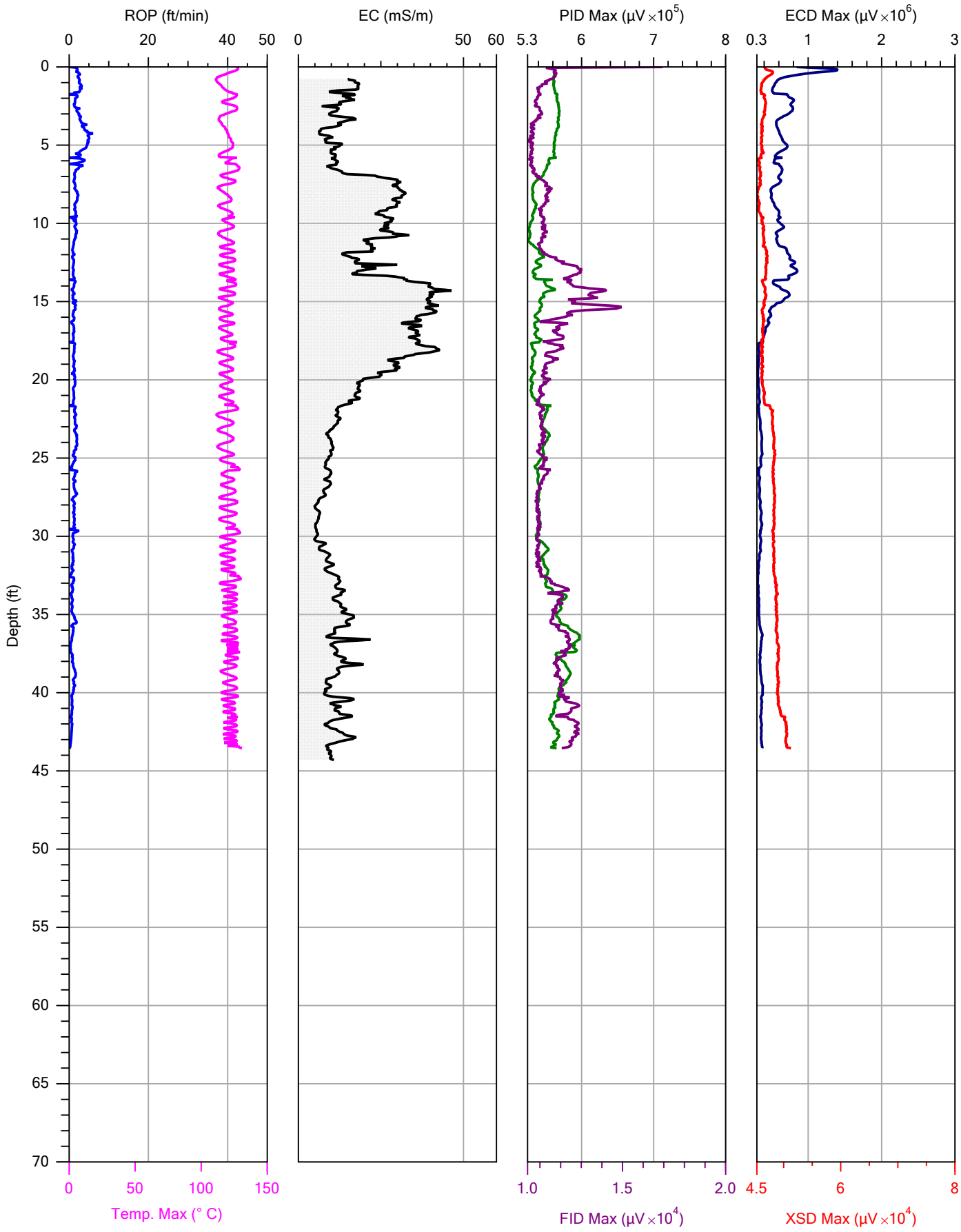
Company: Cascade	Operator: Horrell	Date: 3/8/2018
Project ID: Infineon	Client: ERM	Location: El Segundo



CASCADE
DRILLING | TECHNICAL SERVICES

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Company: Cascade	Operator: Horrell	Date: 3/9/2018
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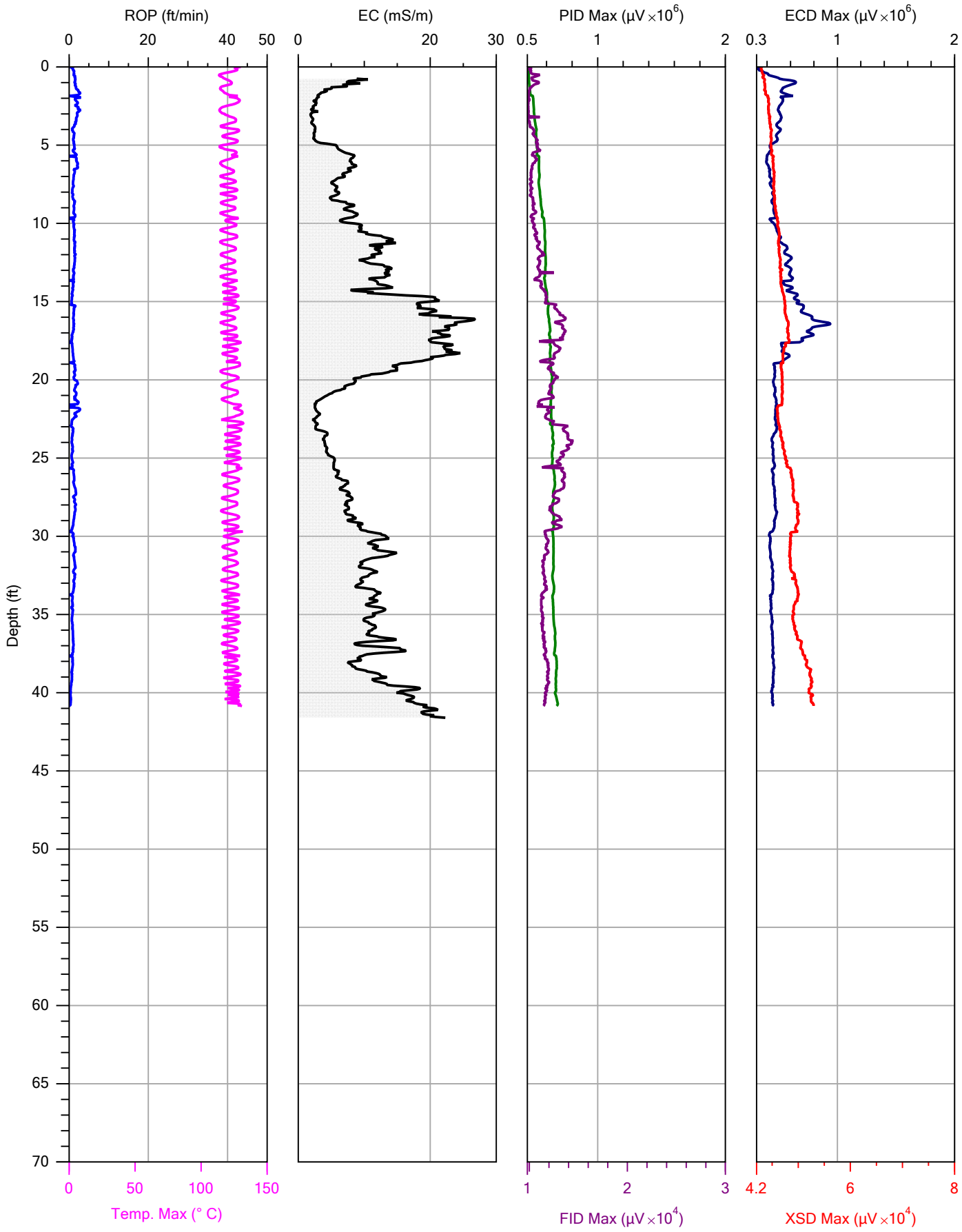
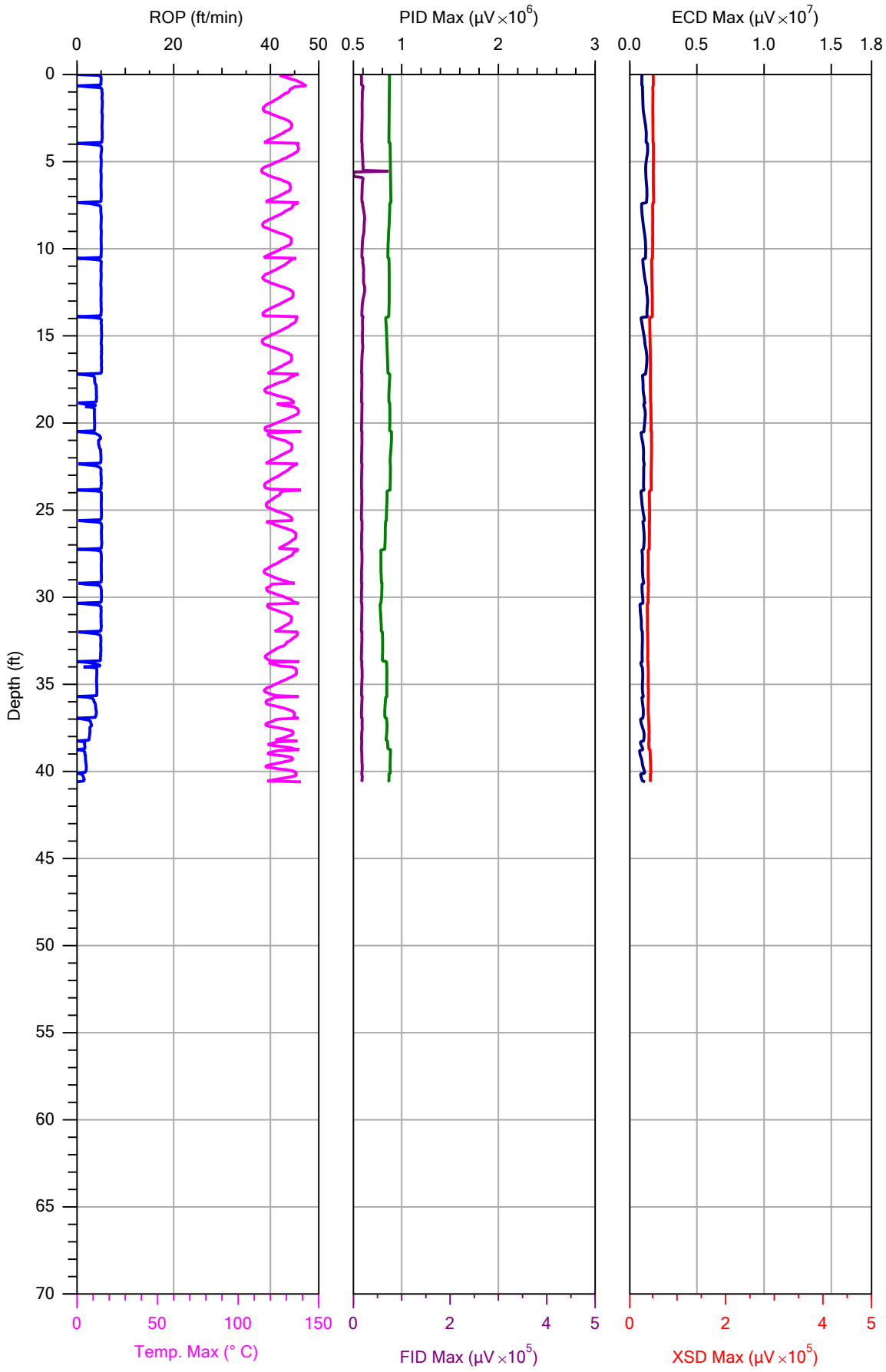


CASCADE
DRILLING | TECHNICAL SERVICES

		File: MIP-B2-08.MIP
Company: Cascade	Operator: Horrell	Date: 3/9/2018
Project ID: Infineon	Client: ERM	Location: El Segundo

Membrane Interface Probe Data Plots – High Range Scales



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DRILLING | TECHNICAL SERVICES

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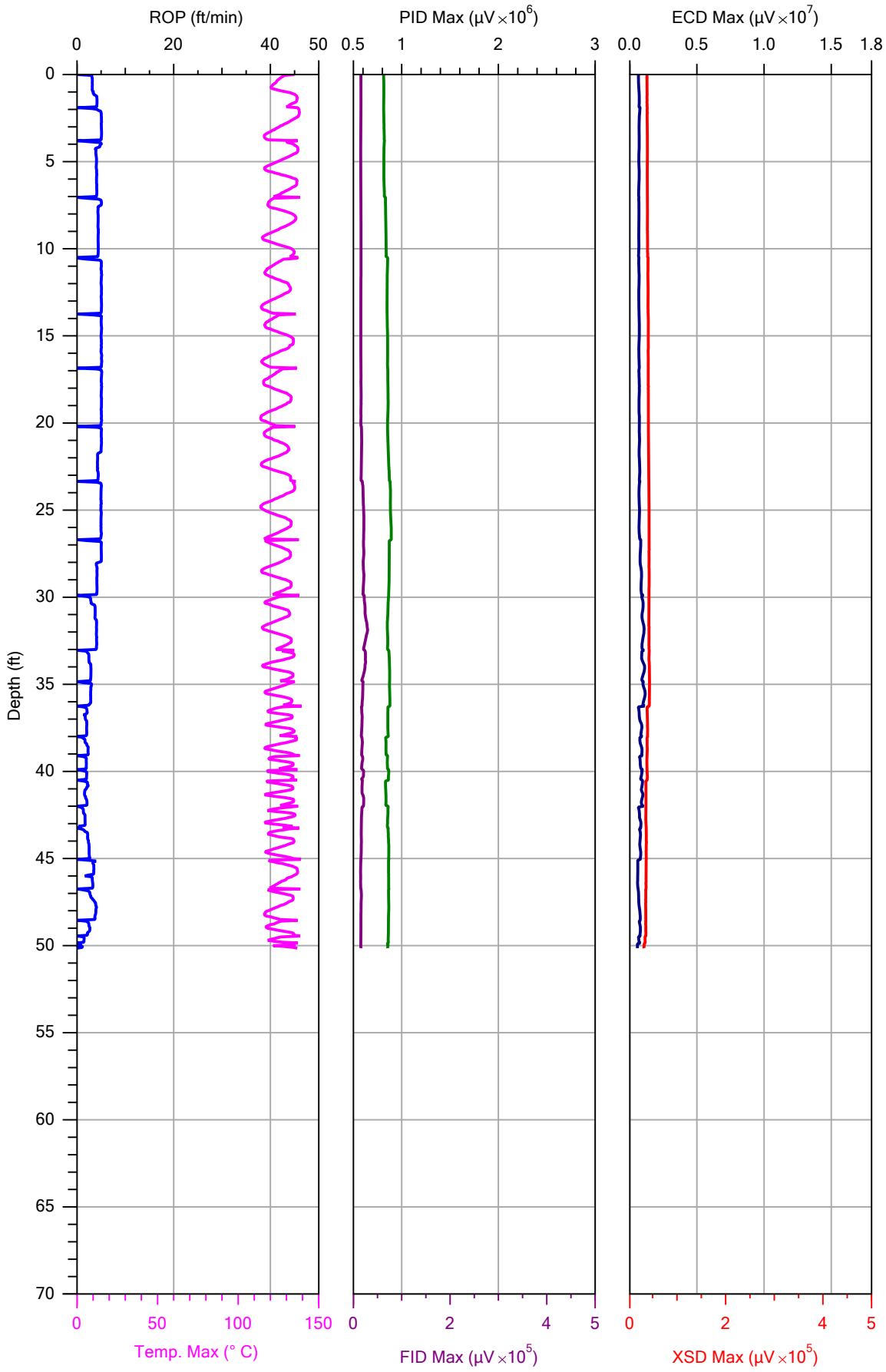
Project ID: Infineon	Client: ERM	Location: El Segundo



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DRILLING | TECHNICAL SERVICES

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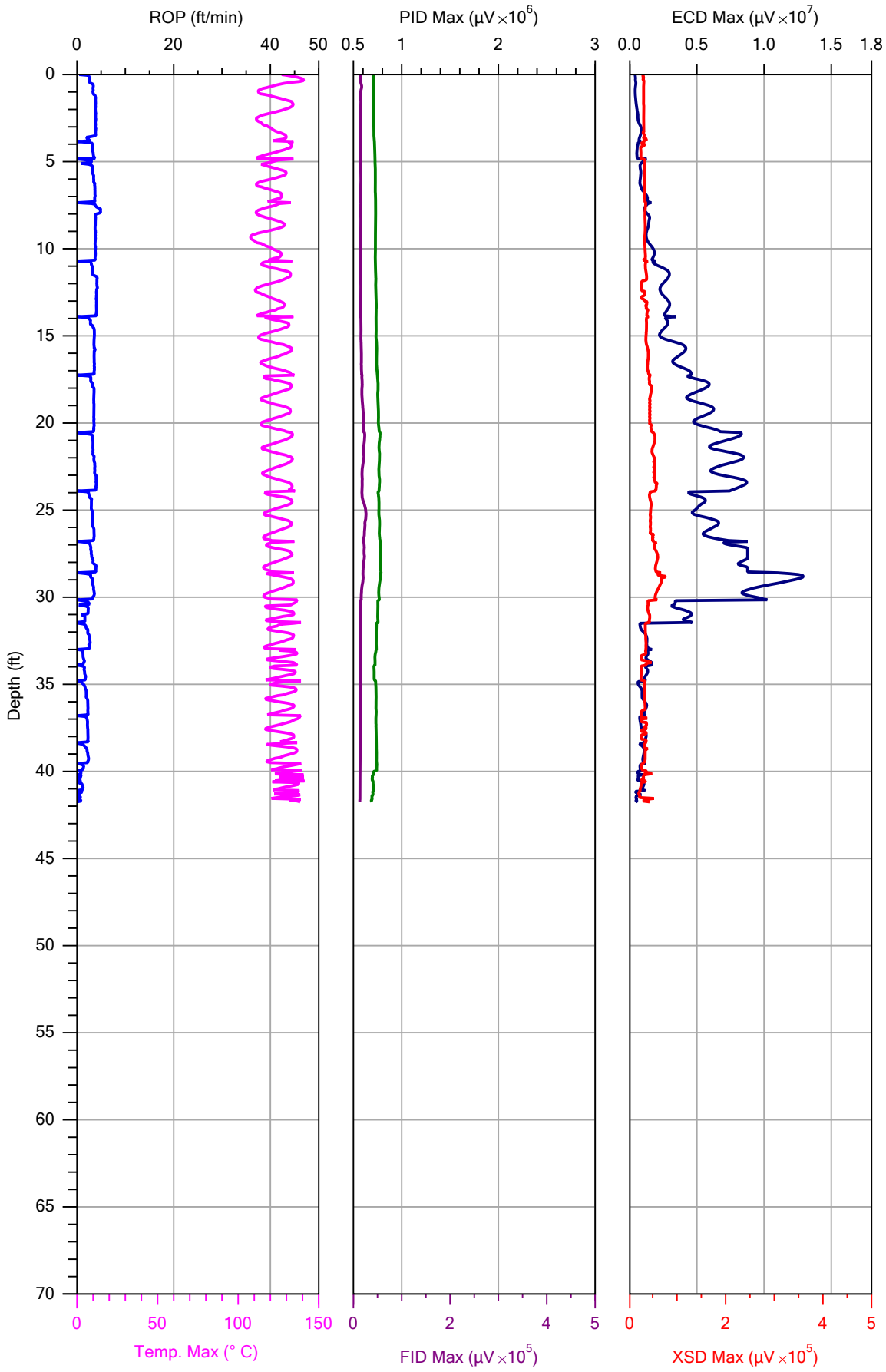
Project ID: Infineon	Client: ERM	Location: El Segundo



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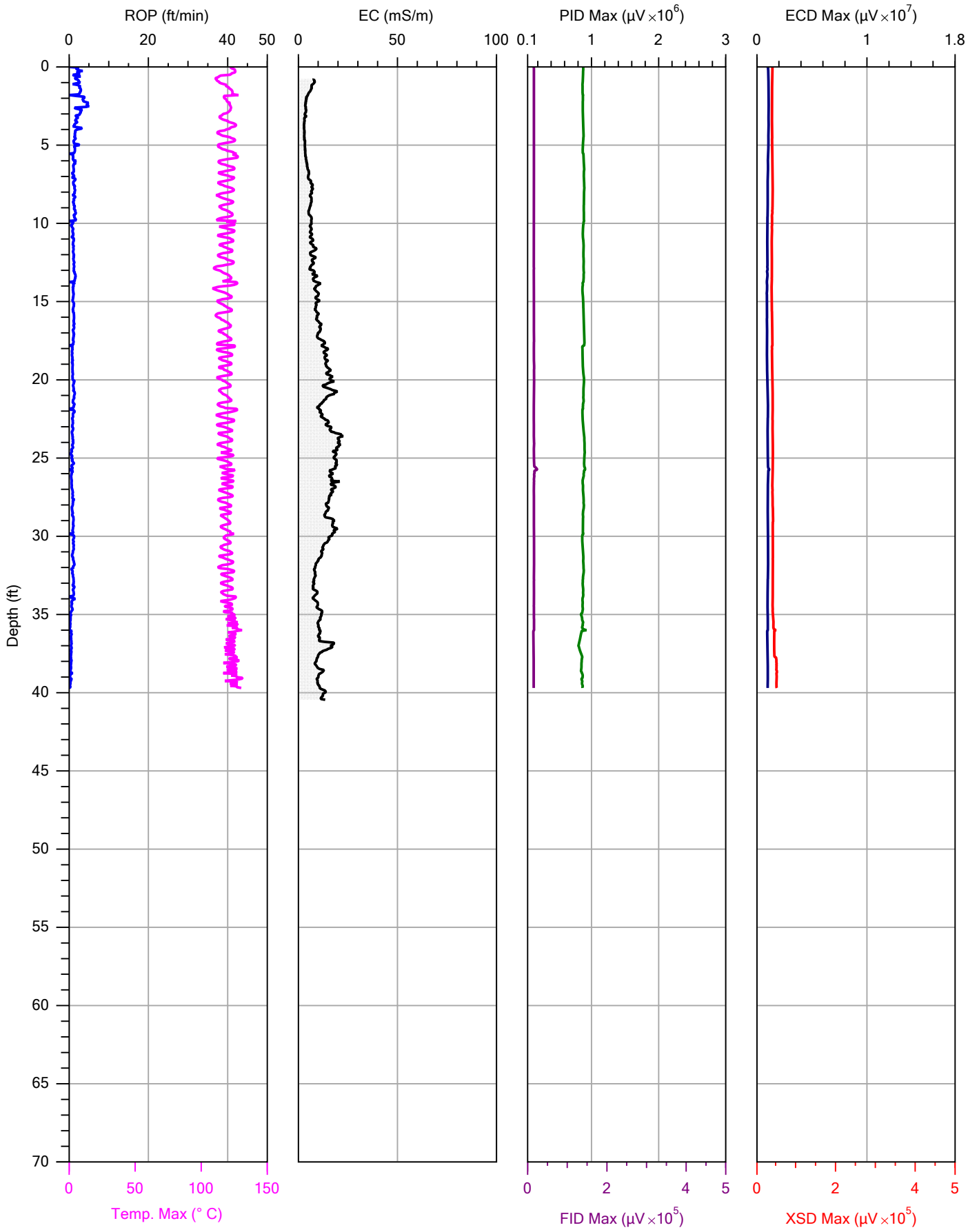

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DRILLING | TECHNICAL SERVICES

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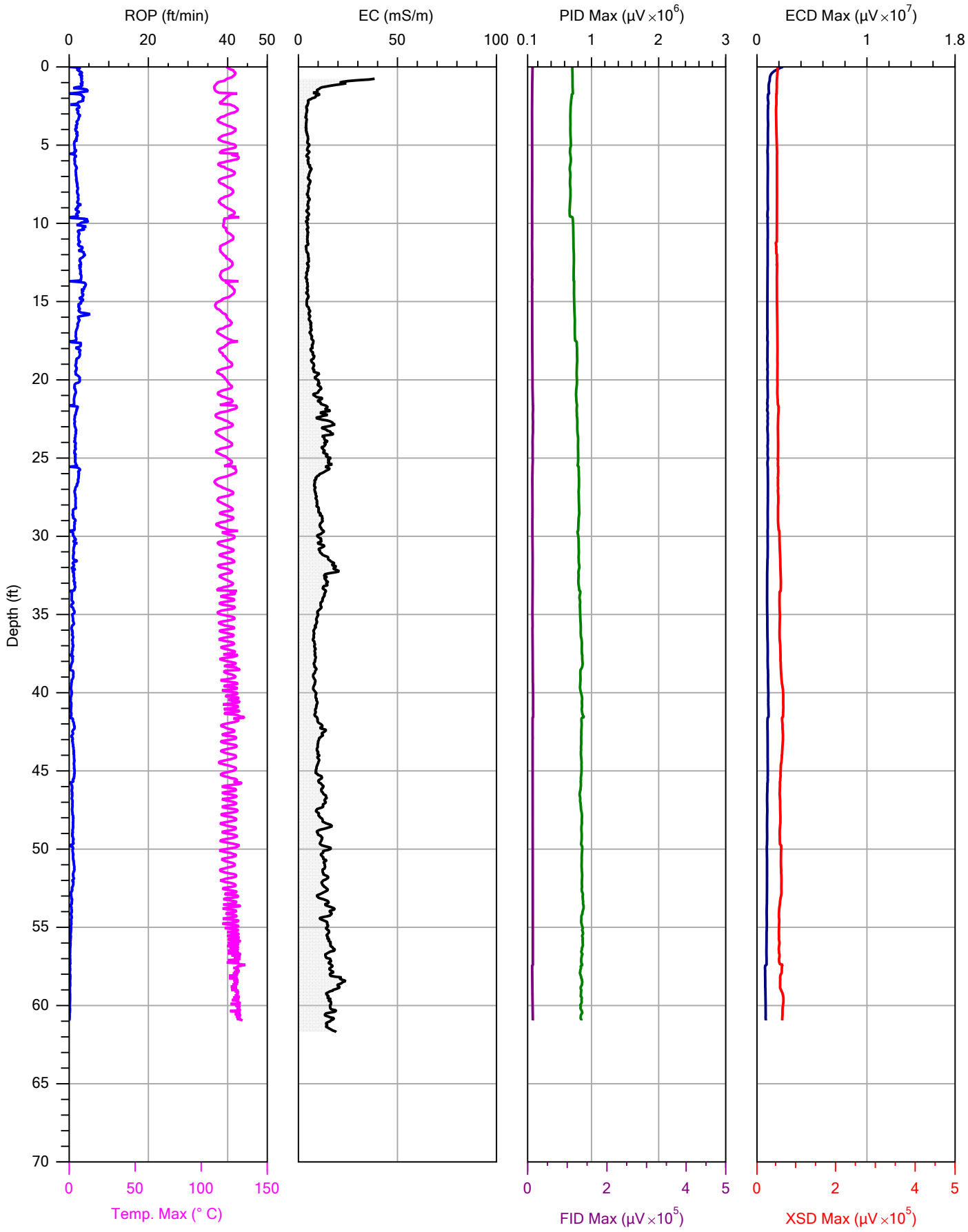

CASCADE
DRILLING | TECHNICAL SERVICES

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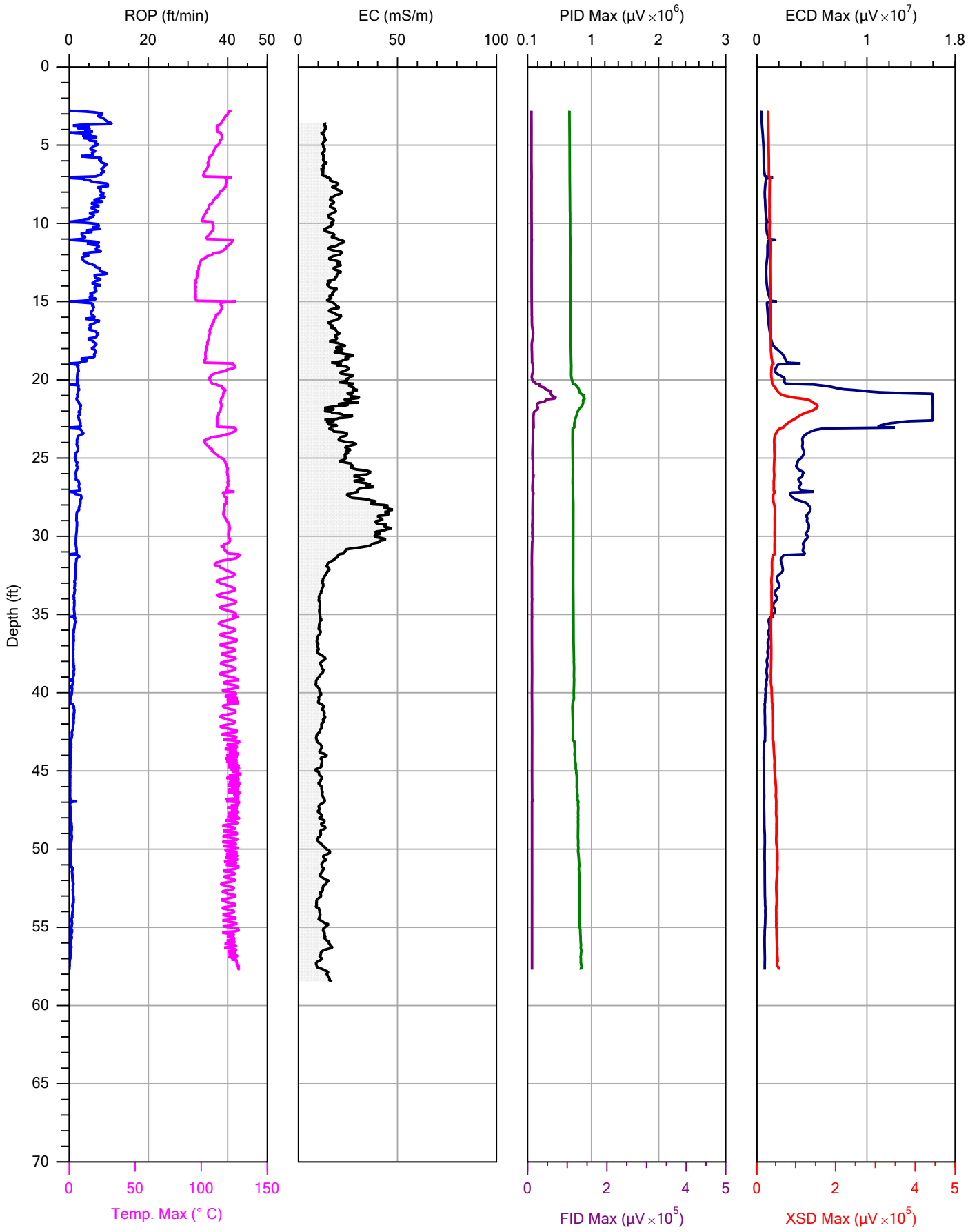

CASCADE
DRILLING | TECHNICAL SERVICES

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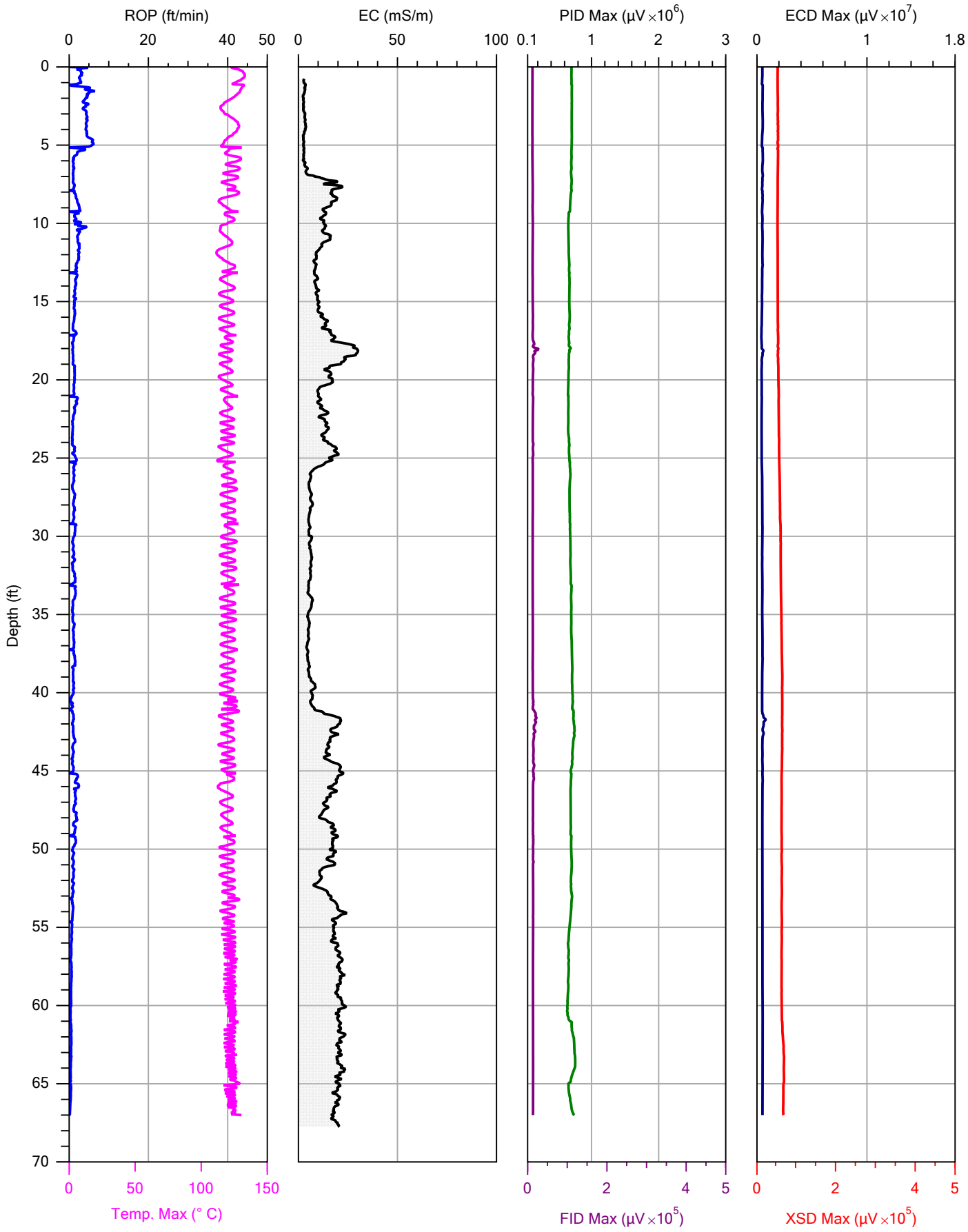

CASCADE
DRILLING | TECHNICAL SERVICES

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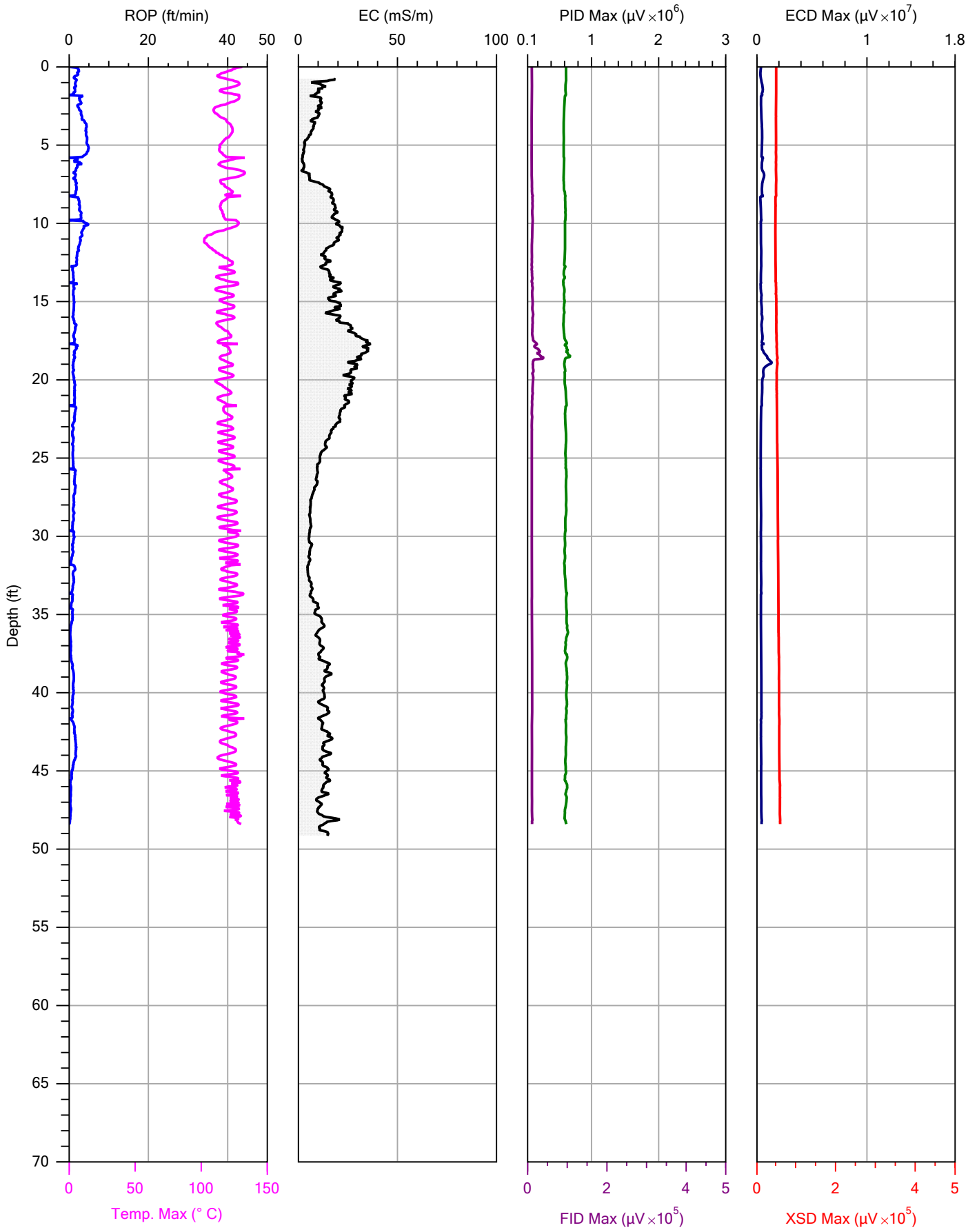

CASCADE
DRILLING | TECHNICAL SERVICES

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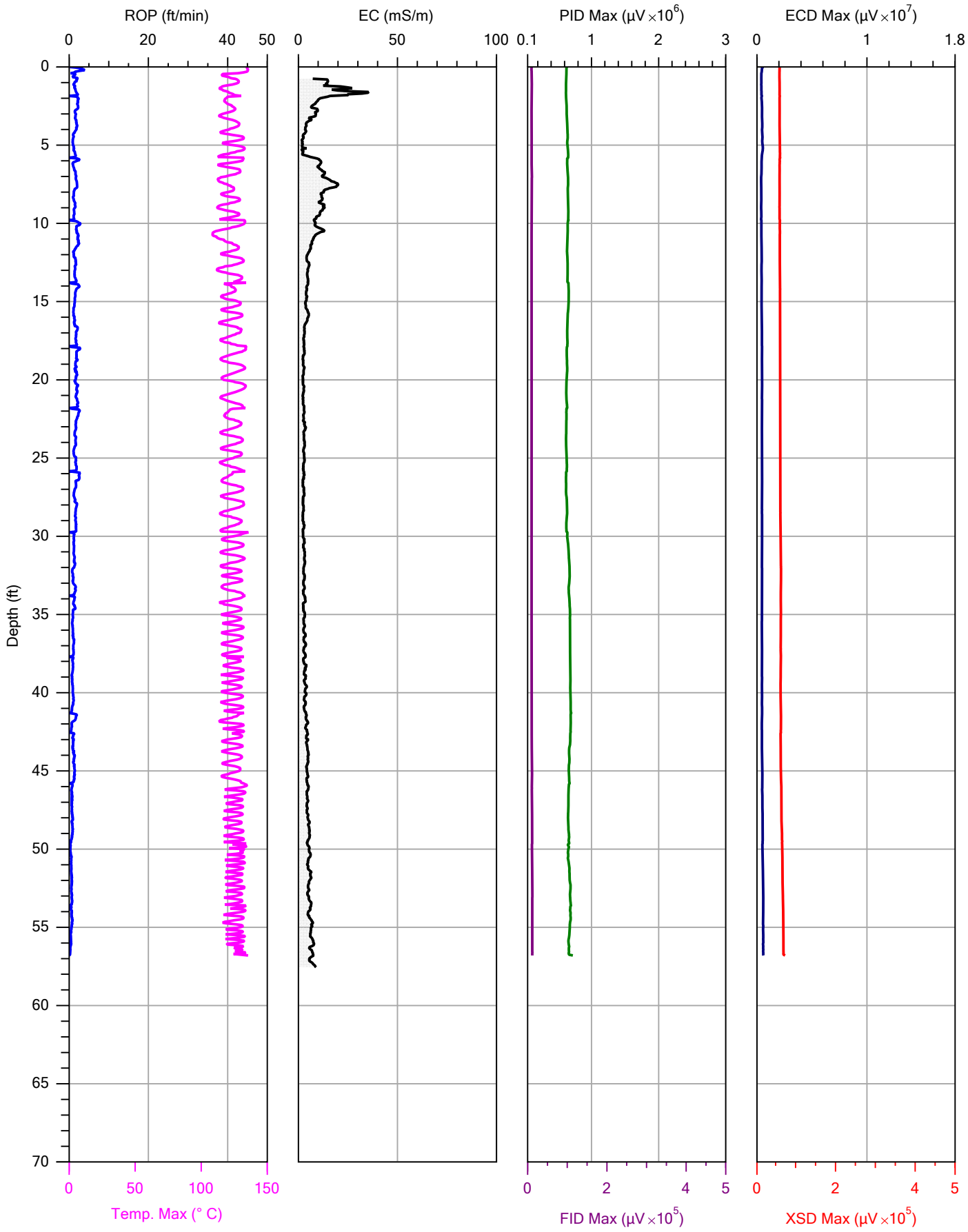

CASCADE
DRILLING | TECHNICAL SERVICES

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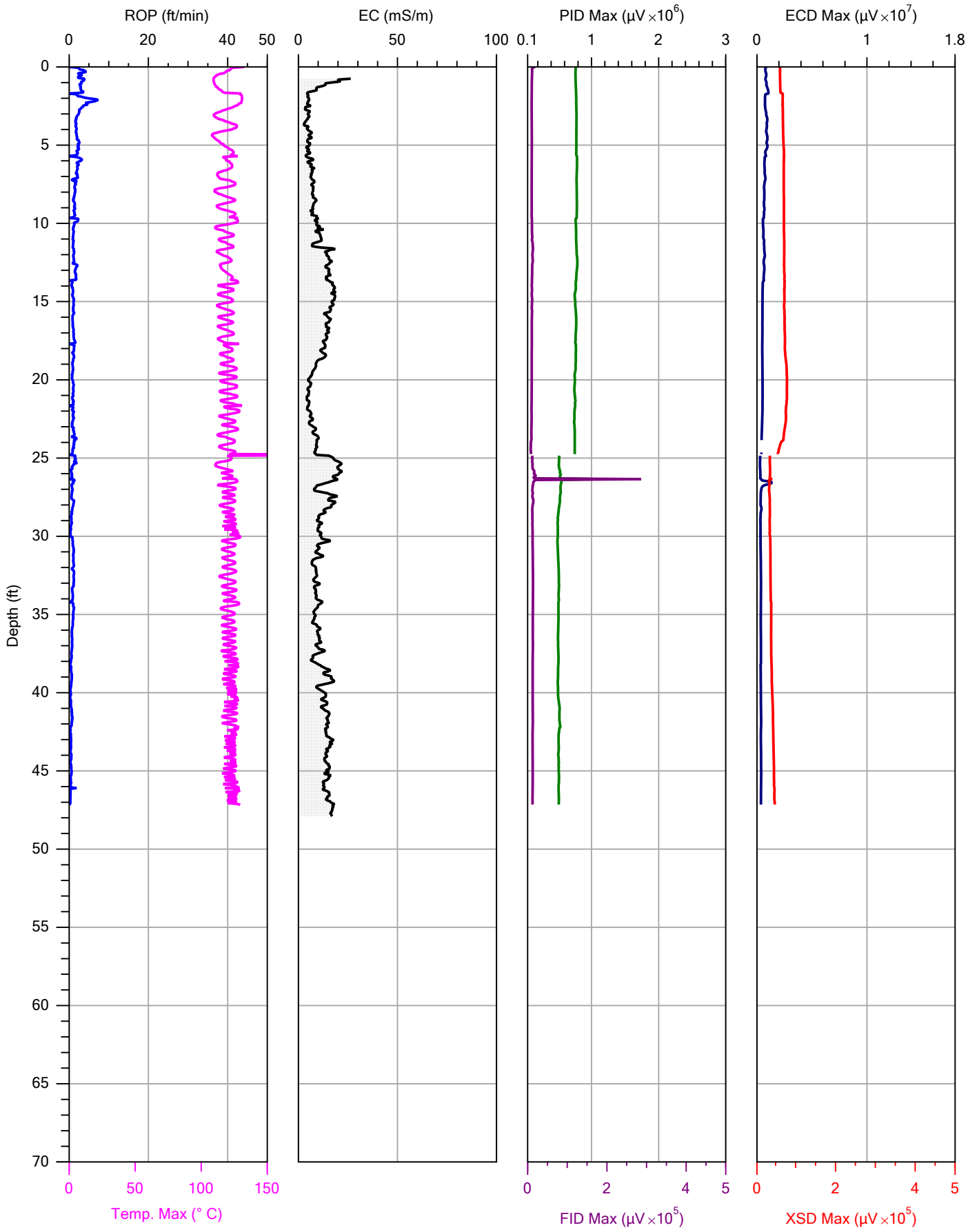

CASCADE
DRILLING | TECHNICAL SERVICES

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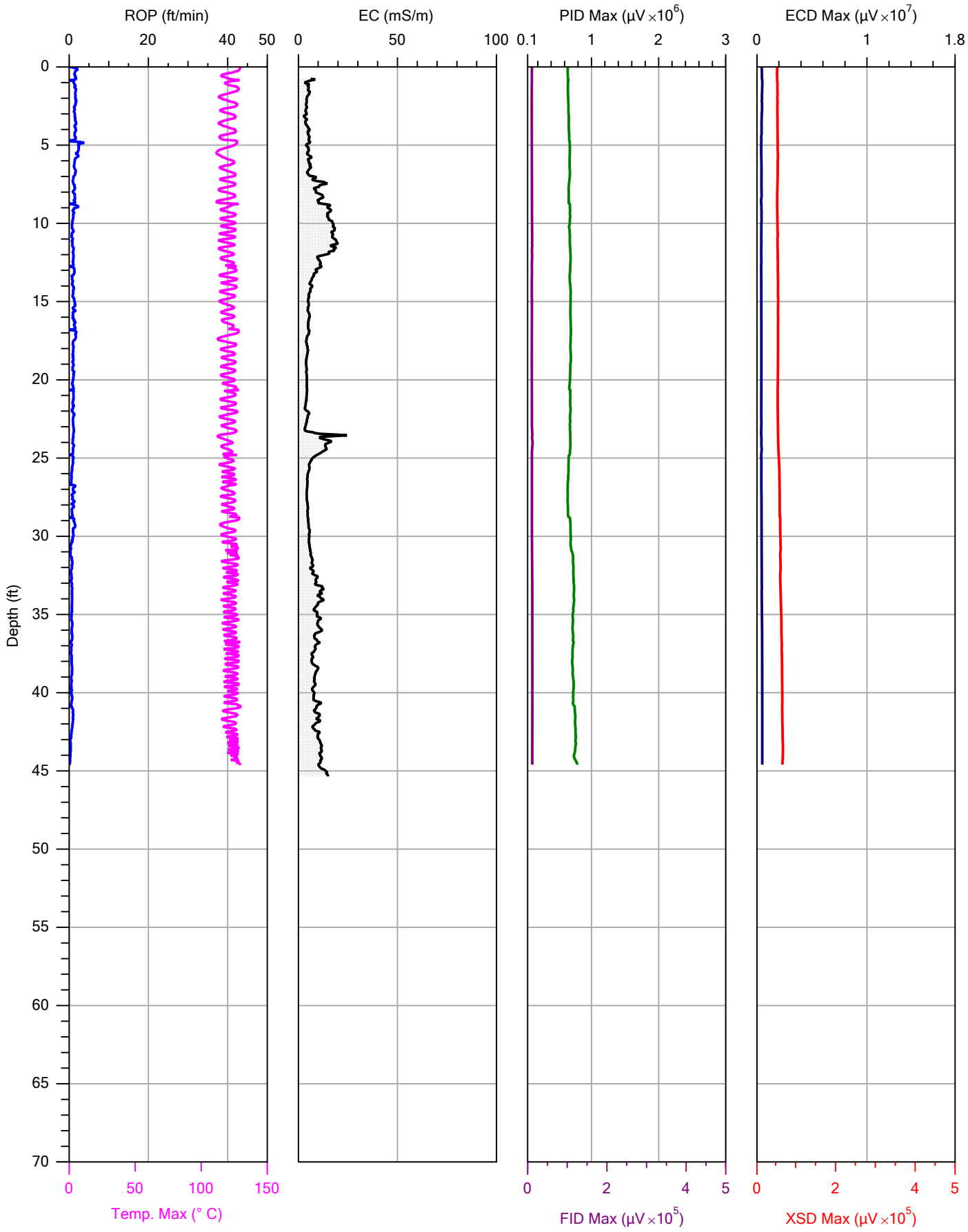
Project ID: Infineon	Client: ERM	Location: El Segundo



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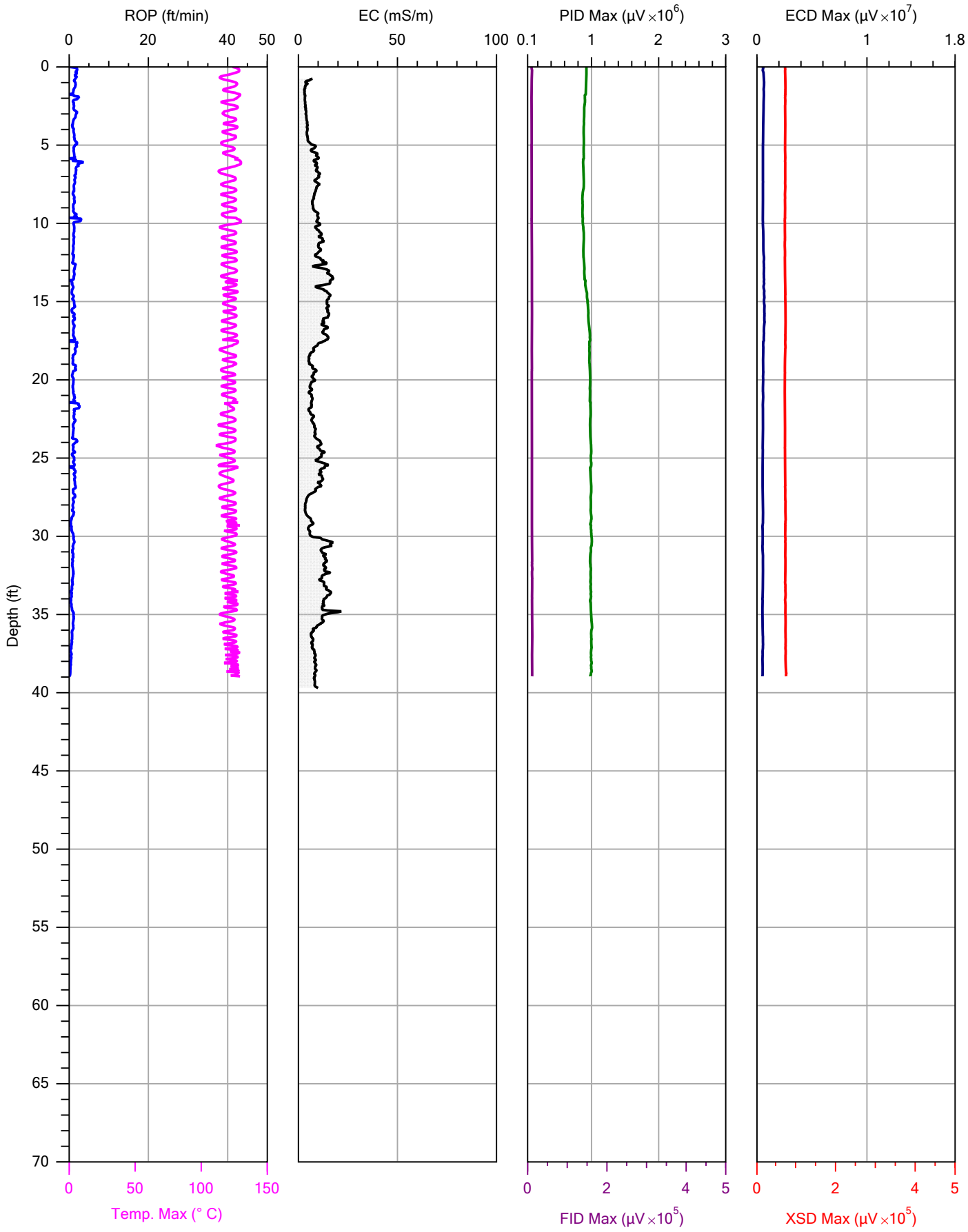

CASCADE
DRILLING | TECHNICAL SERVICES

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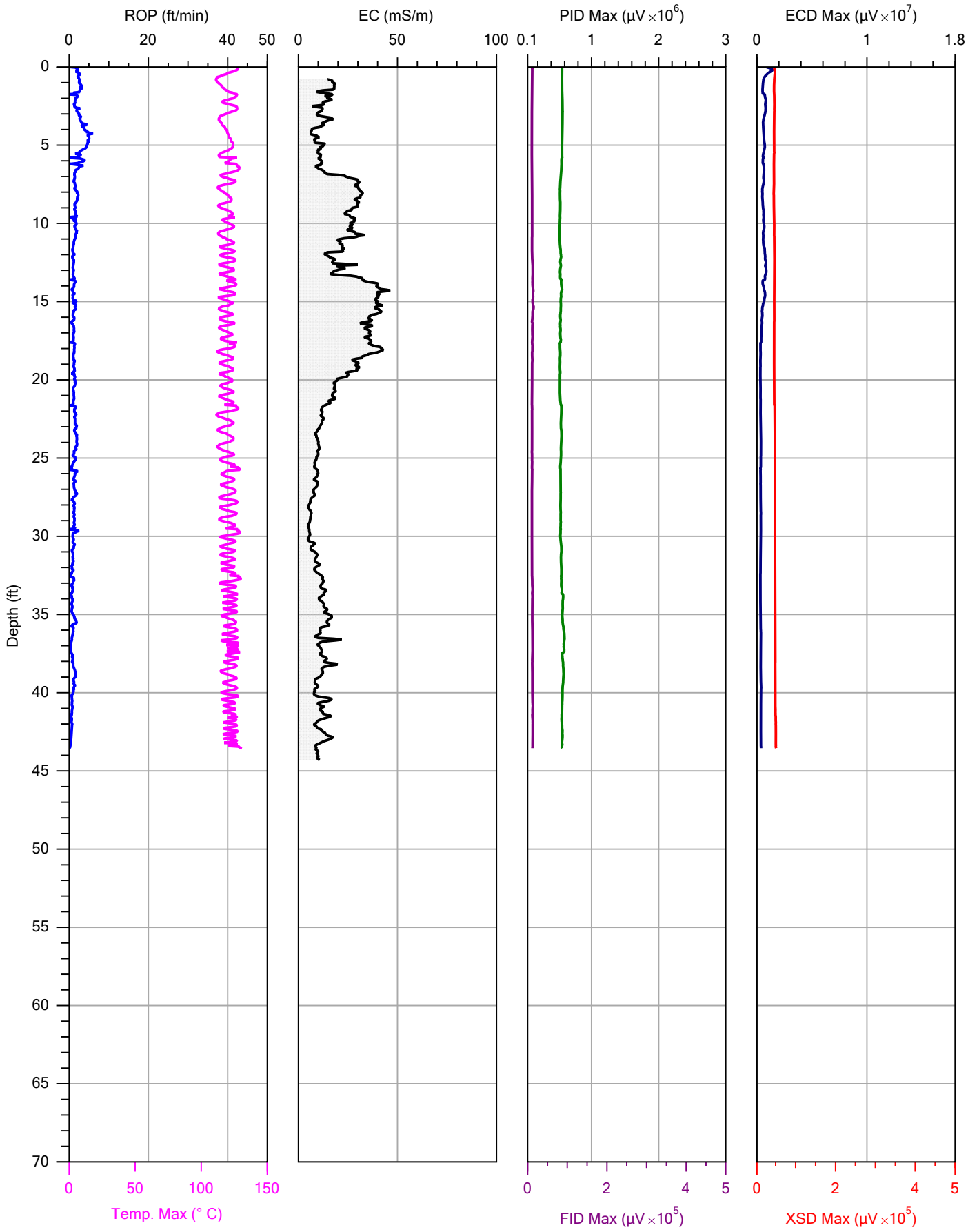
Project ID: Infineon	Client: ERM	Location: El Segundo



CASCADE
DRILLING | TECHNICAL SERVICES

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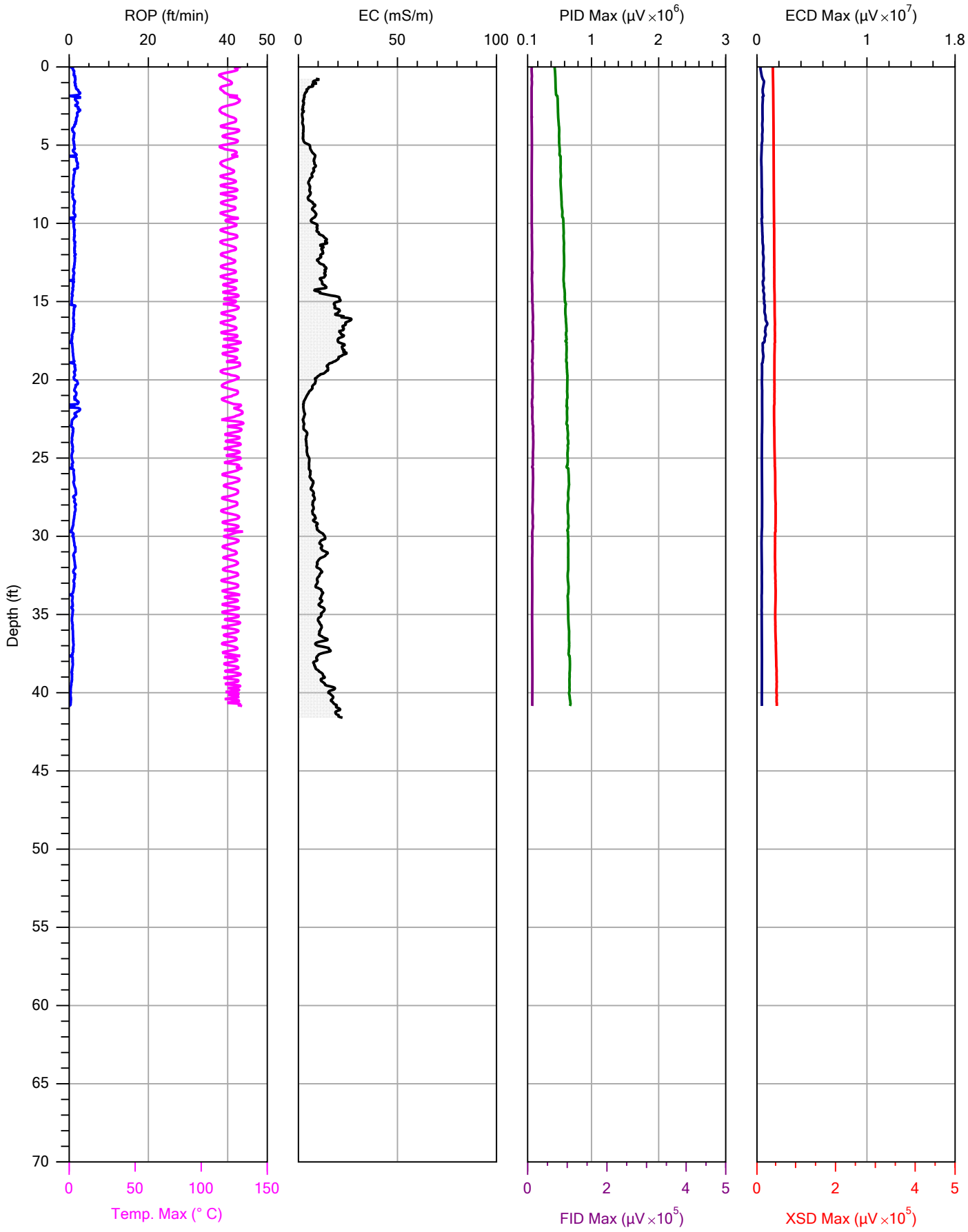
Project ID: Infineon	Client: ERM	Location: El Segundo



CASCADE
DRILLING | TECHNICAL SERVICES

		File: MIP-B2-08.MIP
Company: Cascade	Operator: Horrell	Date: 3/9/2018
Project ID: Infineon	Client: ERM	Location: El Segundo

Reference Material

The sections below provide information regarding the Cascade Personnel present at the site during the field activities, the specific equipment used during field activities, and background information on the MIP system.

Cascade Personnel

The following personnel were present during field activities at the Site:

- Mr. Chris Horrell, Cascade Technical Services (Site Characterization Analytical Chemist)

Equipment

The following equipment was utilized during field activities at the Site:

- Cone Penetrometer Test Rig
- Geoprobe 66 Series Direct Push Drill Rig
- MIP Controller (Nitrogen Flow and Heater)
- Geoprobe FI 6000 Computer
- 5890 Gas Chromatograph
- Electrical Conductivity
- ECD (Electron Capture Detector)
- XSD (Halogen Specific Detector)
- PID (Photo Ionization Detector) 10.2 eV Lamp
- FID (Flame Ionization Detector)
- 150' MIP Trunkline
- 1.75" O.D. MIP Probe
- 1.75" O.D. Drive Rods
- Ultra-High Purity Nitrogen
- Ultra-High Purity Hydrogen

MIP System Overview

The MIP is commonly used for quickly determining the locations of volatile organic compound (VOC) source zones and plumes. The MIP is most valuable in terms of its ability to provide "spatial correspondence", meaning that where the MIP detector response show peaks, there is likely to be elevated soil and groundwater concentrations. The MIP can also be used to provide extremely valuable data to streamline subsequent investigative tasks and improve the overall efficiency and accuracy of the site investigation. Vertical profiles, cross sectional views and 3D images of contaminant distribution can all be produced from the electronic data generated by the MIP logs. The unique capability of providing reliable, real-time information allows for informed and timely decision making in the field. The MIP works by heating the soils and groundwater adjacent to the probe to 120 degrees C. This volatilizes the VOCs and allows the VOCs to transfer through a Teflon membrane via a combination of concentration and pressure gradients. These VOCs are then swept into a nitrogen gas loop that carries these vapors to a series of detectors housed at the surface. Continuous chemical profiles are generated from each hole. Electrical conductivity of the soil is also measured and these logs can be compared to the chemical logs to better understand the relationship between the lithology and the contaminant distribution. The MIP technology is only appropriate for VOCs. The following section discusses the various detection systems that are commonly used with the MIP system.

Detector Overview

- ECD – Electron Capture Detector uses a radioactive Beta emitter (electrons) to ionize some of the carrier gas and produce a current between a biased pair of electrodes. When organic molecules contain electronegative functional groups, such as halogens, phosphorous, and nitro groups pass by the detector, they capture some of the electrons and reduce the current measured between the electrodes.
- XSD – The Halogen Specific Detector converts compounds containing halogens to their oxidation products and free halogen atoms by oxidative pyrolysis. These halogen atoms are adsorbed onto the activated platinum surface of the detector probe assembly resulting in an increase thermionic emission. This emission current provides a corresponding voltage that is measured via an electrometer circuit in the detector controller.
- PID – Photo Ionization Detector sample stream flows through the detector's reaction chamber where it is continuously irradiated with high energy ultraviolet light. When compounds are present that have a lower ionization potential than that of the irradiation energy (10.2 electron volts with standard lamp) they are ionized. The ions formed are collected in an electrical field, producing an ion current that is proportional to compound concentration. The ion current is amplified and output by the gas chromatograph's electrometer.
- FID – Flame Ionization Detector consists of a hydrogen / air flame and a collector plate. The effluent from the GC (trunkline) passes through the flame, which breaks down organic molecules and produces ions. The ions are collected on a biased electrode and produce an electric signal.

MIP Data Collection

- Depth - Data is collected every 0.05 feet, or twenty points per foot.
- Electrical Conductivity - Electrical Conductivity data is measured/collected in milli-siemens per Meter (ms/M). The conductivity of soils is different for each type of media. Finer grained sediments, such as silts or clays, will typically have a higher EC signal. While coarser grained sediments, sands and gravel, will typically have a lower EC signal.
- Rate of Penetration - Rate of penetration (ROP) is measured/collected in feet per minute (ft/min). Speed is an indication of the advancement rate of the MIP probe. In order to allow

for adequate heating of the MIP tooling, the MIP's ROP should not exceed one foot per minute.

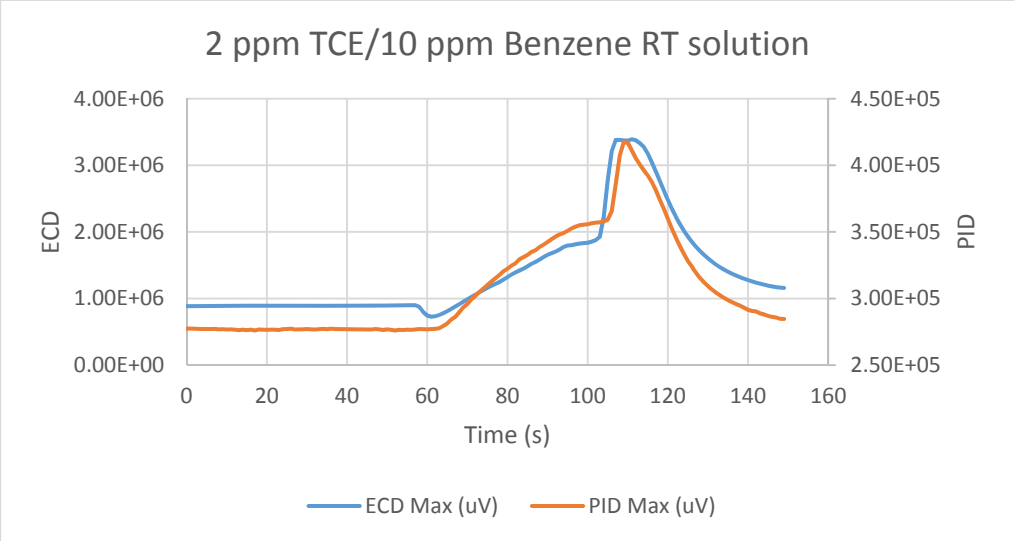
- Temperature - Temperature data is measured/collected in Degrees Celsius. Temperature is an indication of the physical temperature of the MIP block. Minimum and Maximum temperature is collected at each vertical interval. Cascade's temperature protocol indicates that the MIP probe temperature shall maintain a minimum temperature of 90 Degrees Celsius.
- Pressure - Pressure data is measured/collected in PSI. The pressure readings represent the pressure being delivered to the MIP's nitrogen gas line. Deviations greater than of 1.5 PSI outside of the starting pressure indicate a system leak or obstruction is present.
- Detector (XSD, ECD, PID, FID) - Detector responses are measured/collected in micro Volts (uV). Detector responses are an indication of relative contaminant responses. Minimum and Maximum detector responses are collected at each vertical interval.

Response Testing

Response testing (RT) is an integral part of ensuring the quality of data from the MIP system. Response testing is conducted before and after each log. This ensures the validity of the data and the integrity of the system. The RT provides a traceable indication that the MIP system detectors are adequately responding and allows the carrier gas trip time to be calculated on the physical components of the system.

Cascade uses acceptance criteria to evaluate the RTs. The acceptable criteria for an RT is defined for specified concentrations of RT solution and a specified N2 trunkline flow rate. Documenting the RTs will provide a level of quality assurance for each MIP project and will also allow operators and data reviewers to identify systems in need of maintenance.

The trip time is measured by recording the time between the moment when the VOA is placed over the membrane and the response of the detectors, as viewed on the MIP data acquisition unit. The baseline and peak response value are also recorded for comparison with other MIP response tests. The trip time is entered manually into the data acquisition system account for the time it takes for compounds in the subsurface to travel the length of the trunkline during the MIP boring.

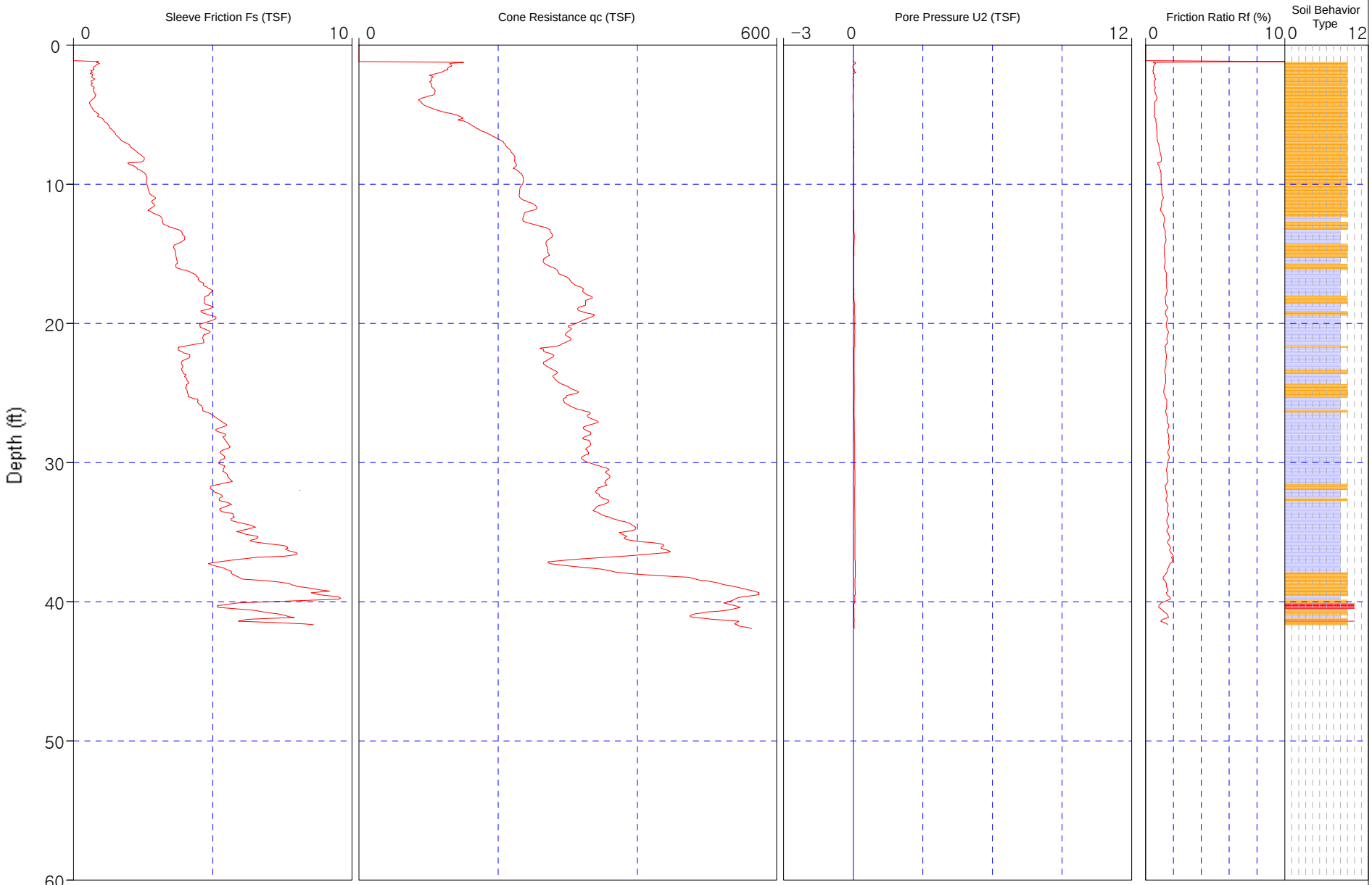


Appendix A – Fugro CPT Plots

Job Number: 04.09180004
Operator: D. Garza
Location: El Segundo, CA

CPT Number: CPTMIP-B1-01
Date: 01-Mar-2018
Elevation: 0.00

Coordinates: 33.919067 -118.400849
Cone Number: CP15-CF75PB7SN2-P1E1 2732



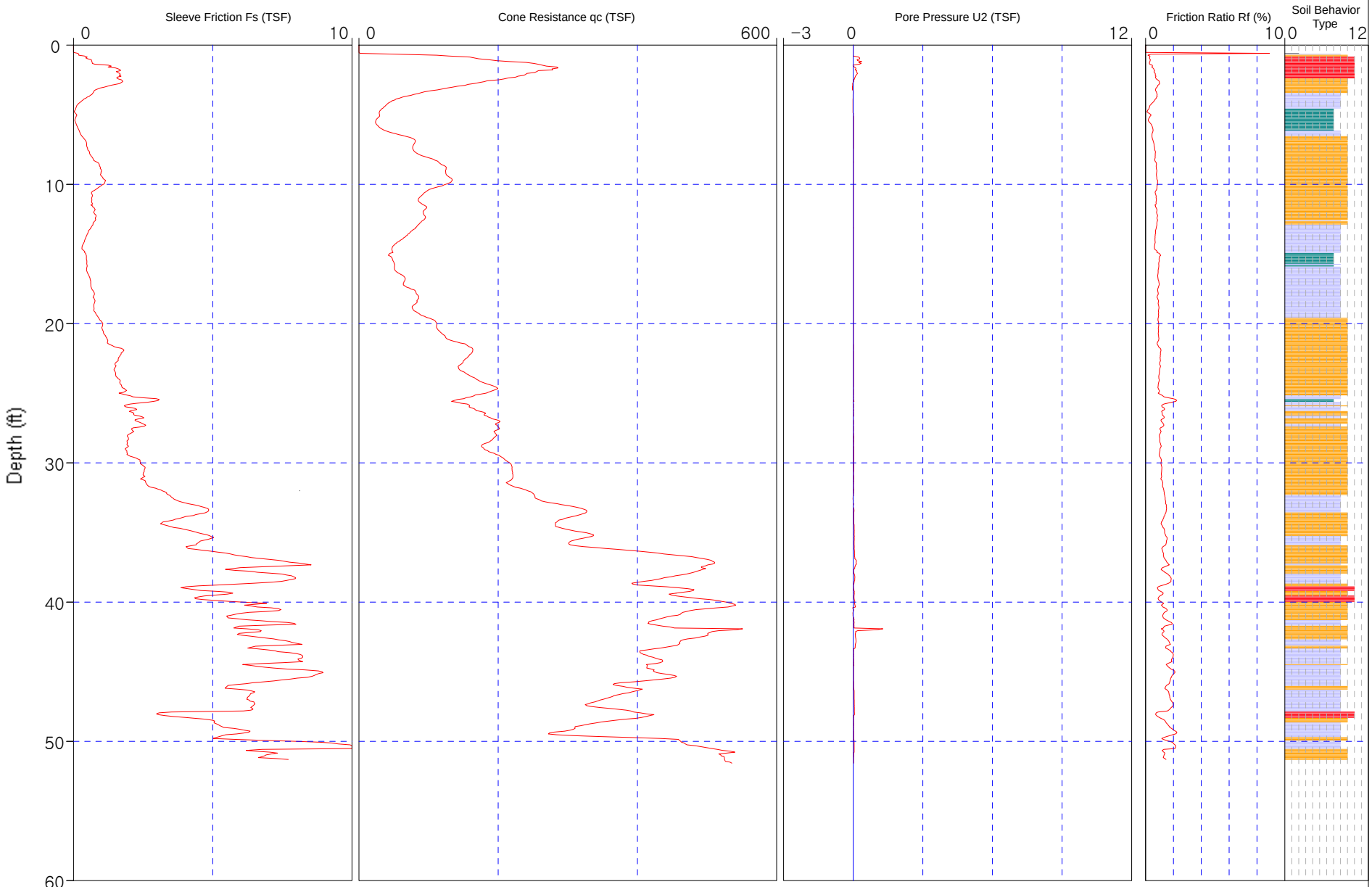
(1) sensitive fine grained (OL-CH)
(2) organic material (OL-OH)
(3) clay (CH)
(4) silty clay to clay (CL-CH)
(5) clayey silt to silty clay (MH-CL)
(6) sandy silt to clayey silt (ML-MH)
(7) silty sand to sandy silt (SM-ML)
(8) sand to silty sand (SM-SP)
(9) sand (SW-SP)
(10) gravel to gravelly sand (SW-GW)
(11) very stiff fine grained* (CH-CL)
(12) sand to clayey sand* (SC-SM)

Robertson et al. 1986 *Overconsolidated or Cemented

Job Number: 04.09180004
Operator: D. Garza
Location: El Segundo, CA

CPT Number: CPTMIP-B1-04
Date: 01-Mar-2018
Elevation: 0.00

Coordinates: 33.918319 -118.400464
Cone Number: CP15-CF75PB7SN2-P1E1 2732

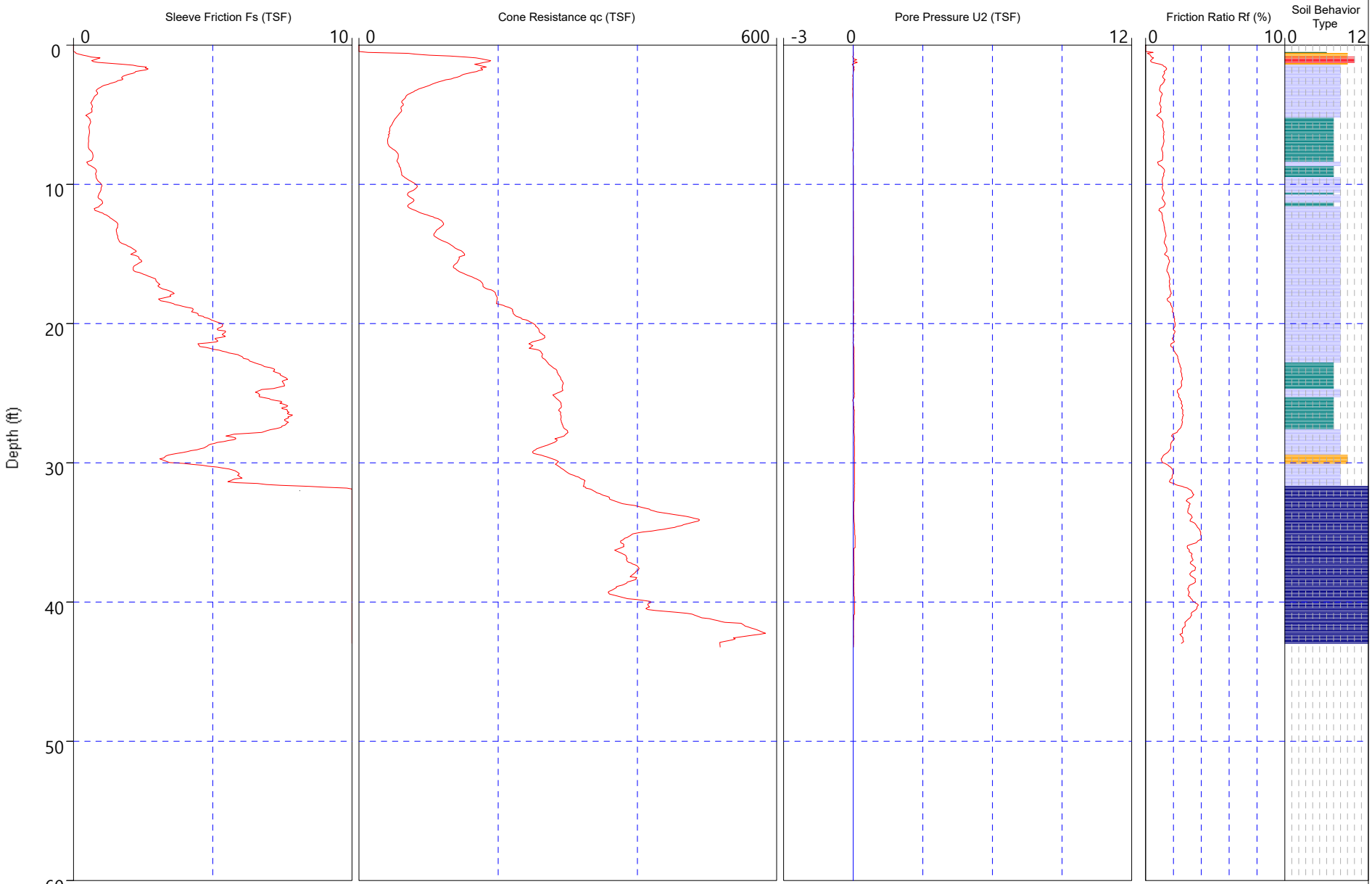


Robertson et al. 1986 *Overconsolidated or Cemented

Job Number: 04.09180004
Operator: D. Garza
Location: El Segundo, CA

CPT Number: CPTMIP-B1-05
Date: 02-Mar-2018
Elevation: 0.00

Coordinates: 33.918298 -118.400937
Cone Number: CP15-CF75PB7SN2-P1E1 2732



Robertson et al. 1986 *Overconsolidated or Cemented

ERM
1920 Main Street, Suite 300
Irvine, CA 92614
Phone: (949) 623-4700
Fax: (949) 623-4711

LOG OF MONITORING WELL: B1-1

Project Number: 0444932
Project Name: Infineon - Block 1
Location: El Segundo, CA
Contractor: Cascade Drilling
Drilling Method: HSA CME 85
Logged By: ML
Reviewed By: OR
Surface Elevation: feet MSL

Date Started: 3/19/2018
Date Completed: 3/19/2018
Total Depth: 81.5 feet
Borehole Diameter: 8" inches
Initial Water Level: feet bgs
Notes:

Depth (ft)	Sample Interval	Sample Number	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations	WELL DIAGRAM
10		B1-5-10	0.1	SP		Dark yellowish orange (10YR 6/6) & light brown (5YR 5/6), fine to medium grained SAND, well sorted	
11				SM		Silty SAND, moderate brown (5YR 4/4)	
22		B1-5-22	0.3	SP		Dark yellowish orange (10YR 6/6), fine to medium grained SAND, well sorted, medium dense, dry	
33		B1-5-33	0.8	SP		Dark yellowish orange (10YR 6/6), medium to coarse grained SAND, well sorted, medium dense, damp	

Portland Cement
Granular Bentonite
#3 Sand
Granular Bentonite
Portland Cement
Granular Bentonite
#3 Sand
Granular Bentonite

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LOG OF MONITORING WELL: B1-1

Project Number: 0444932
Project Name: Infineon - Block 1
Location: El Segundo, CA
Contractor: Cascade Drilling
Drilling Method: HSA CME 85
Logged By: ML
Reviewed By: OR
Surface Elevation: feet MSL

Date Started: 3/19/2018
Date Completed: 3/19/2018
Total Depth: 81.5 feet
Borehole Diameter: 8" inches
Initial Water Level: feet bgs
Notes:

Depth (ft)	Sample Interval	Sample Number	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations
53–54	⧗	B1-5-53	0.7	SP		Greyish orange (10YR 7/4), fine to medium grained SAND, well sorted, medium dense, dry
55–56	⧗		0.8	SP		Grayish orange (10YR 7/4), fine to medium grained SAND, well sorted, dense, dry
60–61	⧗		0.6	SP		Grayish orange (10YR 7/4), fine grained SAND, well sorted, dense, dry
65–66	⧗		1.4	SP		Grayish orange (10YR 7/4), very fine to fine grained SAND, well sorted, medium dense, dry
70–71	⧗		1.3	SP		Grayish orange (10YR 7/4), very fine to fine grained SAND, well sorted, medium dense, dry
75–76	⧗		1.4	SP		Grayish orange (10YR 7/4), very fine to fine grained SAND, well sorted, medium dense, dry
80–81	⧗		2.6	SP		Grayish orange (10YR 7/4), very fine to fine grained SAND, well sorted, medium dense, damp
82						Total Depth - 81.5 feet bgs

WELL DIAGRAM: Portland Cement; Granular Bentonite; #3 Sand; Granular Bentonite; Portland Cement; Granular Bentonite; #3 Sand

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LOG OF MONITORING WELL: B1-2

Project Number: 0444932
Project Name: Infineon - Block 1
Location: El Segundo, CA
Contractor: Cascade Drilling
Drilling Method: HSA CME 85
Logged By: ML
Reviewed By: OR
Surface Elevation: feet MSL

Date Started: 3/23/2018
Date Completed: 3/23/2018
Total Depth: 81.5 feet
Borehole Diameter: 8" inches
Initial Water Level: feet bgs
Notes:

Depth (ft)	Sample Interval	Sample Number	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations	WELL DIAGRAM
1–5							
6	⧗	B1-2-6	1.2	SP		Moderate brown (5YR 3/4), fine to medium grained SAND, well sorted, damp	
7–10							Portland Cement
11–22							
23–24							Granular Bentonite
25	⧗	B1-2-25	0.6	SP		Moderate yellowish brown (10YR 5/4), fine to medium grained SAND, some silt, well sorted, loose to medium dense, wet	#3 Sand
26–31							Granular Bentonite
32	⧗	B1-2-32	0.7	SP		Light brown (5YR 5/4), fine to medium grained SAND, well sorted, medium dense, damp	#3 Sand
33–34							Granular Bentonite
35	⧗		0.8	SP		Moderate yellowish brown (10YR 5/4), fine to medium grained SAND, well sorted, medium dense, damp	
36–39							
40	⧗		0.6	SP		Moderate yellowish brown (10YR 5/4), very fine to fine grained SAND, some silt, well sorted, medium dense, damp	Portland Cement
41							

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LOG OF MONITORING WELL: B1-2

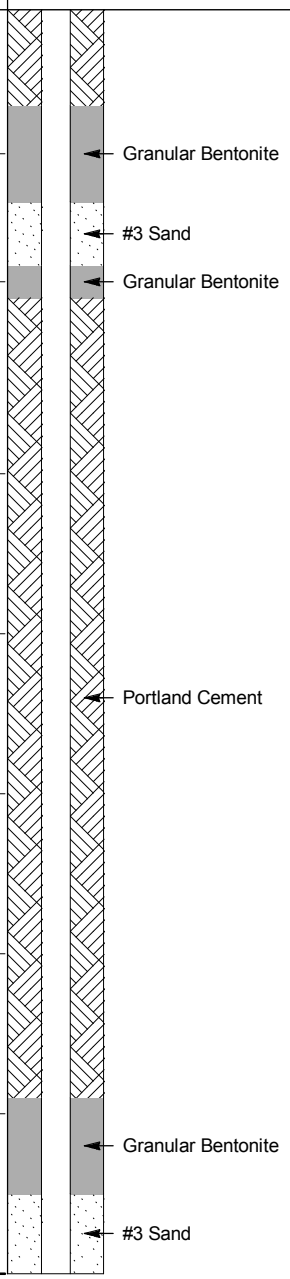
Project Number: 0444932
Project Name: Infineon - Block 1
Location: El Segundo, CA
Contractor: Cascade Drilling
Drilling Method: HSA CME 85
Logged By: ML
Reviewed By: OR
Surface Elevation: feet MSL

Date Started: 3/23/2018
Date Completed: 3/23/2018
Total Depth: 81.5 feet
Borehole Diameter: 8" inches
Initial Water Level: feet bgs
Notes:

Depth (ft)	Sample Interval	Sample Number	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations
45	✕		0.9	SP		Moderate yellowish brown (10YR 5/4), very fine to fine grained SAND, some silt, well sorted, medium dense, damp
50	✕		0.8	SP		Grayish orange (10YR 7/4), very fine to fine grained SAND, some silt, well sorted, medium dense, damp
55	✕		0.9	SP		Grayish orange (10YR 5/4), very fine to fine grained sand, some silt, well sorted, loose to medium dense, damp
60	✕		0.6	SP		Moderate yellowish brown (10YR 5/4), very fine to fine grained SAND, some silt, well sorted, loose to medium dense, damp
65	✕		1.2	SP		Grayish orange (10YR 7/4), very fine to fine grained SAND, some silt, well sorted, medium dense, damp
70	✕		1.1	SP		Grayish orange (10YR 7/4), fine grained SAND, some silt, well sorted, medium dense, damp
75	✕		0.9	SP		Grayish orange (10YR 7/4), fine grained SAND, some silt, well sorted, medium dense, damp, sand lamina: pale yellowish orange (10YR 8/6)
80	✕		0.8	SP		Grayish orange (10YR 7/4), very fine to fine grained SAND, some silt, well sorted, medium dense, damp

Total Depth - 81.5 feet bgs

WELL DIAGRAM



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LOG OF MONITORING WELL: B1-3

Project Number: 0444932
Project Name: Infineon - Block 1
Location: El Segundo, CA
Contractor: Cascade Drilling
Drilling Method: HSA CME 85
Logged By: ML
Reviewed By: OR
Surface Elevation: feet MSL

Date Started: 3/21/2018
Date Completed: 3/21/2018
Total Depth: 81.5 feet
Borehole Diameter: 8" inches
Initial Water Level: feet bgs
Notes:

Depth (ft)	Sample Interval	Sample Number	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations	WELL DIAGRAM
4–5		B1-3-4	1.1	SP		Moderate brown (5YR 3/4), fine to medium grained, well sorted, damp to wet	Portland Cement
17–18		B1-3-17	0.5	SP		Moderate yellowish brown (10YR 5/4), very fine to fine sand, some silt, well sorted, medium dense, dry	#3 Sand; Granular Bentonite
29–30		B1-3-29	0.8	SW		Dark yellowish orange (10YR 6/6), very fine to fine grained SAND, some silt, poorly graded, very thin sand lens: moderate brown (5YR 4/4), some clay-clayey sand	#3 Sand; Granular Bentonite

Granular Bentonite
Portland Cement
Granular Bentonite
Portland Cement

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LOG OF MONITORING WELL: B1-3

Project Number: 0444932
Project Name: Infineon - Block 1
Location: El Segundo, CA
Contractor: Cascade Drilling
Drilling Method: HSA CME 85
Logged By: ML
Reviewed By: OR
Surface Elevation: feet MSL

Date Started: 3/21/2018
Date Completed: 3/21/2018
Total Depth: 81.5 feet
Borehole Diameter: 8" inches
Initial Water Level: feet bgs
Notes:

Depth (ft)	Sample Interval	Sample Number	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations	WELL DIAGRAM
43–54							Granular Bentonite; #3 Sand
55–56	⧗	B1-3-54	1.4	SP		Grayish orange (10YR 7/4), very fine to fine grained SAND, well sorted, medium dense, dry	Granular Bentonite
57–60							
60–61	⧗		1.6	SP		Grayish orange (10YR 7/4), very fine to fine grained SAND, some silt, well sorted, medium dense, damp	
62–65							
65–66	⧗		1.3	SP		Grayish orange (10YR 7/4), very fine to fine grained SAND, some silt, well sorted, medium dense, dry	Portland Cement
67–70							
70–71	⧗		0.9	SP		Grayish orange (10YR 7/4), very fine to fine grained SAND, some silt, well sorted, medium dense, dry	
72–75							
75–76	⧗		1.1	SP		Grayish orange (10YR 7/4), very fine to fine grained SAND, some silt, well sorted, medium dense, dry	
77–80							Granular Bentonite; #3 Sand
80–81	⧗	B1-3-80	1	SP		Grayish orange (10YR 7/4), very fine to fine grained SAND, some silt, well sorted, medium dense, dry	
82–83						Total Depth - 81.5 feet bgs	

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LOG OF MONITORING WELL: B1-4

Project Number: 0444932
Project Name: Infineon - Block 1
Location: El Segundo, CA
Contractor: Cascade Drilling
Drilling Method: HSA CME 85
Logged By: ML
Reviewed By: OR
Surface Elevation: feet MSL

Date Started: 3/22/2018
Date Completed: 3/22/2018
Total Depth: 81.5 feet
Borehole Diameter: 8" inches
Initial Water Level: feet bgs
Notes:

Depth (ft)	Sample Interval	Sample Number	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations
13–14	■	B1-4-13	0.5	SP		Moderate brown (5YR 3/4), fine grained SAND, some silt, well sorted, loose, damp
22–23	■	B1-4-22	0.6	SP		Dark yellowish brown (10YR 4/2), fine grained SAND, some silt and clay, at bottom thin clayey sand bed, well sorted, medium dense, damp
32–33	■	B1-4-32	0.9	SP		Moderate brown (5Y 4/4), fine grained SAND, well sorted, medium dense, damp

WELL DIAGRAM

- Portland Cement
- Granular Bentonite
- #3 Sand
- Granular Bentonite
- Portland Cement
- Granular Bentonite
- #3 Sand
- Granular Bentonite
- Portland Cement

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LOG OF MONITORING WELL: B1-4

Project Number: 0444932
Project Name: Infineon - Block 1
Location: El Segundo, CA
Contractor: Cascade Drilling
Drilling Method: HSA CME 85
Logged By: ML
Reviewed By: OR
Surface Elevation: feet MSL

Date Started: 3/22/2018
Date Completed: 3/22/2018
Total Depth: 81.5 feet
Borehole Diameter: 8" inches
Initial Water Level: feet bgs
Notes:

Depth (ft)	Sample Interval	Sample Number	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations	WELL DIAGRAM
45	✕		0.8	SP		Moderate yellowish brown (10YR 5/4), fine grained SAND, some silt, well sorted, medium dense, damp	← Granular Bentonite
48	✕	B1-4-48	0.9	SP		Grayish orange (10YR 7/4), fine grained SAND, some silt, well sorted, medium dense, damp	← #3 Sand
							← Granular Bentonite
55	✕		1	SP		Dark yellowish orange (10YR 6/6), fine grained SAND, some silt, well sorted, medium dense, dry	
60	✕		1	SP		Grayish orange (10YR 7/4), very fine to fine sand, some silt, well sorted, medium dense, dry	
							← Portland Cement
65	✕		1	SP		Grayish orange (10YR 7/4), fine grained SAND, some silt, well sorted, medium dense, dry	
70	✕		0.7	SP		Grayish orange (10YR 7/4), very fine to fine grained SAND, some silt, well sorted, medium dense, dry	
75	✕		1.5	SP		Moderate yellowish brown (10YR 5/4), fine grained SAND, some silt, medium dense, dry, no odor 75.5 feet: thin sand lens with color change to moderate brown (5YR 3/4)	← Granular Bentonite
80	✕	B1-4-80	0.8	SP		Grayish orange (10YR 7/4), very fine to fine grained SAND, some silt, well sorted, medium dense, dry	← #3 Sand
						Total Depth - 81.5 feet bgs	

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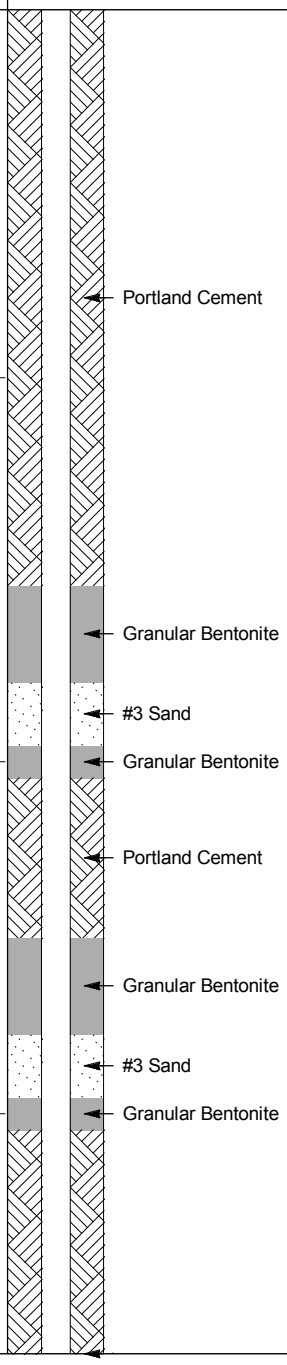
LOG OF MONITORING WELL: B1-5

Project Number: 0444932
Project Name: Infineon - Block 1
Location: El Segundo, CA
Contractor: Cascade Drilling
Drilling Method: HSA CME 85
Logged By: ML
Reviewed By: OR
Surface Elevation: feet MSL

Date Started: 3/20/2018
Date Completed: 3/20/2018
Total Depth: 81.5 feet
Borehole Diameter: 8" inches
Initial Water Level: feet bgs
Notes:

Depth (ft)	Sample Interval	Sample Number	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations
10		B1-5-10	0.1	SP		Moderate yellowish brown (10YR 5/4) to moderate brown (5YR 4/4), fine to medium grained SAND, well sorted, loose, damp, no odor
22		B1-5-22	0.3	SP		Light brown (5YR 6/4), fine to medium grained SAND, well sorted, medium dense, dry, no odor
33		B1-5-33	0.8	SP		Dark yellowish orange (10YR 6/6), fine to medium grained SAND, medium dense, dry, no odor

WELL DIAGRAM



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LOG OF MONITORING WELL: B1-5

Project Number: 0444932
Project Name: Infineon - Block 1
Location: El Segundo, CA
Contractor: Cascade Drilling
Drilling Method: HSA CME 85
Logged By: ML
Reviewed By: OR
Surface Elevation: feet MSL

Date Started: 3/20/2018
Date Completed: 3/20/2018
Total Depth: 81.5 feet
Borehole Diameter: 8" inches
Initial Water Level: feet bgs
Notes:

Depth (ft)	Sample Interval	Sample Number	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations
53–54	⧗	B1-5-53	0.7	SP		Grayish orange (10YR 7/4), very fine to fine grained SAND, well sorted, medium dense, dry, no odor
55–56	⧗		0.8	SP		Grayish orange (10YR 7/4), very fine to fine grained SAND, well sorted, medium dense to dense, dry, no odor
60–61	⧗		0.6	SP		Grayish orange (10YR 7/4), very fine to fine grained SAND, well sorted, medium dense to dense, dry, no odor
65–66	⧗		1.4	SP		Grayish orange (10YR 7/4), very fine to fine grained SAND, well sorted, medium dense, dry, no odor
70–71	⧗		1.3	SP		Grayish orange (10YR 7/4), very fine to fine grained SAND, well sorted, medium dense, dry, no odor
75–76	⧗		1.4	SP		Grayish orange (10YR 7/4), very fine to fine grained SAND, well sorted, medium dense, dry, no odor
80–81	⧗	B1-5-80	2.6	SP		Grayish orange (10YR 7/4), very fine to fine grained SAND, well sorted, medium dense, dry, no odor

Total Depth - 81.5 feet bgs

WELL DIAGRAM: Portland Cement; Granular Bentonite; #3 Sand; Granular Bentonite; Portland Cement; Granular Bentonite; #3 Sand

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APPENDIX G LABORATORY REPORTS ERM 2018 PHASE II SITE INVESTIGATION - BLOCK 1

H&P Mobile Geochemistry Inc.

10 April 2018

Ms. Maggie Tymkow
ERM - Irvine
1920 Main Street, Suite 300
Irvine, CA 92614

H&P Project: ERM032718-L6 Rev
Client Project: 0444392 / 233 Kansas Ave

Dear Ms. Maggie Tymkow:

Enclosed is the analytical report for the above referenced project. The data herein applies to samples as received by H&P Mobile Geochemistry, Inc. on 3/27/2018 -3/28/2018 which were analyzed in accordance with the attached Chain of Custody record(s).

The results for all sample analyses and required QA/QC analyses are presented in the following sections and summarized in the documents:

- Sample Summary
- Case Narrative (if applicable)
- Sample Results
- Quality Control Summary
- Notes and Definitions / Appendix
- Chain of Custody
- Sampling Logs (if applicable)

Unless otherwise noted, I certify that all analyses were performed and reviewed in compliance with our Quality Systems Manual and Standard Operating Procedures. This report shall not be reproduced, except in full, without the written approval of H&P Mobile Geochemistry, Inc.

We at H&P Mobile Geochemistry, Inc. sincerely appreciate the opportunity to provide analytical services to you on this project. If you have any questions or concerns regarding this analytical report, please contact me at your convenience at 760-804-9678.

Sincerely,

Janis La Roux
Laboratory Director

H&P Mobile Geochemistry, Inc. is certified under the California ELAP and the National Environmental Laboratory Accreditation Conference (NELAC). H&P is approved as an Environmental Testing Laboratory and Mobile Laboratory in accordance with the DoD-ELAP Program and ISO/IEC 17025:2005 programs, accreditation number 69070 for EPA Method TO-15, H&P Method TO-15, EPA Method 8260B and H&P 8260SV.

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

ERM - Irvine	Project: ERM032718-L6 Rev	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:12

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SV-B1-1-80	E803088-01	Vapor	27-Mar-18	27-Mar-18
SV-B1-1-53	E803088-02	Vapor	27-Mar-18	27-Mar-18
SV-B1-1-33	E803088-03	Vapor	27-Mar-18	27-Mar-18
SV-B1-1-22	E803088-04	Vapor	27-Mar-18	27-Mar-18
SV-B1-1-22 REP	E803088-05	Vapor	27-Mar-18	27-Mar-18
SV-B1-2-80	E803088-06	Vapor	27-Mar-18	27-Mar-18
SV-B1-2-49	E803088-07	Vapor	27-Mar-18	27-Mar-18
SV-B1-2-32	E803088-08	Vapor	27-Mar-18	27-Mar-18
SV-B1-2-25	E803088-09	Vapor	27-Mar-18	27-Mar-18
SV-B1-3-80	E803088-10	Vapor	27-Mar-18	27-Mar-18
SV-B1-3-54	E803088-11	Vapor	27-Mar-18	27-Mar-18
SV-B1-3-29	E803088-12	Vapor	27-Mar-18	27-Mar-18
SV-B1-3-17	E803088-13	Vapor	27-Mar-18	27-Mar-18
SV-B1-4-48	E803088-14	Vapor	27-Mar-18	27-Mar-18
SV-B1-4-80	E803088-15	Vapor	27-Mar-18	27-Mar-18
SV-B1-4-32	E803092-01	Vapor	28-Mar-18	28-Mar-18
SV-B1-4-22	E803092-02	Vapor	28-Mar-18	28-Mar-18
SV-B1-5-80	E803092-03	Vapor	28-Mar-18	28-Mar-18
SV-B1-5-53	E803092-04	Vapor	28-Mar-18	28-Mar-18
SV-B1-5-33	E803092-05	Vapor	28-Mar-18	28-Mar-18
SV-B1-5-22	E803092-06	Vapor	28-Mar-18	28-Mar-18

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

ERM - Irvine	Project: ERM032718-L6 Rev	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:12

DETECTIONS SUMMARY

Sample ID: **SV-B1-1-80** Laboratory ID: **E803088-01**

Analyte	Result	Reporting Limit	Units	Method	Notes
Acetone	**4700**	1000	ug/m3	H&P 8260SV	
Trichlorofluoromethane (F11)	**380**	100	ug/m3	H&P 8260SV	
1,1-Dichloroethene	**760**	100	ug/m3	H&P 8260SV	
1,1,2 Trichlorotrifluoroethane (F113)	**6500**	100	ug/m3	H&P 8260SV	
cis-1,2-Dichloroethene	**2000**	100	ug/m3	H&P 8260SV	
Chloroform	**180**	20	ug/m3	H&P 8260SV	
1,1,1-Trichloroethane	**110**	100	ug/m3	H&P 8260SV	
Benzene	**20**	20	ug/m3	H&P 8260SV	
Trichloroethene	**82000**	200	ug/m3	H&P 8260SV	
Tetrachloroethene	**160000**	200	ug/m3	H&P 8260SV	

Sample ID: **SV-B1-1-53** Laboratory ID: **E803088-02**

Analyte	Result	Reporting Limit	Units	Method	Notes
1,1,2 Trichlorotrifluoroethane (F113)	**8400**	1000	ug/m3	H&P 8260SV	
cis-1,2-Dichloroethene	**1600**	1000	ug/m3	H&P 8260SV	
Trichloroethene	**73000**	200	ug/m3	H&P 8260SV	
Tetrachloroethene	**150000**	200	ug/m3	H&P 8260SV	

Sample ID: **SV-B1-1-33** Laboratory ID: **E803088-03**

Analyte	Result	Reporting Limit	Units	Method	Notes
1,1,2 Trichlorotrifluoroethane (F113)	**7000**	1000	ug/m3	H&P 8260SV	
cis-1,2-Dichloroethene	**1500**	1000	ug/m3	H&P 8260SV	
Trichloroethene	**67000**	200	ug/m3	H&P 8260SV	
Tetrachloroethene	**120000**	200	ug/m3	H&P 8260SV	

Sample ID: **SV-B1-1-22** Laboratory ID: **E803088-04**

Analyte	Result	Reporting Limit	Units	Method	Notes
1,1,2 Trichlorotrifluoroethane (F113)	**6800**	1000	ug/m3	H&P 8260SV	
cis-1,2-Dichloroethene	**1200**	1000	ug/m3	H&P 8260SV	
Trichloroethene	**64000**	200	ug/m3	H&P 8260SV	
Tetrachloroethene	**130000**	200	ug/m3	H&P 8260SV	

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Sample ID: **SV-B1-1-22 REP** Laboratory ID: **E803088-05**

Analyte	Result	Reporting Limit	Units	Method	Notes
1,1,2 Trichlorotrifluoroethane (F113)	**6700**	1000	ug/m3	H&P 8260SV	
cis-1,2-Dichloroethene	**1200**	1000	ug/m3	H&P 8260SV	
Trichloroethene	**63000**	200	ug/m3	H&P 8260SV	
Tetrachloroethene	**120000**	200	ug/m3	H&P 8260SV	

Sample ID: **SV-B1-2-80** Laboratory ID: **E803088-06**

Analyte	Result	Reporting Limit	Units	Method	Notes
1,1,2 Trichlorotrifluoroethane (F113)	**9300**	1000	ug/m3	H&P 8260SV	
cis-1,2-Dichloroethene	**2600**	1000	ug/m3	H&P 8260SV	
Chloroform	**270**	200	ug/m3	H&P 8260SV	
Trichloroethene	**21000**	200	ug/m3	H&P 8260SV	
Tetrachloroethene	**81000**	200	ug/m3	H&P 8260SV	

Sample ID: **SV-B1-2-49** Laboratory ID: **E803088-07**

Analyte	Result	Reporting Limit	Units	Method	Notes
1,1,2 Trichlorotrifluoroethane (F113)	**8000**	1000	ug/m3	H&P 8260SV	
cis-1,2-Dichloroethene	**1700**	1000	ug/m3	H&P 8260SV	
Trichloroethene	**15000**	200	ug/m3	H&P 8260SV	
Tetrachloroethene	**60000**	200	ug/m3	H&P 8260SV	

Sample ID: **SV-B1-2-32** Laboratory ID: **E803088-08**

Analyte	Result	Reporting Limit	Units	Method	Notes
1,1,2 Trichlorotrifluoroethane (F113)	**5700**	500	ug/m3	H&P 8260SV	
cis-1,2-Dichloroethene	**1100**	500	ug/m3	H&P 8260SV	
Chloroform	**130**	100	ug/m3	H&P 8260SV	
Trichloroethene	**11000**	100	ug/m3	H&P 8260SV	
Tetrachloroethene	**45000**	100	ug/m3	H&P 8260SV	

Sample ID: **SV-B1-2-25** Laboratory ID: **E803088-09**

Analyte	Result	Reporting Limit	Units	Method	Notes
1,1,2 Trichlorotrifluoroethane (F113)	**4600**	500	ug/m3	H&P 8260SV	
Trichloroethene	**7700**	100	ug/m3	H&P 8260SV	
Tetrachloroethene	**36000**	100	ug/m3	H&P 8260SV	

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Sample ID: **SV-B1-3-80** Laboratory ID: **E803088-10**

Analyte	Result	Reporting Limit	Units	Method	Notes
1,1,2 Trichlorotrifluoroethane (F113)	**4400**	1000	ug/m3	H&P 8260SV	
Trichloroethene	**12000**	200	ug/m3	H&P 8260SV	
Tetrachloroethene	**90000**	200	ug/m3	H&P 8260SV	

Sample ID: **SV-B1-3-54** Laboratory ID: **E803088-11**

Analyte	Result	Reporting Limit	Units	Method	Notes
1,1,2 Trichlorotrifluoroethane (F113)	**3300**	1000	ug/m3	H&P 8260SV	
Trichloroethene	**7400**	200	ug/m3	H&P 8260SV	
Tetrachloroethene	**63000**	200	ug/m3	H&P 8260SV	

Sample ID: **SV-B1-3-29** Laboratory ID: **E803088-12**

Analyte	Result	Reporting Limit	Units	Method	Notes
1,1,2 Trichlorotrifluoroethane (F113)	**1900**	500	ug/m3	H&P 8260SV	
Trichloroethene	**3900**	100	ug/m3	H&P 8260SV	
Tetrachloroethene	**40000**	100	ug/m3	H&P 8260SV	

Sample ID: **SV-B1-3-17** Laboratory ID: **E803088-13**

Analyte	Result	Reporting Limit	Units	Method	Notes
1,1,2 Trichlorotrifluoroethane (F113)	**1000**	500	ug/m3	H&P 8260SV	
Trichloroethene	**1400**	100	ug/m3	H&P 8260SV	
Tetrachloroethene	**23000**	100	ug/m3	H&P 8260SV	

Sample ID: **SV-B1-4-48** Laboratory ID: **E803088-14**

Analyte	Result	Reporting Limit	Units	Method	Notes
1,1,2 Trichlorotrifluoroethane (F113)	**5900**	1000	ug/m3	H&P 8260SV	
cis-1,2-Dichloroethene	**1200**	1000	ug/m3	H&P 8260SV	
Trichloroethene	**8700**	200	ug/m3	H&P 8260SV	
Tetrachloroethene	**55000**	200	ug/m3	H&P 8260SV	

Sample ID: **SV-B1-4-80** Laboratory ID: **E803088-15**

Analyte	Result	Reporting Limit	Units	Method	Notes
1,1,2 Trichlorotrifluoroethane (F113)	**6700**	1000	ug/m3	H&P 8260SV	
cis-1,2-Dichloroethene	**1600**	1000	ug/m3	H&P 8260SV	
Trichloroethene	**12000**	200	ug/m3	H&P 8260SV	

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Sample ID: **SV-B1-4-80** Laboratory ID: **E803088-15**

Analyte	Result	Reporting Limit	Units	Method	Notes
Tetrachloroethene	**75000**	200	ug/m3	H&P 8260SV	

Sample ID: **SV-B1-4-32** Laboratory ID: **E803092-01**

Analyte	Result	Reporting Limit	Units	Method	Notes
1,1,2 Trichlorotrifluoroethane (F113)	**4400**	500	ug/m3	H&P 8260SV	
cis-1,2-Dichloroethene	**750**	500	ug/m3	H&P 8260SV	
Trichloroethene	**7300**	100	ug/m3	H&P 8260SV	
Tetrachloroethene	**49000**	100	ug/m3	H&P 8260SV	

Sample ID: **SV-B1-4-22** Laboratory ID: **E803092-02**

Analyte	Result	Reporting Limit	Units	Method	Notes
1,1,2 Trichlorotrifluoroethane (F113)	**1800**	500	ug/m3	H&P 8260SV	
Trichloroethene	**1400**	100	ug/m3	H&P 8260SV	
Tetrachloroethene	**20000**	100	ug/m3	H&P 8260SV	

Sample ID: **SV-B1-5-80** Laboratory ID: **E803092-03**

Analyte	Result	Reporting Limit	Units	Method	Notes
1,1,2 Trichlorotrifluoroethane (F113)	**7000**	1000	ug/m3	H&P 8260SV	
Trichloroethene	**25000**	200	ug/m3	H&P 8260SV	
Tetrachloroethene	**150000**	200	ug/m3	H&P 8260SV	

Sample ID: **SV-B1-5-53** Laboratory ID: **E803092-04**

Analyte	Result	Reporting Limit	Units	Method	Notes
1,1,2 Trichlorotrifluoroethane (F113)	**6600**	1000	ug/m3	H&P 8260SV	
Chloroform	**210**	200	ug/m3	H&P 8260SV	
Trichloroethene	**22000**	200	ug/m3	H&P 8260SV	
Tetrachloroethene	**150000**	200	ug/m3	H&P 8260SV	

Sample ID: **SV-B1-5-33** Laboratory ID: **E803092-05**

Analyte	Result	Reporting Limit	Units	Method	Notes
1,1,2 Trichlorotrifluoroethane (F113)	**5800**	1000	ug/m3	H&P 8260SV	
Chloroform	**230**	200	ug/m3	H&P 8260SV	
Trichloroethene	**18000**	200	ug/m3	H&P 8260SV	
Tetrachloroethene	**300000**	400	ug/m3	H&P 8260SV	

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Sample ID: **SV-B1-5-22** Laboratory ID: **E803092-06**

Analyte	Result	Reporting Limit	Units	Method	Notes
1,1,2 Trichlorotrifluoroethane (F113)	**3900**	1000	ug/m3	H&P 8260SV	
Chloroform	**550**	200	ug/m3	H&P 8260SV	
Trichloroethene	**7900**	200	ug/m3	H&P 8260SV	
Tetrachloroethene	**690000**	800	ug/m3	H&P 8260SV	

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Volatile Organic Compounds by H&P 8260SV

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Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B1-1-80 (E803088-01) Vapor Sampled: 27-Mar-18 Received: 27-Mar-18									
1,1-Difluoroethane (LCC)	ND	100	ug/m3	0.01	EC82708	27-Mar-18	27-Mar-18	H&P 8260SV	
Acetone	**4700**	1000	"	"	"	"	"	"	
Dichlorodifluoromethane (F12)	ND	100	"	"	"	"	"	"	
Chloromethane	ND	100	"	"	"	"	"	"	
Vinyl chloride	ND	10	"	"	"	"	"	"	
Bromomethane	ND	100	"	"	"	"	"	"	
Chloroethane	ND	100	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	**380**	100	"	"	"	"	"	"	
1,1-Dichloroethene	**760**	100	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	**6500**	100	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	100	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	100	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	100	"	"	"	"	"	"	
1,1-Dichloroethane	ND	100	"	"	"	"	"	"	
2,2-Dichloropropane	ND	100	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**2000**	100	"	"	"	"	"	"	
Chloroform	**180**	20	"	"	"	"	"	"	
Bromochloromethane	ND	100	"	"	"	"	"	"	
1,1,1-Trichloroethane	**110**	100	"	"	"	"	"	"	
1,1-Dichloropropene	ND	100	"	"	"	"	"	"	
Carbon tetrachloride	ND	20	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	20	"	"	"	"	"	"	
Benzene	**20**	20	"	"	"	"	"	"	
Trichloroethene	**82000**	200	"	0.1	"	"	"	"	
1,2-Dichloropropane	ND	100	"	0.01	"	"	"	"	
Bromodichloromethane	ND	100	"	"	"	"	"	"	
Dibromomethane	ND	100	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	100	"	"	"	"	"	"	
Toluene	ND	200	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	100	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	100	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	100	"	"	"	"	"	"	
1,3-Dichloropropane	ND	100	"	"	"	"	"	"	
Tetrachloroethene	**160000**	200	"	0.1	"	"	"	"	
Dibromochloromethane	ND	100	"	0.01	"	"	"	"	
Chlorobenzene	ND	20	"	"	"	"	"	"	
Ethylbenzene	ND	100	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	100	"	"	"	"	"	"	

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Volatile Organic Compounds by H&P 8260SV

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Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B1-1-80 (E803088-01) Vapor Sampled: 27-Mar-18 Received: 27-Mar-18									
m,p-Xylene	ND	100	ug/m3	0.01	EC82708	27-Mar-18	27-Mar-18	H&P 8260SV	
o-Xylene	ND	100	"	"	"	"	"	"	
Styrene	ND	100	"	"	"	"	"	"	
Bromoform	ND	100	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	100	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	100	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	100	"	"	"	"	"	"	
n-Propylbenzene	ND	100	"	"	"	"	"	"	
Bromobenzene	ND	100	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	100	"	"	"	"	"	"	
2-Chlorotoluene	ND	100	"	"	"	"	"	"	
4-Chlorotoluene	ND	100	"	"	"	"	"	"	
tert-Butylbenzene	ND	100	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	100	"	"	"	"	"	"	
sec-Butylbenzene	ND	100	"	"	"	"	"	"	
p-Isopropyltoluene	ND	100	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	100	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	100	"	"	"	"	"	"	
n-Butylbenzene	ND	100	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	100	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	1000	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	100	"	"	"	"	"	"	
Hexachlorobutadiene	ND	100	"	"	"	"	"	"	
Naphthalene	ND	20	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	100	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*100 %*		*75-125*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*94.9 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*101 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*92.1 %*		*75-125*	"	"	"	"	

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Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B1-1-53 (E803088-02) Vapor Sampled: 27-Mar-18 Received: 27-Mar-18									
1,1-Difluoroethane (LCC)	ND	1000	ug/m3	0.1	EC82708	27-Mar-18	27-Mar-18	H&P 8260SV	
Acetone	ND	10000	"	"	"	"	"	"	
Dichlorodifluoromethane (F12)	ND	1000	"	"	"	"	"	"	
Chloromethane	ND	1000	"	"	"	"	"	"	
Vinyl chloride	ND	100	"	"	"	"	"	"	
Bromomethane	ND	1000	"	"	"	"	"	"	
Chloroethane	ND	1000	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	1000	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1000	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	**8400**	1000	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	1000	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	1000	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1000	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1000	"	"	"	"	"	"	
2,2-Dichloropropane	ND	1000	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**1600**	1000	"	"	"	"	"	"	
Chloroform	ND	200	"	"	"	"	"	"	
Bromochloromethane	ND	1000	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1000	"	"	"	"	"	"	
1,1-Dichloropropene	ND	1000	"	"	"	"	"	"	
Carbon tetrachloride	ND	200	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	200	"	"	"	"	"	"	
Benzene	ND	200	"	"	"	"	"	"	
Trichloroethene	**73000**	200	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1000	"	"	"	"	"	"	
Bromodichloromethane	ND	1000	"	"	"	"	"	"	
Dibromomethane	ND	1000	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	1000	"	"	"	"	"	"	
Toluene	ND	2000	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	1000	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	1000	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	1000	"	"	"	"	"	"	
1,3-Dichloropropane	ND	1000	"	"	"	"	"	"	
Tetrachloroethene	**150000**	200	"	"	"	"	"	"	
Dibromochloromethane	ND	1000	"	"	"	"	"	"	
Chlorobenzene	ND	200	"	"	"	"	"	"	
Ethylbenzene	ND	1000	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	1000	"	"	"	"	"	"	

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Volatile Organic Compounds by H&P 8260SV

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Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B1-1-53 (E803088-02) Vapor Sampled: 27-Mar-18 Received: 27-Mar-18									
m,p-Xylene	ND	1000	ug/m3	0.1	EC82708	27-Mar-18	27-Mar-18	H&P 8260SV	
o-Xylene	ND	1000	"	"	"	"	"	"	
Styrene	ND	1000	"	"	"	"	"	"	
Bromoform	ND	1000	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	1000	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1000	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	1000	"	"	"	"	"	"	
n-Propylbenzene	ND	1000	"	"	"	"	"	"	
Bromobenzene	ND	1000	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1000	"	"	"	"	"	"	
2-Chlorotoluene	ND	1000	"	"	"	"	"	"	
4-Chlorotoluene	ND	1000	"	"	"	"	"	"	
tert-Butylbenzene	ND	1000	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1000	"	"	"	"	"	"	
sec-Butylbenzene	ND	1000	"	"	"	"	"	"	
p-Isopropyltoluene	ND	1000	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	1000	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	1000	"	"	"	"	"	"	
n-Butylbenzene	ND	1000	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	1000	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	10000	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1000	"	"	"	"	"	"	
Hexachlorobutadiene	ND	1000	"	"	"	"	"	"	
Naphthalene	ND	200	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	1000	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*108 %*		*75-125*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*99.4 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*102 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*91.7 %*		*75-125*	"	"	"	"	

H&P Mobile
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ERM - Irvine	Project: ERM032718-L6 Rev	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:12

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B1-1-33 (E803088-03) Vapor Sampled: 27-Mar-18 Received: 27-Mar-18									
1,1-Difluoroethane (LCC)	ND	1000	ug/m3	0.1	EC82708	27-Mar-18	27-Mar-18	H&P 8260SV	
Acetone	ND	10000	"	"	"	"	"	"	
Dichlorodifluoromethane (F12)	ND	1000	"	"	"	"	"	"	
Chloromethane	ND	1000	"	"	"	"	"	"	
Vinyl chloride	ND	100	"	"	"	"	"	"	
Bromomethane	ND	1000	"	"	"	"	"	"	
Chloroethane	ND	1000	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	1000	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1000	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	**7000**	1000	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	1000	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	1000	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1000	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1000	"	"	"	"	"	"	
2,2-Dichloropropane	ND	1000	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**1500**	1000	"	"	"	"	"	"	
Chloroform	ND	200	"	"	"	"	"	"	
Bromochloromethane	ND	1000	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1000	"	"	"	"	"	"	
1,1-Dichloropropene	ND	1000	"	"	"	"	"	"	
Carbon tetrachloride	ND	200	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	200	"	"	"	"	"	"	
Benzene	ND	200	"	"	"	"	"	"	
Trichloroethene	**67000**	200	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1000	"	"	"	"	"	"	
Bromodichloromethane	ND	1000	"	"	"	"	"	"	
Dibromomethane	ND	1000	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	1000	"	"	"	"	"	"	
Toluene	ND	2000	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	1000	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	1000	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	1000	"	"	"	"	"	"	
1,3-Dichloropropane	ND	1000	"	"	"	"	"	"	
Tetrachloroethene	**120000**	200	"	"	"	"	"	"	
Dibromochloromethane	ND	1000	"	"	"	"	"	"	
Chlorobenzene	ND	200	"	"	"	"	"	"	
Ethylbenzene	ND	1000	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	1000	"	"	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6 Rev	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:12

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B1-1-33 (E803088-03) Vapor Sampled: 27-Mar-18 Received: 27-Mar-18									
m,p-Xylene	ND	1000	ug/m3	0.1	EC82708	27-Mar-18	27-Mar-18	H&P 8260SV	
o-Xylene	ND	1000	"	"	"	"	"	"	
Styrene	ND	1000	"	"	"	"	"	"	
Bromoform	ND	1000	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	1000	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1000	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	1000	"	"	"	"	"	"	
n-Propylbenzene	ND	1000	"	"	"	"	"	"	
Bromobenzene	ND	1000	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1000	"	"	"	"	"	"	
2-Chlorotoluene	ND	1000	"	"	"	"	"	"	
4-Chlorotoluene	ND	1000	"	"	"	"	"	"	
tert-Butylbenzene	ND	1000	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1000	"	"	"	"	"	"	
sec-Butylbenzene	ND	1000	"	"	"	"	"	"	
p-Isopropyltoluene	ND	1000	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	1000	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	1000	"	"	"	"	"	"	
n-Butylbenzene	ND	1000	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	1000	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	10000	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1000	"	"	"	"	"	"	
Hexachlorobutadiene	ND	1000	"	"	"	"	"	"	
Naphthalene	ND	200	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	1000	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*105 %*		*75-125*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*96.9 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*99.8 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*92.5 %*		*75-125*	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6 Rev	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:12

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B1-1-22 (E803088-04) Vapor Sampled: 27-Mar-18 Received: 27-Mar-18									
1,1-Difluoroethane (LCC)	ND	1000	ug/m3	0.1	EC82708	27-Mar-18	27-Mar-18	H&P 8260SV	
Acetone	ND	10000	"	"	"	"	"	"	
Dichlorodifluoromethane (F12)	ND	1000	"	"	"	"	"	"	
Chloromethane	ND	1000	"	"	"	"	"	"	
Vinyl chloride	ND	100	"	"	"	"	"	"	
Bromomethane	ND	1000	"	"	"	"	"	"	
Chloroethane	ND	1000	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	1000	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1000	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	**6800**	1000	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	1000	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	1000	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1000	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1000	"	"	"	"	"	"	
2,2-Dichloropropane	ND	1000	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**1200**	1000	"	"	"	"	"	"	
Chloroform	ND	200	"	"	"	"	"	"	
Bromochloromethane	ND	1000	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1000	"	"	"	"	"	"	
1,1-Dichloropropene	ND	1000	"	"	"	"	"	"	
Carbon tetrachloride	ND	200	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	200	"	"	"	"	"	"	
Benzene	ND	200	"	"	"	"	"	"	
Trichloroethene	**64000**	200	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1000	"	"	"	"	"	"	
Bromodichloromethane	ND	1000	"	"	"	"	"	"	
Dibromomethane	ND	1000	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	1000	"	"	"	"	"	"	
Toluene	ND	2000	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	1000	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	1000	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	1000	"	"	"	"	"	"	
1,3-Dichloropropane	ND	1000	"	"	"	"	"	"	
Tetrachloroethene	**130000**	200	"	"	"	"	"	"	
Dibromochloromethane	ND	1000	"	"	"	"	"	"	
Chlorobenzene	ND	200	"	"	"	"	"	"	
Ethylbenzene	ND	1000	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	1000	"	"	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6 Rev	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:12

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B1-1-22 (E803088-04) Vapor Sampled: 27-Mar-18 Received: 27-Mar-18									
m,p-Xylene	ND	1000	ug/m3	0.1	EC82708	27-Mar-18	27-Mar-18	H&P 8260SV	
o-Xylene	ND	1000	"	"	"	"	"	"	
Styrene	ND	1000	"	"	"	"	"	"	
Bromoform	ND	1000	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	1000	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1000	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	1000	"	"	"	"	"	"	
n-Propylbenzene	ND	1000	"	"	"	"	"	"	
Bromobenzene	ND	1000	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1000	"	"	"	"	"	"	
2-Chlorotoluene	ND	1000	"	"	"	"	"	"	
4-Chlorotoluene	ND	1000	"	"	"	"	"	"	
tert-Butylbenzene	ND	1000	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1000	"	"	"	"	"	"	
sec-Butylbenzene	ND	1000	"	"	"	"	"	"	
p-Isopropyltoluene	ND	1000	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	1000	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	1000	"	"	"	"	"	"	
n-Butylbenzene	ND	1000	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	1000	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	10000	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1000	"	"	"	"	"	"	
Hexachlorobutadiene	ND	1000	"	"	"	"	"	"	
Naphthalene	ND	200	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	1000	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*103 %*		*75-125*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*93.8 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*99.7 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*89.7 %*		*75-125*	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6 Rev	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:12

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B1-1-22 REP (E803088-05) Vapor	**Sampled: 27-Mar-18**	**Received: 27-Mar-18**							
1,1-Difluoroethane (LCC)	ND	1000	ug/m3	0.1	EC82708	27-Mar-18	27-Mar-18	H&P 8260SV	
Acetone	ND	10000	"	"	"	"	"	"	
Dichlorodifluoromethane (F12)	ND	1000	"	"	"	"	"	"	
Chloromethane	ND	1000	"	"	"	"	"	"	
Vinyl chloride	ND	100	"	"	"	"	"	"	
Bromomethane	ND	1000	"	"	"	"	"	"	
Chloroethane	ND	1000	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	1000	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1000	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	**6700**	1000	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	1000	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	1000	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1000	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1000	"	"	"	"	"	"	
2,2-Dichloropropane	ND	1000	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**1200**	1000	"	"	"	"	"	"	
Chloroform	ND	200	"	"	"	"	"	"	
Bromochloromethane	ND	1000	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1000	"	"	"	"	"	"	
1,1-Dichloropropene	ND	1000	"	"	"	"	"	"	
Carbon tetrachloride	ND	200	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	200	"	"	"	"	"	"	
Benzene	ND	200	"	"	"	"	"	"	
Trichloroethene	**63000**	200	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1000	"	"	"	"	"	"	
Bromodichloromethane	ND	1000	"	"	"	"	"	"	
Dibromomethane	ND	1000	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	1000	"	"	"	"	"	"	
Toluene	ND	2000	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	1000	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	1000	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	1000	"	"	"	"	"	"	
1,3-Dichloropropane	ND	1000	"	"	"	"	"	"	
Tetrachloroethene	**120000**	200	"	"	"	"	"	"	
Dibromochloromethane	ND	1000	"	"	"	"	"	"	
Chlorobenzene	ND	200	"	"	"	"	"	"	
Ethylbenzene	ND	1000	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	1000	"	"	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6 Rev	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:12

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B1-1-22 REP (E803088-05) Vapor Sampled: 27-Mar-18 Received: 27-Mar-18									
m,p-Xylene	ND	1000	ug/m3	0.1	EC82708	27-Mar-18	27-Mar-18	H&P 8260SV	
o-Xylene	ND	1000	"	"	"	"	"	"	
Styrene	ND	1000	"	"	"	"	"	"	
Bromoform	ND	1000	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	1000	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1000	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	1000	"	"	"	"	"	"	
n-Propylbenzene	ND	1000	"	"	"	"	"	"	
Bromobenzene	ND	1000	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1000	"	"	"	"	"	"	
2-Chlorotoluene	ND	1000	"	"	"	"	"	"	
4-Chlorotoluene	ND	1000	"	"	"	"	"	"	
tert-Butylbenzene	ND	1000	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1000	"	"	"	"	"	"	
sec-Butylbenzene	ND	1000	"	"	"	"	"	"	
p-Isopropyltoluene	ND	1000	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	1000	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	1000	"	"	"	"	"	"	
n-Butylbenzene	ND	1000	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	1000	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	10000	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1000	"	"	"	"	"	"	
Hexachlorobutadiene	ND	1000	"	"	"	"	"	"	
Naphthalene	ND	200	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	1000	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*103 %*		*75-125*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*97.0 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*102 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*92.8 %*		*75-125*	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6 Rev	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:12

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B1-2-80 (E803088-06) Vapor Sampled: 27-Mar-18 Received: 27-Mar-18									
1,1-Difluoroethane (LCC)	ND	1000	ug/m3	0.1	EC82708	27-Mar-18	27-Mar-18	H&P 8260SV	
Acetone	ND	10000	"	"	"	"	"	"	
Dichlorodifluoromethane (F12)	ND	1000	"	"	"	"	"	"	
Chloromethane	ND	1000	"	"	"	"	"	"	
Vinyl chloride	ND	100	"	"	"	"	"	"	
Bromomethane	ND	1000	"	"	"	"	"	"	
Chloroethane	ND	1000	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	1000	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1000	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	**9300**	1000	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	1000	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	1000	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1000	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1000	"	"	"	"	"	"	
2,2-Dichloropropane	ND	1000	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**2600**	1000	"	"	"	"	"	"	
Chloroform	**270**	200	"	"	"	"	"	"	
Bromochloromethane	ND	1000	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1000	"	"	"	"	"	"	
1,1-Dichloropropene	ND	1000	"	"	"	"	"	"	
Carbon tetrachloride	ND	200	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	200	"	"	"	"	"	"	
Benzene	ND	200	"	"	"	"	"	"	
Trichloroethene	**21000**	200	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1000	"	"	"	"	"	"	
Bromodichloromethane	ND	1000	"	"	"	"	"	"	
Dibromomethane	ND	1000	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	1000	"	"	"	"	"	"	
Toluene	ND	2000	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	1000	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	1000	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	1000	"	"	"	"	"	"	
1,3-Dichloropropane	ND	1000	"	"	"	"	"	"	
Tetrachloroethene	**81000**	200	"	"	"	"	"	"	
Dibromochloromethane	ND	1000	"	"	"	"	"	"	
Chlorobenzene	ND	200	"	"	"	"	"	"	
Ethylbenzene	ND	1000	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	1000	"	"	"	"	"	"	

H&P Mobile
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ERM - Irvine	Project: ERM032718-L6 Rev	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:12

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B1-2-80 (E803088-06) Vapor Sampled: 27-Mar-18 Received: 27-Mar-18									
m,p-Xylene	ND	1000	ug/m3	0.1	EC82708	27-Mar-18	27-Mar-18	H&P 8260SV	
o-Xylene	ND	1000	"	"	"	"	"	"	
Styrene	ND	1000	"	"	"	"	"	"	
Bromoform	ND	1000	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	1000	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1000	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	1000	"	"	"	"	"	"	
n-Propylbenzene	ND	1000	"	"	"	"	"	"	
Bromobenzene	ND	1000	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1000	"	"	"	"	"	"	
2-Chlorotoluene	ND	1000	"	"	"	"	"	"	
4-Chlorotoluene	ND	1000	"	"	"	"	"	"	
tert-Butylbenzene	ND	1000	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1000	"	"	"	"	"	"	
sec-Butylbenzene	ND	1000	"	"	"	"	"	"	
p-Isopropyltoluene	ND	1000	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	1000	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	1000	"	"	"	"	"	"	
n-Butylbenzene	ND	1000	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	1000	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	10000	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1000	"	"	"	"	"	"	
Hexachlorobutadiene	ND	1000	"	"	"	"	"	"	
Naphthalene	ND	200	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	1000	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*100 %*		*75-125*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*94.9 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*105 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*93.1 %*		*75-125*	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6 Rev	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:12

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B1-2-49 (E803088-07) Vapor Sampled: 27-Mar-18 Received: 27-Mar-18									
1,1-Difluoroethane (LCC)	ND	1000	ug/m3	0.1	EC82708	27-Mar-18	27-Mar-18	H&P 8260SV	
Acetone	ND	10000	"	"	"	"	"	"	
Dichlorodifluoromethane (F12)	ND	1000	"	"	"	"	"	"	
Chloromethane	ND	1000	"	"	"	"	"	"	
Vinyl chloride	ND	100	"	"	"	"	"	"	
Bromomethane	ND	1000	"	"	"	"	"	"	
Chloroethane	ND	1000	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	1000	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1000	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	**8000**	1000	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	1000	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	1000	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1000	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1000	"	"	"	"	"	"	
2,2-Dichloropropane	ND	1000	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**1700**	1000	"	"	"	"	"	"	
Chloroform	ND	200	"	"	"	"	"	"	
Bromochloromethane	ND	1000	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1000	"	"	"	"	"	"	
1,1-Dichloropropene	ND	1000	"	"	"	"	"	"	
Carbon tetrachloride	ND	200	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	200	"	"	"	"	"	"	
Benzene	ND	200	"	"	"	"	"	"	
Trichloroethene	**15000**	200	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1000	"	"	"	"	"	"	
Bromodichloromethane	ND	1000	"	"	"	"	"	"	
Dibromomethane	ND	1000	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	1000	"	"	"	"	"	"	
Toluene	ND	2000	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	1000	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	1000	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	1000	"	"	"	"	"	"	
1,3-Dichloropropane	ND	1000	"	"	"	"	"	"	
Tetrachloroethene	**60000**	200	"	"	"	"	"	"	
Dibromochloromethane	ND	1000	"	"	"	"	"	"	
Chlorobenzene	ND	200	"	"	"	"	"	"	
Ethylbenzene	ND	1000	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	1000	"	"	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6 Rev	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:12

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B1-2-49 (E803088-07) Vapor Sampled: 27-Mar-18 Received: 27-Mar-18									
m,p-Xylene	ND	1000	ug/m3	0.1	EC82708	27-Mar-18	27-Mar-18	H&P 8260SV	
o-Xylene	ND	1000	"	"	"	"	"	"	
Styrene	ND	1000	"	"	"	"	"	"	
Bromoform	ND	1000	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	1000	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1000	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	1000	"	"	"	"	"	"	
n-Propylbenzene	ND	1000	"	"	"	"	"	"	
Bromobenzene	ND	1000	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1000	"	"	"	"	"	"	
2-Chlorotoluene	ND	1000	"	"	"	"	"	"	
4-Chlorotoluene	ND	1000	"	"	"	"	"	"	
tert-Butylbenzene	ND	1000	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1000	"	"	"	"	"	"	
sec-Butylbenzene	ND	1000	"	"	"	"	"	"	
p-Isopropyltoluene	ND	1000	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	1000	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	1000	"	"	"	"	"	"	
n-Butylbenzene	ND	1000	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	1000	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	10000	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1000	"	"	"	"	"	"	
Hexachlorobutadiene	ND	1000	"	"	"	"	"	"	
Naphthalene	ND	200	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	1000	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*101 %*		*75-125*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*96.7 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*105 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*92.2 %*		*75-125*	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6 Rev	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:12

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B1-2-32 (E803088-08) Vapor Sampled: 27-Mar-18 Received: 27-Mar-18									
1,1-Difluoroethane (LCC)	ND	500	ug/m3	0.05	EC82708	27-Mar-18	27-Mar-18	H&P 8260SV	
Acetone	ND	5000	"	"	"	"	"	"	
Dichlorodifluoromethane (F12)	ND	500	"	"	"	"	"	"	
Chloromethane	ND	500	"	"	"	"	"	"	
Vinyl chloride	ND	50	"	"	"	"	"	"	
Bromomethane	ND	500	"	"	"	"	"	"	
Chloroethane	ND	500	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	500	"	"	"	"	"	"	
1,1-Dichloroethene	ND	500	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	**5700**	500	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	500	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	500	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	500	"	"	"	"	"	"	
1,1-Dichloroethane	ND	500	"	"	"	"	"	"	
2,2-Dichloropropane	ND	500	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**1100**	500	"	"	"	"	"	"	
Chloroform	**130**	100	"	"	"	"	"	"	
Bromochloromethane	ND	500	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	500	"	"	"	"	"	"	
1,1-Dichloropropene	ND	500	"	"	"	"	"	"	
Carbon tetrachloride	ND	100	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	100	"	"	"	"	"	"	
Benzene	ND	100	"	"	"	"	"	"	
Trichloroethene	**11000**	100	"	"	"	"	"	"	
1,2-Dichloropropane	ND	500	"	"	"	"	"	"	
Bromodichloromethane	ND	500	"	"	"	"	"	"	
Dibromomethane	ND	500	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	500	"	"	"	"	"	"	
Toluene	ND	1000	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	500	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	500	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	500	"	"	"	"	"	"	
1,3-Dichloropropane	ND	500	"	"	"	"	"	"	
Tetrachloroethene	**45000**	100	"	"	"	"	"	"	
Dibromochloromethane	ND	500	"	"	"	"	"	"	
Chlorobenzene	ND	100	"	"	"	"	"	"	
Ethylbenzene	ND	500	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	500	"	"	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6 Rev	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:12

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B1-2-32 (E803088-08) Vapor Sampled: 27-Mar-18 Received: 27-Mar-18									
m,p-Xylene	ND	500	ug/m3	0.05	EC82708	27-Mar-18	27-Mar-18	H&P 8260SV	
o-Xylene	ND	500	"	"	"	"	"	"	
Styrene	ND	500	"	"	"	"	"	"	
Bromoform	ND	500	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	500	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	500	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	500	"	"	"	"	"	"	
n-Propylbenzene	ND	500	"	"	"	"	"	"	
Bromobenzene	ND	500	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	500	"	"	"	"	"	"	
2-Chlorotoluene	ND	500	"	"	"	"	"	"	
4-Chlorotoluene	ND	500	"	"	"	"	"	"	
tert-Butylbenzene	ND	500	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	500	"	"	"	"	"	"	
sec-Butylbenzene	ND	500	"	"	"	"	"	"	
p-Isopropyltoluene	ND	500	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	500	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	500	"	"	"	"	"	"	
n-Butylbenzene	ND	500	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	500	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	5000	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	500	"	"	"	"	"	"	
Hexachlorobutadiene	ND	500	"	"	"	"	"	"	
Naphthalene	ND	100	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	500	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*101 %*		*75-125*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*96.2 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*105 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*92.5 %*		*75-125*	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6 Rev	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:12

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B1-2-25 (E803088-09) Vapor Sampled: 27-Mar-18 Received: 27-Mar-18									
1,1-Difluoroethane (LCC)	ND	500	ug/m3	0.05	EC82708	27-Mar-18	27-Mar-18	H&P 8260SV	
Acetone	ND	5000	"	"	"	"	"	"	
Dichlorodifluoromethane (F12)	ND	500	"	"	"	"	"	"	
Chloromethane	ND	500	"	"	"	"	"	"	
Vinyl chloride	ND	50	"	"	"	"	"	"	
Bromomethane	ND	500	"	"	"	"	"	"	
Chloroethane	ND	500	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	500	"	"	"	"	"	"	
1,1-Dichloroethene	ND	500	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	**4600**	500	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	500	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	500	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	500	"	"	"	"	"	"	
1,1-Dichloroethane	ND	500	"	"	"	"	"	"	
2,2-Dichloropropane	ND	500	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	500	"	"	"	"	"	"	
Chloroform	ND	100	"	"	"	"	"	"	
Bromochloromethane	ND	500	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	500	"	"	"	"	"	"	
1,1-Dichloropropene	ND	500	"	"	"	"	"	"	
Carbon tetrachloride	ND	100	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	100	"	"	"	"	"	"	
Benzene	ND	100	"	"	"	"	"	"	
Trichloroethene	**7700**	100	"	"	"	"	"	"	
1,2-Dichloropropane	ND	500	"	"	"	"	"	"	
Bromodichloromethane	ND	500	"	"	"	"	"	"	
Dibromomethane	ND	500	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	500	"	"	"	"	"	"	
Toluene	ND	1000	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	500	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	500	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	500	"	"	"	"	"	"	
1,3-Dichloropropane	ND	500	"	"	"	"	"	"	
Tetrachloroethene	**36000**	100	"	"	"	"	"	"	
Dibromochloromethane	ND	500	"	"	"	"	"	"	
Chlorobenzene	ND	100	"	"	"	"	"	"	
Ethylbenzene	ND	500	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	500	"	"	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6 Rev	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:12

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B1-2-25 (E803088-09) Vapor Sampled: 27-Mar-18 Received: 27-Mar-18									
m,p-Xylene	ND	500	ug/m3	0.05	EC82708	27-Mar-18	27-Mar-18	H&P 8260SV	
o-Xylene	ND	500	"	"	"	"	"	"	
Styrene	ND	500	"	"	"	"	"	"	
Bromoform	ND	500	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	500	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	500	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	500	"	"	"	"	"	"	
n-Propylbenzene	ND	500	"	"	"	"	"	"	
Bromobenzene	ND	500	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	500	"	"	"	"	"	"	
2-Chlorotoluene	ND	500	"	"	"	"	"	"	
4-Chlorotoluene	ND	500	"	"	"	"	"	"	
tert-Butylbenzene	ND	500	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	500	"	"	"	"	"	"	
sec-Butylbenzene	ND	500	"	"	"	"	"	"	
p-Isopropyltoluene	ND	500	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	500	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	500	"	"	"	"	"	"	
n-Butylbenzene	ND	500	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	500	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	5000	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	500	"	"	"	"	"	"	
Hexachlorobutadiene	ND	500	"	"	"	"	"	"	
Naphthalene	ND	100	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	500	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*102 %*		*75-125*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*97.3 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*103 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*85.4 %*		*75-125*	"	"	"	"	

H&P Mobile
Geochemistry Inc.

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ERM - Irvine	Project: ERM032718-L6 Rev	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:12

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B1-3-80 (E803088-10) Vapor Sampled: 27-Mar-18 Received: 27-Mar-18									
1,1-Difluoroethane (LCC)	ND	1000	ug/m3	0.1	EC82708	27-Mar-18	27-Mar-18	H&P 8260SV	
Acetone	ND	10000	"	"	"	"	"	"	
Dichlorodifluoromethane (F12)	ND	1000	"	"	"	"	"	"	
Chloromethane	ND	1000	"	"	"	"	"	"	
Vinyl chloride	ND	100	"	"	"	"	"	"	
Bromomethane	ND	1000	"	"	"	"	"	"	
Chloroethane	ND	1000	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	1000	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1000	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	**4400**	1000	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	1000	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	1000	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1000	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1000	"	"	"	"	"	"	
2,2-Dichloropropane	ND	1000	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1000	"	"	"	"	"	"	
Chloroform	ND	200	"	"	"	"	"	"	
Bromochloromethane	ND	1000	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1000	"	"	"	"	"	"	
1,1-Dichloropropene	ND	1000	"	"	"	"	"	"	
Carbon tetrachloride	ND	200	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	200	"	"	"	"	"	"	
Benzene	ND	200	"	"	"	"	"	"	
Trichloroethene	**12000**	200	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1000	"	"	"	"	"	"	
Bromodichloromethane	ND	1000	"	"	"	"	"	"	
Dibromomethane	ND	1000	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	1000	"	"	"	"	"	"	
Toluene	ND	2000	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	1000	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	1000	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	1000	"	"	"	"	"	"	
1,3-Dichloropropane	ND	1000	"	"	"	"	"	"	
Tetrachloroethene	**90000**	200	"	"	"	"	"	"	
Dibromochloromethane	ND	1000	"	"	"	"	"	"	
Chlorobenzene	ND	200	"	"	"	"	"	"	
Ethylbenzene	ND	1000	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	1000	"	"	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6 Rev	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:12

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B1-3-80 (E803088-10) Vapor Sampled: 27-Mar-18 Received: 27-Mar-18									
m,p-Xylene	ND	1000	ug/m3	0.1	EC82708	27-Mar-18	27-Mar-18	H&P 8260SV	
o-Xylene	ND	1000	"	"	"	"	"	"	
Styrene	ND	1000	"	"	"	"	"	"	
Bromoform	ND	1000	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	1000	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1000	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	1000	"	"	"	"	"	"	
n-Propylbenzene	ND	1000	"	"	"	"	"	"	
Bromobenzene	ND	1000	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1000	"	"	"	"	"	"	
2-Chlorotoluene	ND	1000	"	"	"	"	"	"	
4-Chlorotoluene	ND	1000	"	"	"	"	"	"	
tert-Butylbenzene	ND	1000	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1000	"	"	"	"	"	"	
sec-Butylbenzene	ND	1000	"	"	"	"	"	"	
p-Isopropyltoluene	ND	1000	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	1000	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	1000	"	"	"	"	"	"	
n-Butylbenzene	ND	1000	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	1000	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	10000	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1000	"	"	"	"	"	"	
Hexachlorobutadiene	ND	1000	"	"	"	"	"	"	
Naphthalene	ND	200	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	1000	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*106 %*		*75-125*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*97.0 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*105 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*89.5 %*		*75-125*	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6 Rev	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:12

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B1-3-54 (E803088-11) Vapor Sampled: 27-Mar-18 Received: 27-Mar-18									
1,1-Difluoroethane (LCC)	ND	1000	ug/m3	0.1	EC82708	27-Mar-18	27-Mar-18	H&P 8260SV	
Acetone	ND	10000	"	"	"	"	"	"	
Dichlorodifluoromethane (F12)	ND	1000	"	"	"	"	"	"	
Chloromethane	ND	1000	"	"	"	"	"	"	
Vinyl chloride	ND	100	"	"	"	"	"	"	
Bromomethane	ND	1000	"	"	"	"	"	"	
Chloroethane	ND	1000	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	1000	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1000	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	**3300**	1000	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	1000	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	1000	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1000	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1000	"	"	"	"	"	"	
2,2-Dichloropropane	ND	1000	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1000	"	"	"	"	"	"	
Chloroform	ND	200	"	"	"	"	"	"	
Bromochloromethane	ND	1000	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1000	"	"	"	"	"	"	
1,1-Dichloropropene	ND	1000	"	"	"	"	"	"	
Carbon tetrachloride	ND	200	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	200	"	"	"	"	"	"	
Benzene	ND	200	"	"	"	"	"	"	
Trichloroethene	**7400**	200	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1000	"	"	"	"	"	"	
Bromodichloromethane	ND	1000	"	"	"	"	"	"	
Dibromomethane	ND	1000	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	1000	"	"	"	"	"	"	
Toluene	ND	2000	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	1000	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	1000	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	1000	"	"	"	"	"	"	
1,3-Dichloropropane	ND	1000	"	"	"	"	"	"	
Tetrachloroethene	**63000**	200	"	"	"	"	"	"	
Dibromochloromethane	ND	1000	"	"	"	"	"	"	
Chlorobenzene	ND	200	"	"	"	"	"	"	
Ethylbenzene	ND	1000	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	1000	"	"	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6 Rev	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:12

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B1-3-54 (E803088-11) Vapor Sampled: 27-Mar-18 Received: 27-Mar-18									
m,p-Xylene	ND	1000	ug/m3	0.1	EC82708	27-Mar-18	27-Mar-18	H&P 8260SV	
o-Xylene	ND	1000	"	"	"	"	"	"	
Styrene	ND	1000	"	"	"	"	"	"	
Bromoform	ND	1000	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	1000	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1000	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	1000	"	"	"	"	"	"	
n-Propylbenzene	ND	1000	"	"	"	"	"	"	
Bromobenzene	ND	1000	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1000	"	"	"	"	"	"	
2-Chlorotoluene	ND	1000	"	"	"	"	"	"	
4-Chlorotoluene	ND	1000	"	"	"	"	"	"	
tert-Butylbenzene	ND	1000	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1000	"	"	"	"	"	"	
sec-Butylbenzene	ND	1000	"	"	"	"	"	"	
p-Isopropyltoluene	ND	1000	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	1000	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	1000	"	"	"	"	"	"	
n-Butylbenzene	ND	1000	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	1000	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	10000	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1000	"	"	"	"	"	"	
Hexachlorobutadiene	ND	1000	"	"	"	"	"	"	
Naphthalene	ND	200	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	1000	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*100 %*		*75-125*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*90.4 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*103 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*89.5 %*		*75-125*	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6 Rev	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:12

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B1-3-29 (E803088-12) Vapor Sampled: 27-Mar-18 Received: 27-Mar-18									
1,1-Difluoroethane (LCC)	ND	500	ug/m3	0.05	EC82708	27-Mar-18	27-Mar-18	H&P 8260SV	
Acetone	ND	5000	"	"	"	"	"	"	
Dichlorodifluoromethane (F12)	ND	500	"	"	"	"	"	"	
Chloromethane	ND	500	"	"	"	"	"	"	
Vinyl chloride	ND	50	"	"	"	"	"	"	
Bromomethane	ND	500	"	"	"	"	"	"	
Chloroethane	ND	500	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	500	"	"	"	"	"	"	
1,1-Dichloroethene	ND	500	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	**1900**	500	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	500	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	500	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	500	"	"	"	"	"	"	
1,1-Dichloroethane	ND	500	"	"	"	"	"	"	
2,2-Dichloropropane	ND	500	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	500	"	"	"	"	"	"	
Chloroform	ND	100	"	"	"	"	"	"	
Bromochloromethane	ND	500	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	500	"	"	"	"	"	"	
1,1-Dichloropropene	ND	500	"	"	"	"	"	"	
Carbon tetrachloride	ND	100	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	100	"	"	"	"	"	"	
Benzene	ND	100	"	"	"	"	"	"	
Trichloroethene	**3900**	100	"	"	"	"	"	"	
1,2-Dichloropropane	ND	500	"	"	"	"	"	"	
Bromodichloromethane	ND	500	"	"	"	"	"	"	
Dibromomethane	ND	500	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	500	"	"	"	"	"	"	
Toluene	ND	1000	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	500	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	500	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	500	"	"	"	"	"	"	
1,3-Dichloropropane	ND	500	"	"	"	"	"	"	
Tetrachloroethene	**40000**	100	"	"	"	"	"	"	
Dibromochloromethane	ND	500	"	"	"	"	"	"	
Chlorobenzene	ND	100	"	"	"	"	"	"	
Ethylbenzene	ND	500	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	500	"	"	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6 Rev	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:12

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B1-3-29 (E803088-12) Vapor Sampled: 27-Mar-18 Received: 27-Mar-18									
m,p-Xylene	ND	500	ug/m3	0.05	EC82708	27-Mar-18	27-Mar-18	H&P 8260SV	
o-Xylene	ND	500	"	"	"	"	"	"	
Styrene	ND	500	"	"	"	"	"	"	
Bromoform	ND	500	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	500	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	500	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	500	"	"	"	"	"	"	
n-Propylbenzene	ND	500	"	"	"	"	"	"	
Bromobenzene	ND	500	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	500	"	"	"	"	"	"	
2-Chlorotoluene	ND	500	"	"	"	"	"	"	
4-Chlorotoluene	ND	500	"	"	"	"	"	"	
tert-Butylbenzene	ND	500	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	500	"	"	"	"	"	"	
sec-Butylbenzene	ND	500	"	"	"	"	"	"	
p-Isopropyltoluene	ND	500	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	500	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	500	"	"	"	"	"	"	
n-Butylbenzene	ND	500	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	500	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	5000	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	500	"	"	"	"	"	"	
Hexachlorobutadiene	ND	500	"	"	"	"	"	"	
Naphthalene	ND	100	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	500	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*99.1 %*		*75-125*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*93.9 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*105 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*92.8 %*		*75-125*	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6 Rev	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:12

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B1-3-17 (E803088-13) Vapor Sampled: 27-Mar-18 Received: 27-Mar-18									
1,1-Difluoroethane (LCC)	ND	500	ug/m3	0.05	EC82708	27-Mar-18	27-Mar-18	H&P 8260SV	
Acetone	ND	5000	"	"	"	"	"	"	
Dichlorodifluoromethane (F12)	ND	500	"	"	"	"	"	"	
Chloromethane	ND	500	"	"	"	"	"	"	
Vinyl chloride	ND	50	"	"	"	"	"	"	
Bromomethane	ND	500	"	"	"	"	"	"	
Chloroethane	ND	500	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	500	"	"	"	"	"	"	
1,1-Dichloroethene	ND	500	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	**1000**	500	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	500	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	500	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	500	"	"	"	"	"	"	
1,1-Dichloroethane	ND	500	"	"	"	"	"	"	
2,2-Dichloropropane	ND	500	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	500	"	"	"	"	"	"	
Chloroform	ND	100	"	"	"	"	"	"	
Bromochloromethane	ND	500	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	500	"	"	"	"	"	"	
1,1-Dichloropropene	ND	500	"	"	"	"	"	"	
Carbon tetrachloride	ND	100	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	100	"	"	"	"	"	"	
Benzene	ND	100	"	"	"	"	"	"	
Trichloroethene	**1400**	100	"	"	"	"	"	"	
1,2-Dichloropropane	ND	500	"	"	"	"	"	"	
Bromodichloromethane	ND	500	"	"	"	"	"	"	
Dibromomethane	ND	500	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	500	"	"	"	"	"	"	
Toluene	ND	1000	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	500	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	500	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	500	"	"	"	"	"	"	
1,3-Dichloropropane	ND	500	"	"	"	"	"	"	
Tetrachloroethene	**23000**	100	"	"	"	"	"	"	
Dibromochloromethane	ND	500	"	"	"	"	"	"	
Chlorobenzene	ND	100	"	"	"	"	"	"	
Ethylbenzene	ND	500	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	500	"	"	"	"	"	"	

H&P Mobile
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ERM - Irvine	Project: ERM032718-L6 Rev	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:12

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B1-3-17 (E803088-13) Vapor Sampled: 27-Mar-18 Received: 27-Mar-18									
m,p-Xylene	ND	500	ug/m3	0.05	EC82708	27-Mar-18	27-Mar-18	H&P 8260SV	
o-Xylene	ND	500	"	"	"	"	"	"	
Styrene	ND	500	"	"	"	"	"	"	
Bromoform	ND	500	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	500	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	500	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	500	"	"	"	"	"	"	
n-Propylbenzene	ND	500	"	"	"	"	"	"	
Bromobenzene	ND	500	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	500	"	"	"	"	"	"	
2-Chlorotoluene	ND	500	"	"	"	"	"	"	
4-Chlorotoluene	ND	500	"	"	"	"	"	"	
tert-Butylbenzene	ND	500	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	500	"	"	"	"	"	"	
sec-Butylbenzene	ND	500	"	"	"	"	"	"	
p-Isopropyltoluene	ND	500	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	500	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	500	"	"	"	"	"	"	
n-Butylbenzene	ND	500	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	500	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	5000	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	500	"	"	"	"	"	"	
Hexachlorobutadiene	ND	500	"	"	"	"	"	"	
Naphthalene	ND	100	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	500	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*104 %*		*75-125*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*92.8 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*105 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*91.6 %*		*75-125*	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6 Rev	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:12

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B1-4-48 (E803088-14) Vapor Sampled: 27-Mar-18 Received: 27-Mar-18									
1,1-Difluoroethane (LCC)	ND	1000	ug/m3	0.1	EC82708	27-Mar-18	27-Mar-18	H&P 8260SV	
Acetone	ND	10000	"	"	"	"	"	"	
Dichlorodifluoromethane (F12)	ND	1000	"	"	"	"	"	"	
Chloromethane	ND	1000	"	"	"	"	"	"	
Vinyl chloride	ND	100	"	"	"	"	"	"	
Bromomethane	ND	1000	"	"	"	"	"	"	
Chloroethane	ND	1000	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	1000	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1000	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	**5900**	1000	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	1000	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	1000	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1000	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1000	"	"	"	"	"	"	
2,2-Dichloropropane	ND	1000	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**1200**	1000	"	"	"	"	"	"	
Chloroform	ND	200	"	"	"	"	"	"	
Bromochloromethane	ND	1000	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1000	"	"	"	"	"	"	
1,1-Dichloropropene	ND	1000	"	"	"	"	"	"	
Carbon tetrachloride	ND	200	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	200	"	"	"	"	"	"	
Benzene	ND	200	"	"	"	"	"	"	
Trichloroethene	**8700**	200	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1000	"	"	"	"	"	"	
Bromodichloromethane	ND	1000	"	"	"	"	"	"	
Dibromomethane	ND	1000	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	1000	"	"	"	"	"	"	
Toluene	ND	2000	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	1000	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	1000	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	1000	"	"	"	"	"	"	
1,3-Dichloropropane	ND	1000	"	"	"	"	"	"	
Tetrachloroethene	**55000**	200	"	"	"	"	"	"	
Dibromochloromethane	ND	1000	"	"	"	"	"	"	
Chlorobenzene	ND	200	"	"	"	"	"	"	
Ethylbenzene	ND	1000	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	1000	"	"	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6 Rev	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:12

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B1-4-48 (E803088-14) Vapor Sampled: 27-Mar-18 Received: 27-Mar-18									
m,p-Xylene	ND	1000	ug/m3	0.1	EC82708	27-Mar-18	27-Mar-18	H&P 8260SV	
o-Xylene	ND	1000	"	"	"	"	"	"	
Styrene	ND	1000	"	"	"	"	"	"	
Bromoform	ND	1000	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	1000	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1000	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	1000	"	"	"	"	"	"	
n-Propylbenzene	ND	1000	"	"	"	"	"	"	
Bromobenzene	ND	1000	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1000	"	"	"	"	"	"	
2-Chlorotoluene	ND	1000	"	"	"	"	"	"	
4-Chlorotoluene	ND	1000	"	"	"	"	"	"	
tert-Butylbenzene	ND	1000	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1000	"	"	"	"	"	"	
sec-Butylbenzene	ND	1000	"	"	"	"	"	"	
p-Isopropyltoluene	ND	1000	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	1000	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	1000	"	"	"	"	"	"	
n-Butylbenzene	ND	1000	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	1000	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	10000	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1000	"	"	"	"	"	"	
Hexachlorobutadiene	ND	1000	"	"	"	"	"	"	
Naphthalene	ND	200	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	1000	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*100 %*		*75-125*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*93.0 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*105 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*92.1 %*		*75-125*	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6 Rev	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:12

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B1-4-80 (E803088-15) Vapor Sampled: 27-Mar-18 Received: 27-Mar-18									
1,1-Difluoroethane (LCC)	ND	1000	ug/m3	0.1	EC82708	27-Mar-18	27-Mar-18	H&P 8260SV	
Acetone	ND	10000	"	"	"	"	"	"	
Dichlorodifluoromethane (F12)	ND	1000	"	"	"	"	"	"	
Chloromethane	ND	1000	"	"	"	"	"	"	
Vinyl chloride	ND	100	"	"	"	"	"	"	
Bromomethane	ND	1000	"	"	"	"	"	"	
Chloroethane	ND	1000	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	1000	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1000	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	**6700**	1000	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	1000	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	1000	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1000	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1000	"	"	"	"	"	"	
2,2-Dichloropropane	ND	1000	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**1600**	1000	"	"	"	"	"	"	
Chloroform	ND	200	"	"	"	"	"	"	
Bromochloromethane	ND	1000	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1000	"	"	"	"	"	"	
1,1-Dichloropropene	ND	1000	"	"	"	"	"	"	
Carbon tetrachloride	ND	200	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	200	"	"	"	"	"	"	
Benzene	ND	200	"	"	"	"	"	"	
Trichloroethene	**12000**	200	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1000	"	"	"	"	"	"	
Bromodichloromethane	ND	1000	"	"	"	"	"	"	
Dibromomethane	ND	1000	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	1000	"	"	"	"	"	"	
Toluene	ND	2000	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	1000	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	1000	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	1000	"	"	"	"	"	"	
1,3-Dichloropropane	ND	1000	"	"	"	"	"	"	
Tetrachloroethene	**75000**	200	"	"	"	"	"	"	
Dibromochloromethane	ND	1000	"	"	"	"	"	"	
Chlorobenzene	ND	200	"	"	"	"	"	"	
Ethylbenzene	ND	1000	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	1000	"	"	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6 Rev	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:12

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B1-4-80 (E803088-15) Vapor Sampled: 27-Mar-18 Received: 27-Mar-18									
m,p-Xylene	ND	1000	ug/m3	0.1	EC82708	27-Mar-18	27-Mar-18	H&P 8260SV	
o-Xylene	ND	1000	"	"	"	"	"	"	
Styrene	ND	1000	"	"	"	"	"	"	
Bromoform	ND	1000	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	1000	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1000	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	1000	"	"	"	"	"	"	
n-Propylbenzene	ND	1000	"	"	"	"	"	"	
Bromobenzene	ND	1000	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1000	"	"	"	"	"	"	
2-Chlorotoluene	ND	1000	"	"	"	"	"	"	
4-Chlorotoluene	ND	1000	"	"	"	"	"	"	
tert-Butylbenzene	ND	1000	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1000	"	"	"	"	"	"	
sec-Butylbenzene	ND	1000	"	"	"	"	"	"	
p-Isopropyltoluene	ND	1000	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	1000	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	1000	"	"	"	"	"	"	
n-Butylbenzene	ND	1000	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	1000	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	10000	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1000	"	"	"	"	"	"	
Hexachlorobutadiene	ND	1000	"	"	"	"	"	"	
Naphthalene	ND	200	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	1000	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*97.2 %*		*75-125*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*87.4 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*106 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*93.3 %*		*75-125*	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6 Rev	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:12

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B1-4-32 (E803092-01) Vapor Sampled: 28-Mar-18 Received: 28-Mar-18									
1,1-Difluoroethane (LCC)	ND	500	ug/m3	0.05	EC82807	28-Mar-18	28-Mar-18	H&P 8260SV	
Acetone	ND	5000	"	"	"	"	"	"	
Dichlorodifluoromethane (F12)	ND	500	"	"	"	"	"	"	
Chloromethane	ND	500	"	"	"	"	"	"	
Vinyl chloride	ND	50	"	"	"	"	"	"	
Bromomethane	ND	500	"	"	"	"	"	"	
Chloroethane	ND	500	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	500	"	"	"	"	"	"	
1,1-Dichloroethene	ND	500	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	**4400**	500	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	500	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	500	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	500	"	"	"	"	"	"	
1,1-Dichloroethane	ND	500	"	"	"	"	"	"	
2,2-Dichloropropane	ND	500	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**750**	500	"	"	"	"	"	"	
Chloroform	ND	100	"	"	"	"	"	"	
Bromochloromethane	ND	500	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	500	"	"	"	"	"	"	
1,1-Dichloropropene	ND	500	"	"	"	"	"	"	
Carbon tetrachloride	ND	100	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	100	"	"	"	"	"	"	
Benzene	ND	100	"	"	"	"	"	"	
Trichloroethene	**7300**	100	"	"	"	"	"	"	
1,2-Dichloropropane	ND	500	"	"	"	"	"	"	
Bromodichloromethane	ND	500	"	"	"	"	"	"	
Dibromomethane	ND	500	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	500	"	"	"	"	"	"	
Toluene	ND	1000	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	500	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	500	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	500	"	"	"	"	"	"	
1,3-Dichloropropane	ND	500	"	"	"	"	"	"	
Tetrachloroethene	**49000**	100	"	"	"	"	"	"	
Dibromochloromethane	ND	500	"	"	"	"	"	"	
Chlorobenzene	ND	100	"	"	"	"	"	"	
Ethylbenzene	ND	500	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	500	"	"	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6 Rev	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:12

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B1-4-32 (E803092-01) Vapor Sampled: 28-Mar-18 Received: 28-Mar-18									
m,p-Xylene	ND	500	ug/m3	0.05	EC82807	28-Mar-18	28-Mar-18	H&P 8260SV	
o-Xylene	ND	500	"	"	"	"	"	"	
Styrene	ND	500	"	"	"	"	"	"	
Bromoform	ND	500	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	500	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	500	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	500	"	"	"	"	"	"	
n-Propylbenzene	ND	500	"	"	"	"	"	"	
Bromobenzene	ND	500	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	500	"	"	"	"	"	"	
2-Chlorotoluene	ND	500	"	"	"	"	"	"	
4-Chlorotoluene	ND	500	"	"	"	"	"	"	
tert-Butylbenzene	ND	500	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	500	"	"	"	"	"	"	
sec-Butylbenzene	ND	500	"	"	"	"	"	"	
p-Isopropyltoluene	ND	500	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	500	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	500	"	"	"	"	"	"	
n-Butylbenzene	ND	500	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	500	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	5000	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	500	"	"	"	"	"	"	
Hexachlorobutadiene	ND	500	"	"	"	"	"	"	
Naphthalene	ND	100	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	500	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*99.0 %*		*75-125*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*96.3 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*109 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*89.4 %*		*75-125*	"	"	"	"	

H&P Mobile
Geochemistry Inc.

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ERM - Irvine	Project: ERM032718-L6 Rev	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:12

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B1-4-22 (E803092-02) Vapor Sampled: 28-Mar-18 Received: 28-Mar-18									
1,1-Difluoroethane (LCC)	ND	500	ug/m3	0.05	EC82807	28-Mar-18	28-Mar-18	H&P 8260SV	
Acetone	ND	5000	"	"	"	"	"	"	
Dichlorodifluoromethane (F12)	ND	500	"	"	"	"	"	"	
Chloromethane	ND	500	"	"	"	"	"	"	
Vinyl chloride	ND	50	"	"	"	"	"	"	
Bromomethane	ND	500	"	"	"	"	"	"	
Chloroethane	ND	500	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	500	"	"	"	"	"	"	
1,1-Dichloroethene	ND	500	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	**1800**	500	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	500	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	500	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	500	"	"	"	"	"	"	
1,1-Dichloroethane	ND	500	"	"	"	"	"	"	
2,2-Dichloropropane	ND	500	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	500	"	"	"	"	"	"	
Chloroform	ND	100	"	"	"	"	"	"	
Bromochloromethane	ND	500	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	500	"	"	"	"	"	"	
1,1-Dichloropropene	ND	500	"	"	"	"	"	"	
Carbon tetrachloride	ND	100	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	100	"	"	"	"	"	"	
Benzene	ND	100	"	"	"	"	"	"	
Trichloroethene	**1400**	100	"	"	"	"	"	"	
1,2-Dichloropropane	ND	500	"	"	"	"	"	"	
Bromodichloromethane	ND	500	"	"	"	"	"	"	
Dibromomethane	ND	500	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	500	"	"	"	"	"	"	
Toluene	ND	1000	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	500	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	500	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	500	"	"	"	"	"	"	
1,3-Dichloropropane	ND	500	"	"	"	"	"	"	
Tetrachloroethene	**20000**	100	"	"	"	"	"	"	
Dibromochloromethane	ND	500	"	"	"	"	"	"	
Chlorobenzene	ND	100	"	"	"	"	"	"	
Ethylbenzene	ND	500	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	500	"	"	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6 Rev	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:12

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B1-4-22 (E803092-02) Vapor Sampled: 28-Mar-18 Received: 28-Mar-18									
m,p-Xylene	ND	500	ug/m3	0.05	EC82807	28-Mar-18	28-Mar-18	H&P 8260SV	
o-Xylene	ND	500	"	"	"	"	"	"	
Styrene	ND	500	"	"	"	"	"	"	
Bromoform	ND	500	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	500	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	500	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	500	"	"	"	"	"	"	
n-Propylbenzene	ND	500	"	"	"	"	"	"	
Bromobenzene	ND	500	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	500	"	"	"	"	"	"	
2-Chlorotoluene	ND	500	"	"	"	"	"	"	
4-Chlorotoluene	ND	500	"	"	"	"	"	"	
tert-Butylbenzene	ND	500	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	500	"	"	"	"	"	"	
sec-Butylbenzene	ND	500	"	"	"	"	"	"	
p-Isopropyltoluene	ND	500	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	500	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	500	"	"	"	"	"	"	
n-Butylbenzene	ND	500	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	500	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	5000	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	500	"	"	"	"	"	"	
Hexachlorobutadiene	ND	500	"	"	"	"	"	"	
Naphthalene	ND	100	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	500	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*101 %*	*75-125*		"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*94.7 %*	*75-125*		"	"	"	"	
Surrogate: Toluene-d8		*107 %*	*75-125*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*88.4 %*	*75-125*		"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6 Rev	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:12

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B1-5-80 (E803092-03) Vapor Sampled: 28-Mar-18 Received: 28-Mar-18									
1,1-Difluoroethane (LCC)	ND	1000	ug/m3	0.1	EC82807	28-Mar-18	28-Mar-18	H&P 8260SV	
Acetone	ND	10000	"	"	"	"	"	"	
Dichlorodifluoromethane (F12)	ND	1000	"	"	"	"	"	"	
Chloromethane	ND	1000	"	"	"	"	"	"	
Vinyl chloride	ND	100	"	"	"	"	"	"	
Bromomethane	ND	1000	"	"	"	"	"	"	
Chloroethane	ND	1000	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	1000	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1000	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	**7000**	1000	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	1000	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	1000	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1000	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1000	"	"	"	"	"	"	
2,2-Dichloropropane	ND	1000	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1000	"	"	"	"	"	"	
Chloroform	ND	200	"	"	"	"	"	"	
Bromochloromethane	ND	1000	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1000	"	"	"	"	"	"	
1,1-Dichloropropene	ND	1000	"	"	"	"	"	"	
Carbon tetrachloride	ND	200	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	200	"	"	"	"	"	"	
Benzene	ND	200	"	"	"	"	"	"	
Trichloroethene	**25000**	200	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1000	"	"	"	"	"	"	
Bromodichloromethane	ND	1000	"	"	"	"	"	"	
Dibromomethane	ND	1000	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	1000	"	"	"	"	"	"	
Toluene	ND	2000	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	1000	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	1000	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	1000	"	"	"	"	"	"	
1,3-Dichloropropane	ND	1000	"	"	"	"	"	"	
Tetrachloroethene	**150000**	200	"	"	"	"	"	"	
Dibromochloromethane	ND	1000	"	"	"	"	"	"	
Chlorobenzene	ND	200	"	"	"	"	"	"	
Ethylbenzene	ND	1000	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	1000	"	"	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6 Rev	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:12

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B1-5-80 (E803092-03) Vapor Sampled: 28-Mar-18 Received: 28-Mar-18									
m,p-Xylene	ND	1000	ug/m3	0.1	EC82807	28-Mar-18	28-Mar-18	H&P 8260SV	
o-Xylene	ND	1000	"	"	"	"	"	"	
Styrene	ND	1000	"	"	"	"	"	"	
Bromoform	ND	1000	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	1000	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1000	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	1000	"	"	"	"	"	"	
n-Propylbenzene	ND	1000	"	"	"	"	"	"	
Bromobenzene	ND	1000	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1000	"	"	"	"	"	"	
2-Chlorotoluene	ND	1000	"	"	"	"	"	"	
4-Chlorotoluene	ND	1000	"	"	"	"	"	"	
tert-Butylbenzene	ND	1000	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1000	"	"	"	"	"	"	
sec-Butylbenzene	ND	1000	"	"	"	"	"	"	
p-Isopropyltoluene	ND	1000	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	1000	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	1000	"	"	"	"	"	"	
n-Butylbenzene	ND	1000	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	1000	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	10000	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1000	"	"	"	"	"	"	
Hexachlorobutadiene	ND	1000	"	"	"	"	"	"	
Naphthalene	ND	200	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	1000	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*99.4 %*		*75-125*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*87.4 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*105 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*91.2 %*		*75-125*	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6 Rev	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:12

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B1-5-53 (E803092-04) Vapor Sampled: 28-Mar-18 Received: 28-Mar-18									
1,1-Difluoroethane (LCC)	ND	1000	ug/m3	0.1	EC82807	28-Mar-18	28-Mar-18	H&P 8260SV	
Acetone	ND	10000	"	"	"	"	"	"	
Dichlorodifluoromethane (F12)	ND	1000	"	"	"	"	"	"	
Chloromethane	ND	1000	"	"	"	"	"	"	
Vinyl chloride	ND	100	"	"	"	"	"	"	
Bromomethane	ND	1000	"	"	"	"	"	"	
Chloroethane	ND	1000	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	1000	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1000	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	**6600**	1000	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	1000	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	1000	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1000	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1000	"	"	"	"	"	"	
2,2-Dichloropropane	ND	1000	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1000	"	"	"	"	"	"	
Chloroform	**210**	200	"	"	"	"	"	"	
Bromochloromethane	ND	1000	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1000	"	"	"	"	"	"	
1,1-Dichloropropene	ND	1000	"	"	"	"	"	"	
Carbon tetrachloride	ND	200	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	200	"	"	"	"	"	"	
Benzene	ND	200	"	"	"	"	"	"	
Trichloroethene	**22000**	200	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1000	"	"	"	"	"	"	
Bromodichloromethane	ND	1000	"	"	"	"	"	"	
Dibromomethane	ND	1000	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	1000	"	"	"	"	"	"	
Toluene	ND	2000	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	1000	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	1000	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	1000	"	"	"	"	"	"	
1,3-Dichloropropane	ND	1000	"	"	"	"	"	"	
Tetrachloroethene	**150000**	200	"	"	"	"	"	"	
Dibromochloromethane	ND	1000	"	"	"	"	"	"	
Chlorobenzene	ND	200	"	"	"	"	"	"	
Ethylbenzene	ND	1000	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	1000	"	"	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6 Rev	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:12

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B1-5-53 (E803092-04) Vapor Sampled: 28-Mar-18 Received: 28-Mar-18									
m,p-Xylene	ND	1000	ug/m3	0.1	EC82807	28-Mar-18	28-Mar-18	H&P 8260SV	
o-Xylene	ND	1000	"	"	"	"	"	"	
Styrene	ND	1000	"	"	"	"	"	"	
Bromoform	ND	1000	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	1000	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1000	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	1000	"	"	"	"	"	"	
n-Propylbenzene	ND	1000	"	"	"	"	"	"	
Bromobenzene	ND	1000	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1000	"	"	"	"	"	"	
2-Chlorotoluene	ND	1000	"	"	"	"	"	"	
4-Chlorotoluene	ND	1000	"	"	"	"	"	"	
tert-Butylbenzene	ND	1000	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1000	"	"	"	"	"	"	
sec-Butylbenzene	ND	1000	"	"	"	"	"	"	
p-Isopropyltoluene	ND	1000	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	1000	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	1000	"	"	"	"	"	"	
n-Butylbenzene	ND	1000	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	1000	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	10000	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1000	"	"	"	"	"	"	
Hexachlorobutadiene	ND	1000	"	"	"	"	"	"	
Naphthalene	ND	200	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	1000	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*104 %*		*75-125*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*90.9 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*103 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*91.2 %*		*75-125*	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6 Rev	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:12

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B1-5-33 (E803092-05) Vapor Sampled: 28-Mar-18 Received: 28-Mar-18									
1,1-Difluoroethane (LCC)	ND	1000	ug/m3	0.1	EC82807	28-Mar-18	28-Mar-18	H&P 8260SV	
Acetone	ND	10000	"	"	"	"	"	"	
Dichlorodifluoromethane (F12)	ND	1000	"	"	"	"	"	"	
Chloromethane	ND	1000	"	"	"	"	"	"	
Vinyl chloride	ND	100	"	"	"	"	"	"	
Bromomethane	ND	1000	"	"	"	"	"	"	
Chloroethane	ND	1000	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	1000	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1000	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	**5800**	1000	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	1000	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	1000	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1000	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1000	"	"	"	"	"	"	
2,2-Dichloropropane	ND	1000	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1000	"	"	"	"	"	"	
Chloroform	**230**	200	"	"	"	"	"	"	
Bromochloromethane	ND	1000	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1000	"	"	"	"	"	"	
1,1-Dichloropropene	ND	1000	"	"	"	"	"	"	
Carbon tetrachloride	ND	200	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	200	"	"	"	"	"	"	
Benzene	ND	200	"	"	"	"	"	"	
Trichloroethene	**18000**	200	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1000	"	"	"	"	"	"	
Bromodichloromethane	ND	1000	"	"	"	"	"	"	
Dibromomethane	ND	1000	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	1000	"	"	"	"	"	"	
Toluene	ND	2000	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	1000	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	1000	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	1000	"	"	"	"	"	"	
1,3-Dichloropropane	ND	1000	"	"	"	"	"	"	
Tetrachloroethene	**300000**	400	"	0.2	"	"	"	"	
Dibromochloromethane	ND	1000	"	0.1	"	"	"	"	
Chlorobenzene	ND	200	"	"	"	"	"	"	
Ethylbenzene	ND	1000	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	1000	"	"	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6 Rev	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:12

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B1-5-33 (E803092-05) Vapor Sampled: 28-Mar-18 Received: 28-Mar-18									
m,p-Xylene	ND	1000	ug/m3	0.1	EC82807	28-Mar-18	28-Mar-18	H&P 8260SV	
o-Xylene	ND	1000	"	"	"	"	"	"	
Styrene	ND	1000	"	"	"	"	"	"	
Bromoform	ND	1000	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	1000	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1000	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	1000	"	"	"	"	"	"	
n-Propylbenzene	ND	1000	"	"	"	"	"	"	
Bromobenzene	ND	1000	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1000	"	"	"	"	"	"	
2-Chlorotoluene	ND	1000	"	"	"	"	"	"	
4-Chlorotoluene	ND	1000	"	"	"	"	"	"	
tert-Butylbenzene	ND	1000	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1000	"	"	"	"	"	"	
sec-Butylbenzene	ND	1000	"	"	"	"	"	"	
p-Isopropyltoluene	ND	1000	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	1000	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	1000	"	"	"	"	"	"	
n-Butylbenzene	ND	1000	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	1000	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	10000	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1000	"	"	"	"	"	"	
Hexachlorobutadiene	ND	1000	"	"	"	"	"	"	
Naphthalene	ND	200	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	1000	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*99.9 %*		*75-125*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*89.0 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*105 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*92.0 %*		*75-125*	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6 Rev	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:12

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B1-5-22 (E803092-06) Vapor Sampled: 28-Mar-18 Received: 28-Mar-18									
1,1-Difluoroethane (LCC)	ND	1000	ug/m3	0.1	EC82807	28-Mar-18	28-Mar-18	H&P 8260SV	
Acetone	ND	10000	"	"	"	"	"	"	
Dichlorodifluoromethane (F12)	ND	1000	"	"	"	"	"	"	
Chloromethane	ND	1000	"	"	"	"	"	"	
Vinyl chloride	ND	100	"	"	"	"	"	"	
Bromomethane	ND	1000	"	"	"	"	"	"	
Chloroethane	ND	1000	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	1000	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1000	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	**3900**	1000	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	1000	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	1000	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1000	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1000	"	"	"	"	"	"	
2,2-Dichloropropane	ND	1000	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1000	"	"	"	"	"	"	
Chloroform	**550**	200	"	"	"	"	"	"	
Bromochloromethane	ND	1000	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1000	"	"	"	"	"	"	
1,1-Dichloropropene	ND	1000	"	"	"	"	"	"	
Carbon tetrachloride	ND	200	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	200	"	"	"	"	"	"	
Benzene	ND	200	"	"	"	"	"	"	
Trichloroethene	**7900**	200	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1000	"	"	"	"	"	"	
Bromodichloromethane	ND	1000	"	"	"	"	"	"	
Dibromomethane	ND	1000	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	1000	"	"	"	"	"	"	
Toluene	ND	2000	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	1000	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	1000	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	1000	"	"	"	"	"	"	
1,3-Dichloropropane	ND	1000	"	"	"	"	"	"	
Tetrachloroethene	**690000**	800	"	0.4	"	"	"	"	
Dibromochloromethane	ND	1000	"	0.1	"	"	"	"	
Chlorobenzene	ND	200	"	"	"	"	"	"	
Ethylbenzene	ND	1000	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	1000	"	"	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6 Rev	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:12

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B1-5-22 (E803092-06) Vapor Sampled: 28-Mar-18 Received: 28-Mar-18									
m,p-Xylene	ND	1000	ug/m3	0.1	EC82807	28-Mar-18	28-Mar-18	H&P 8260SV	
o-Xylene	ND	1000	"	"	"	"	"	"	
Styrene	ND	1000	"	"	"	"	"	"	
Bromoform	ND	1000	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	1000	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1000	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	1000	"	"	"	"	"	"	
n-Propylbenzene	ND	1000	"	"	"	"	"	"	
Bromobenzene	ND	1000	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1000	"	"	"	"	"	"	
2-Chlorotoluene	ND	1000	"	"	"	"	"	"	
4-Chlorotoluene	ND	1000	"	"	"	"	"	"	
tert-Butylbenzene	ND	1000	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1000	"	"	"	"	"	"	
sec-Butylbenzene	ND	1000	"	"	"	"	"	"	
p-Isopropyltoluene	ND	1000	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	1000	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	1000	"	"	"	"	"	"	
n-Butylbenzene	ND	1000	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	1000	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	10000	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1000	"	"	"	"	"	"	
Hexachlorobutadiene	ND	1000	"	"	"	"	"	"	
Naphthalene	ND	200	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	1000	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*101 %*		*75-125*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*89.8 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*105 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*93.7 %*		*75-125*	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6 Rev	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:12

Volatile Organic Compounds by H&P 8260SV - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EC82708 - EPA 5030										
Blank (EC82708-BLK1)				Prepared & Analyzed: 27-Mar-18						
1,1-Difluoroethane (LCC)	ND	100	ug/m3							
Acetone	ND	1000	"							
Dichlorodifluoromethane (F12)	ND	100	"							
Chloromethane	ND	100	"							
Vinyl chloride	ND	10	"							
Bromomethane	ND	100	"							
Chloroethane	ND	100	"							
Trichlorofluoromethane (F11)	ND	100	"							
1,1-Dichloroethene	ND	100	"							
1,1,2 Trichlorotrifluoroethane (F113)	ND	100	"							
Methylene chloride (Dichloromethane)	ND	100	"							
Methyl tertiary-butyl ether (MTBE)	ND	100	"							
trans-1,2-Dichloroethene	ND	100	"							
1,1-Dichloroethane	ND	100	"							
2,2-Dichloropropane	ND	100	"							
cis-1,2-Dichloroethene	ND	100	"							
Chloroform	ND	20	"							
Bromochloromethane	ND	100	"							
1,1,1-Trichloroethane	ND	100	"							
1,1-Dichloropropene	ND	100	"							
Carbon tetrachloride	ND	20	"							
1,2-Dichloroethane (EDC)	ND	20	"							
Benzene	ND	20	"							
Trichloroethene	ND	20	"							
1,2-Dichloropropane	ND	100	"							
Bromodichloromethane	ND	100	"							
Dibromomethane	ND	100	"							
cis-1,3-Dichloropropene	ND	100	"							
Toluene	ND	200	"							
trans-1,3-Dichloropropene	ND	100	"							
1,1,2-Trichloroethane	ND	100	"							
1,2-Dibromoethane (EDB)	ND	100	"							
1,3-Dichloropropane	ND	100	"							
Tetrachloroethene	ND	20	"							

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Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:12

Volatile Organic Compounds by H&P 8260SV - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EC82708 - EPA 5030										
Blank (EC82708-BLK1)				Prepared & Analyzed: 27-Mar-18						
Dibromochloromethane	ND	100	ug/m3							
Chlorobenzene	ND	20	"							
Ethylbenzene	ND	100	"							
1,1,1,2-Tetrachloroethane	ND	100	"							
m,p-Xylene	ND	100	"							
o-Xylene	ND	100	"							
Styrene	ND	100	"							
Bromoform	ND	100	"							
Isopropylbenzene (Cumene)	ND	100	"							
1,1,2,2-Tetrachloroethane	ND	100	"							
1,2,3-Trichloropropane	ND	100	"							
n-Propylbenzene	ND	100	"							
Bromobenzene	ND	100	"							
1,3,5-Trimethylbenzene	ND	100	"							
2-Chlorotoluene	ND	100	"							
4-Chlorotoluene	ND	100	"							
tert-Butylbenzene	ND	100	"							
1,2,4-Trimethylbenzene	ND	100	"							
sec-Butylbenzene	ND	100	"							
p-Isopropyltoluene	ND	100	"							
1,3-Dichlorobenzene	ND	100	"							
1,4-Dichlorobenzene	ND	100	"							
n-Butylbenzene	ND	100	"							
1,2-Dichlorobenzene	ND	100	"							
1,2-Dibromo-3-chloropropane	ND	1000	"							
1,2,4-Trichlorobenzene	ND	100	"							
Hexachlorobutadiene	ND	100	"							
Naphthalene	ND	20	"							
1,2,3-Trichlorobenzene	ND	100	"							
Surrogate: Dibromofluoromethane	*520*		*"*	*500*		*104*	*75-125*			
Surrogate: 1,2-Dichloroethane-d4	*463*		*"*	*500*		*92.5*	*75-125*			
Surrogate: Toluene-d8	*521*		*"*	*500*		*104*	*75-125*			
Surrogate: 4-Bromofluorobenzene	*466*		*"*	*500*		*93.2*	*75-125*			

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1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:12

Volatile Organic Compounds by H&P 8260SV - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EC82708 - EPA 5030										
LCS (EC82708-BS1)				Prepared & Analyzed: 27-Mar-18						
Dichlorodifluoromethane (F12)	3700	500	ug/m3	5000		74.4	70-130			
Vinyl chloride	4400	50	"	5000		87.5	70-130			
Chloroethane	4500	500	"	5000		90.7	70-130			
Trichlorofluoromethane (F11)	3700	500	"	5000		74.2	70-130			
1,1-Dichloroethene	5600	500	"	5000		112	70-130			
1,1,2 Trichlorotrifluoroethane (F113)	5500	500	"	5000		110	70-130			
Methylene chloride (Dichloromethane)	5300	500	"	5000		106	70-130			
trans-1,2-Dichloroethene	5900	500	"	5000		117	70-130			
1,1-Dichloroethane	5300	500	"	5000		105	70-130			
cis-1,2-Dichloroethene	5700	500	"	5000		113	70-130			
Chloroform	5300	100	"	5000		106	70-130			
1,1,1-Trichloroethane	5000	500	"	5000		99.0	70-130			
Carbon tetrachloride	5100	100	"	5000		101	70-130			
1,2-Dichloroethane (EDC)	5200	100	"	5000		104	70-130			
Benzene	5300	100	"	5000		105	70-130			
Trichloroethene	5600	100	"	5000		113	70-130			
Toluene	4900	1000	"	5000		97.3	70-130			
1,1,2-Trichloroethane	5700	500	"	5000		113	70-130			
Tetrachloroethene	5400	100	"	5000		109	70-130			
Ethylbenzene	5200	500	"	5000		104	70-130			
1,1,1,2-Tetrachloroethane	5500	500	"	5000		110	70-130			
m,p-Xylene	10000	500	"	10000		103	70-130			
o-Xylene	5200	500	"	5000		105	70-130			
1,1,2,2-Tetrachloroethane	5100	500	"	5000		102	70-130			
Surrogate: Dibromofluoromethane	*2630*		*"*	*2500*		*105*	*75-125*			
Surrogate: 1,2-Dichloroethane-d4	*2340*		*"*	*2500*		*93.7*	*75-125*			
Surrogate: Toluene-d8	*2640*		*"*	*2500*		*105*	*75-125*			
Surrogate: 4-Bromofluorobenzene	*2470*		*"*	*2500*		*98.7*	*75-125*			

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ERM - Irvine	Project: ERM032718-L6 Rev	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:12

Volatile Organic Compounds by H&P 8260SV - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EC82807 - EPA 5030										
Blank (EC82807-BLK1)				Prepared & Analyzed: 28-Mar-18						
1,1-Difluoroethane (LCC)	ND	100	ug/m3							
Acetone	ND	1000	"							
Dichlorodifluoromethane (F12)	ND	100	"							
Chloromethane	ND	100	"							
Vinyl chloride	ND	10	"							
Bromomethane	ND	100	"							
Chloroethane	ND	100	"							
Trichlorofluoromethane (F11)	ND	100	"							
1,1-Dichloroethene	ND	100	"							
1,1,2 Trichlorotrifluoroethane (F113)	ND	100	"							
Methylene chloride (Dichloromethane)	ND	100	"							
Methyl tertiary-butyl ether (MTBE)	ND	100	"							
trans-1,2-Dichloroethene	ND	100	"							
1,1-Dichloroethane	ND	100	"							
2,2-Dichloropropane	ND	100	"							
cis-1,2-Dichloroethene	ND	100	"							
Chloroform	ND	20	"							
Bromochloromethane	ND	100	"							
1,1,1-Trichloroethane	ND	100	"							
1,1-Dichloropropene	ND	100	"							
Carbon tetrachloride	ND	20	"							
1,2-Dichloroethane (EDC)	ND	20	"							
Benzene	ND	20	"							
Trichloroethene	ND	20	"							
1,2-Dichloropropane	ND	100	"							
Bromodichloromethane	ND	100	"							
Dibromomethane	ND	100	"							
cis-1,3-Dichloropropene	ND	100	"							
Toluene	ND	200	"							
trans-1,3-Dichloropropene	ND	100	"							
1,1,2-Trichloroethane	ND	100	"							
1,2-Dibromoethane (EDB)	ND	100	"							
1,3-Dichloropropane	ND	100	"							
Tetrachloroethene	ND	20	"							

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ERM - Irvine	Project: ERM032718-L6 Rev	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:12

Volatile Organic Compounds by H&P 8260SV - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EC82807 - EPA 5030										
Blank (EC82807-BLK1)				Prepared & Analyzed: 28-Mar-18						
Dibromochloromethane	ND	100	ug/m3							
Chlorobenzene	ND	20	"							
Ethylbenzene	ND	100	"							
1,1,1,2-Tetrachloroethane	ND	100	"							
m,p-Xylene	ND	100	"							
o-Xylene	ND	100	"							
Styrene	ND	100	"							
Bromoform	ND	100	"							
Isopropylbenzene (Cumene)	ND	100	"							
1,1,2,2-Tetrachloroethane	ND	100	"							
1,2,3-Trichloropropane	ND	100	"							
n-Propylbenzene	ND	100	"							
Bromobenzene	ND	100	"							
1,3,5-Trimethylbenzene	ND	100	"							
2-Chlorotoluene	ND	100	"							
4-Chlorotoluene	ND	100	"							
tert-Butylbenzene	ND	100	"							
1,2,4-Trimethylbenzene	ND	100	"							
sec-Butylbenzene	ND	100	"							
p-Isopropyltoluene	ND	100	"							
1,3-Dichlorobenzene	ND	100	"							
1,4-Dichlorobenzene	ND	100	"							
n-Butylbenzene	ND	100	"							
1,2-Dichlorobenzene	ND	100	"							
1,2-Dibromo-3-chloropropane	ND	1000	"							
1,2,4-Trichlorobenzene	ND	100	"							
Hexachlorobutadiene	ND	100	"							
Naphthalene	ND	20	"							
1,2,3-Trichlorobenzene	ND	100	"							
Surrogate: Dibromofluoromethane	*536*		*"*	*500*		*107*	*75-125*			
Surrogate: 1,2-Dichloroethane-d4	*471*		*"*	*500*		*94.3*	*75-125*			
Surrogate: Toluene-d8	*520*		*"*	*500*		*104*	*75-125*			
Surrogate: 4-Bromofluorobenzene	*458*		*"*	*500*		*91.7*	*75-125*			

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760-804-9159 Fax

ERM - Irvine	Project: ERM032718-L6 Rev	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:12

Volatile Organic Compounds by H&P 8260SV - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EC82807 - EPA 5030										
LCS (EC82807-BS1)				Prepared & Analyzed: 28-Mar-18						
Dichlorodifluoromethane (F12)	3600	500	ug/m3	5000		71.8	70-130			
Vinyl chloride	4200	50	"	5000		83.5	70-130			
Chloroethane	4600	500	"	5000		91.3	70-130			
Trichlorofluoromethane (F11)	4300	500	"	5000		86.4	70-130			
1,1-Dichloroethene	5400	500	"	5000		107	70-130			
1,1,2 Trichlorotrifluoroethane (F113)	5500	500	"	5000		109	70-130			
Methylene chloride (Dichloromethane)	5100	500	"	5000		103	70-130			
trans-1,2-Dichloroethene	5500	500	"	5000		110	70-130			
1,1-Dichloroethane	5000	500	"	5000		100	70-130			
cis-1,2-Dichloroethene	5400	500	"	5000		109	70-130			
Chloroform	5100	100	"	5000		102	70-130			
1,1,1-Trichloroethane	4600	500	"	5000		92.8	70-130			
Carbon tetrachloride	4700	100	"	5000		94.4	70-130			
1,2-Dichloroethane (EDC)	4900	100	"	5000		97.0	70-130			
Benzene	5100	100	"	5000		102	70-130			
Trichloroethene	5500	100	"	5000		110	70-130			
Toluene	4700	1000	"	5000		94.6	70-130			
1,1,2-Trichloroethane	5400	500	"	5000		108	70-130			
Tetrachloroethene	5500	100	"	5000		110	70-130			
Ethylbenzene	5400	500	"	5000		107	70-130			
1,1,1,2-Tetrachloroethane	5500	500	"	5000		110	70-130			
m,p-Xylene	11000	500	"	10000		105	70-130			
o-Xylene	5200	500	"	5000		104	70-130			
1,1,2,2-Tetrachloroethane	4800	500	"	5000		95.8	70-130			
Surrogate: Dibromofluoromethane	*2570*		*"*	*2500*		*103*	*75-125*			
Surrogate: 1,2-Dichloroethane-d4	*2240*		*"*	*2500*		*89.6*	*75-125*			
Surrogate: Toluene-d8	*2710*		*"*	*2500*		*108*	*75-125*			
Surrogate: 4-Bromofluorobenzene	*2410*		*"*	*2500*		*96.5*	*75-125*			

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

ERM - Irvine	Project: ERM032718-L6 Rev	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:12

Notes and Definitions

LCC	Leak Check Compound
ND	Analyte NOT DETECTED at or above the reporting limit
MDL	Method Detection Limit
%REC	Percent Recovery
RPD	Relative Percent Difference

All soil results are reported in wet weight.

Appendix

H&P Mobile Geochemistry, Inc. is approved as an Environmental Testing Laboratory and Mobile Laboratory in accordance with the DoD-ELAP Program and ISO/IEC 17025:2005 programs through PJLA, accreditation number 69070 for EPA Method TO-15, H&P Method TO-15, EPA Method 8260B and H&P 8260SV.

H&P is approved by the State of Arizona as an Environmental Testing Laboratory and Mobile Laboratory, certification numbers AZM758 and AZ0779.

H&P is approved by the State of California as an Environmental Laboratory and Mobile Laboratory in conformance with the Environmental Laboratory Accreditation Program (ELAP) for the category of Volatile and Semi-Volatile Organic Chemistry of Hazardous Waste, certification numbers 2740, 2741, 2743, 2744, 2745, 2754 & 2930.

H&P is approved by the State of Florida Department of Health under the National Environmental Laboratory Accreditation Conference (NELAC) certification number E871100.

The complete list of stationary and mobile laboratory certifications along with the fields of testing (FOTs) and analyte lists are available at www.handpmg.com/about/certifications.

H&P Mobile Geochemistry, Inc.
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VAPOR / AIR Chain of Custody

DATE: 3/27/18
Page 1 of 2

Lab Client and Project Information

Lab Client/Consultant: ERM	Project Name / #: 0444392
Lab Client Project Manager: Maggie Tymkan	Project Location: 233 Kansas Ave
Lab Client Address: 1920 Main St. Suite 300	Report E-Mail(s):
Lab Client City, State, Zip: Irvine, CA 92614	
Phone Number: 949-623-4700	

Reporting Requirements
- [x] Standard Report ☐ Level III ☐ Level IV
- ☐ Excel EDD ☐ Other EDD:
- ☐ CA Geotracker Global ID:

Turnaround Time
- ☐ 5-7 day Stnd ☐ 24-Hr Rush
- ☐ 3-day Rush ☒ Mobile Lab
- ☐ 48-Hr Rush ☐ Other:

Sampler Information
- Sampler(s): S. Mayfield
- Signature:
- Date: 3.28.18

Sample Receipt (Lab Use Only)

Date Rec'd: 3/27/18	Control #: 180279.09/.01
H&P Project #	ERM032718-L6
Lab Work Order #	803088
Sample Intact: ☐ Yes ☐ No ☐ See Notes Below	
Receipt Gauge ID:	Temp:
Outside Lab:	
Receipt Notes/Tracking #:	
	Lab PM Initials:

Additional Instructions to Laboratory: EC 82708

** Preferred VOC units (please choose one):*
☐ µg/L ☒ µg/m³ ☐ ppbv ☐ ppmv

SAMPLE NAME	FIELD POINT NAME (if applicable)	DATE mm/dd/yy	TIME 24hr clock	SAMPLE TYPE Indoor Air (IA), Ambient Air (AA), Subslab (SS), Soil Vapor (SV)	CONTAINER SIZE & TYPE 400mL/1L/6L Summa, Tedlar, Tube, etc.	CONTAINER ID (###)	Lab use only: Receipt Vac	VOCs Standard Full List + Acetone ☒ 8260SV ☐ TO-15	VOCs Short List / Project List ☐ 8260SV ☐ TO-15	Oxygenates ☐ 8260SV ☐ TO-15	Naphthalene ☐ 8260SV ☐ TO-15	TPHv as Gas ☐ 8260SVm ☐ TO-15m	Aromatic/Aliphatic Fractions ☐ 8260SVm ☐ TO-15m	Leak Check Compound ☒ DFA ☐ IPA ☐ He	Methane by EPA 8015m	Fixed Gases by ASTM D1945 ☐ CO2 ☐ O2 ☐ N2				
SV-B1-1-80		3/27/18	8:24	SV	Flow 2			X						X						
SV-B1-1-53			9:25					X						X						
SV-B1-1-33			9:48					X						X						
SV-B1-1-22			10:09					X						X						
SV-B1-1-22 REP			10:33					X						X						
SV-B1-2-80			10:53					X						X						
SV-B1-2-49			11:15					X						X						
SV-B1-2-32			11:36					X						X						
SV-B1-2-25			11:57					X						X						
SV-B1-3-80			12:31					X						X						

Approved/Relinquished by: Manuel Lon	Company: ERM	Date: 3/30/2018	Time: 1530	Received by: [signature] Company: H&P Date: 3/27/18 Time:
Approved/Relinquished by:	Company:	Date:	Time:	Received by: Company: Date: Time:
Approved/Relinquished by:	Company:	Date:	Time:	Received by: Company: Date: Time:

**Approval constitutes as authorization to proceed with analysis and acceptance of conditions on back*

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VAPOR / AIR Chain of Custody

DATE: 3/27/18
Page 2 of 2

Lab Client and Project Information

Lab Client/Consultant: ERM	Project Name / #: 0444392
Lab Client Project Manager: Maggie Tymkan	Project Location: 233 Kansas Ave
Lab Client Address: 1920 Main St. Suite 300	Report E-Mail(s):
Lab Client City, State, Zip: Irvine, CA 92614	
Phone Number: 949-623-4700	

Reporting Requirements

☒ Standard Report ☐ Level III ☐ Level IV
☐ Excel EDD ☐ Other EDD:_____
☐ CA Geotracker Global ID:_____

Turnaround Time

☐ 5-7 day Stnd ☐ 24-Hr Rush
☐ 3-day Rush ☒ Mobile Lab
☐ 48-Hr Rush ☐ Other:____

Sampler Information

Sampler(s): S. Maxfield
Signature:
Date: 3.27.18

Sample Receipt (Lab Use Only)

Date Rec'd: 3/27/18 Control #: 180279.00/01
H&P Project # ERM032718-L6
Lab Work Order # E803088
Sample Intact: ☐ Yes ☐ No ☐ See Notes Below
Receipt Gauge ID: Temp:
Outside Lab:
Receipt Notes/Tracking #:
Lab PM Initials:

Additional Instructions to Laboratory:

EC 82708

** Preferred VOC units (please choose one):*
☐ µg/L ☒ µg/m³ ☐ ppbv ☐ ppmv

SAMPLE NAME	FIELD POINT NAME (if applicable)	DATE mm/dd/yy	TIME 24hr clock	SAMPLE TYPE Indoor Air (IA), Ambient Air (AA), Subslab (SS), Soil Vapor (SV)	CONTAINER SIZE & TYPE 400mL/1L/6L Summa, Tedlar, Tube, etc.	CONTAINER ID (###)	Lab use only: Receipt Vac	VOCs Standard Full List ☒ 8260SV ☐ TO-15	VOCs Short List / Project List ☐ 8260SV ☐ TO-15	Oxygenates ☐ 8260SV ☐ TO-15	Naphthalene ☐ 8260SV ☐ TO-15	TPHv as Gas ☐ 8260SVm ☐ TO-15m	Aromatic/Aliphatic Fractions ☐ 8260SVm ☐ TO-15m	Leak Check Compound ☒ DFA ☐ IPA ☐ He	Methane by EPA 8015m	Fixed Gases by ASTM D1945 ☐ CO2 ☐ O2 ☐ N2				
SV-B1-3-54		3/27/18	12:52	SV	6L Summa			X						X						
SV-B1-3-29			13:14					X						X						
SV-B1-3-17			13:34					X						X						
SV-B1-4-18			14:01					X						X						
SV-B1-4-80			14:22					X						X						

3/30/18-1530

Approved/Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:
Manuel Lua	Eram	3/30/2018	1530			3/27/18	
Approved/Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:
Approved/Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:

**Approval constitutes as authorization to proceed with analysis and acceptance of conditions on back*

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VAPOR / AIR Chain of Custody

DATE: 3/28/18
Page 1 of 7

Lab Client and Project Information	
Lab Client/Consultant: ERM	Project Name / #: 0444392
Lab Client Project Manager: Maggie Tymkow	Project Location: 2333 [illegible] Ave
Lab Client Address: 1920 Main St Suite 300	Report E-Mail(s):
Lab Client City, State, Zip: Irvine, CA 92614	
Phone Number: 949-623-4700	

Sample Receipt (Lab Use Only)	
Date Rec'd: 3/28/18	Control #: 18027[illegible]
H&P Project # ER032718-L6	
Lab Work Order # E803092	
Sample Intact: ☐ Yes ☐ No ☐ See Notes Below	
Receipt Gauge ID:	Temp:
Outside Lab:	
Receipt Notes/Tracking #:	
Lab PM Initials:	

Reporting Requirements	Turnaround Time	Sampler Information
☒ Standard Report ☐ Level III ☐ Level IV	☐ 5-7 day Stnd ☐ 24-Hr Rush	Sampler(s): S. Mayfield
☐ Excel EDD ☐ Other EDD:	☐ 3-day Rush ☒ Mobile Lab	Signature: [signature]
☐ CA Geotracker Global ID:	☐ 48-Hr Rush ☐ Other:	Date: 3.28.18

Additional Instructions to Laboratory:

E082807

*** Preferred VOC units (please choose one):**

☐ µg/L ☒ µg/m³ ☐ ppbv ☐ ppmv

SAMPLE NAME	FIELD POINT NAME (if applicable)	DATE mm/dd/yy	TIME 24hr clock	SAMPLE TYPE Indoor Air (IA), Ambient Air (AA), Subslab (SS), Soil Vapor (SV)	CONTAINER SIZE & TYPE 400mL/1L/6L Summa, Tedlar, Tube, etc.	CONTAINER ID (###)	Lab use only: Receipt Vac	VOCs Standard Full List + [illegible] ☒ 8260SV ☐ TO-15	VOCs Short List / Project List ☐ 8260SV ☐ TO-15	Oxygenates ☐ 8260SV ☐ TO-15	Naphthalene ☐ 8260SV ☐ TO-15	TPHv as Gas ☐ 8260SVm ☐ TO-15m	Aromatic/Aliphatic Fractions ☐ 8260SVm ☐ TO-15m	Leak Check Compound ☒ DFA ☐ IPA ☐ He	Methane by EPA 8015m	Fixed Gases by ASTM D1945 ☐ CO2 ☐ O2 ☐ N2				
SV-B1-4-32		3/28/18	7:53	SV	Glass S.			X						X						
SV-B1-4-22		↓	8:16	↓	↓			X						X						
SV-B1-5-80		↓	8:51	↓	↓			X						X						
SV-B1-5-53		↓	9:12	↓	↓			X						X						
SV-B1-5-33		↓	9:35	↓	↓			X						X						
SV-B1-5-22		↓	10:22	↓	↓			X						X						
~~SV-B2-7-80~~		↓	11:15	↓	↓			X						X						
~~SV-B2-7-80 Rep~~		↓	11:44	↓	↓			X						X						
~~SV-B2-7-13~~		↓	12:18	↓	↓			X						X						
~~SV-B2-6-55~~		↓	12:54	↓	↓			X						X						

Approved/Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:
Manuel Lon	ERM	3/30/2018	1532	[signature]	H&P	3/28/18	

*Approval constitutes as authorization to proceed with analysis and acceptance of conditions on back

Log Sheet: Soil Vapor Sampling with Syringe

H&P Project #: ERM032718-L6 / Tech Date: 3.27.18

Site Address: 233 Kansas Ave, El Segundo Page: 1 of 2

Consultant: ERM H&P Rep(s): S. mayfield Reviewed: DB

Consultant Rep(s): manuel T. Chu Scanned: T Torres

Equipment Info
Inline Gauge ID#: —
Pump ID#: 026

Purge Volume Information
PV Amount: 3PV
PV Includes: ☐ Tubing ☐ Sand 40% ☐ Dry Bent 50%

Leak Check Compound ☒ 1,1-DFA ☐ 1,1,1,2-TFA ☐ IPA ☐ Other:
A cloth saturated with LCC is placed around tubing connections and probe seal. This is done for all samples unless otherwise noted.

Resample Key
RS = Resample
RD = for Dilution
RL = for LCC Fail

	Sample Information				Probe Specs							Purge & Collection Information							
	Point ID	Syringe ID	Sample Volume (cc)	Sample Time	Probe Depth (ft)	Tubing Length (ft)	Tubing OD (in.)	Sand Ht (in.)	Sand Dia (in.)	Dry Bent. Ht (in.)	Dry Bent. Dia (in.)	Shut In Test 60 sec (✓)	Leak Check (✓)	Purge Vol (mL)	Purge Flow Rate (mL/min)	Pump Time (min:sec)	Sample Flow Rate (mL/min)	ProbeVac ☒ Hg ☐ H_2O	
1	SV-B1-1-80	209/232	100	0824	80'	82'	1/4"	24"	8"	48"	8"	✓	✓	84220	5L/m	16'51"	200	2"	
2	SV-B1-1-53	(sm) 218/247	~~100~~ 50	0925	53'	55'	1/4	24	8	48	8	✓	✓	83828	5L/m	16'46"	200	1.5"	*A, *B
3	SV-B1-1-80 RD	263	50	0904	80'	82'	1/4	24	8	48	8	✓	✓	84270	—	—	200	2"	
4	SV-B1-1-33	209	50	0948	33'	35'	1/4	24	8	48	8	✓	✓	83537	5L/m	16'42"	200	1"	*A
5	SV-B1-1-22	255	50	1009	22'	24'	1/4	24	8	48	8	✓	✓	83378	5L/m	16'41"	200	1.5"	*A
6	SV-B1-1-22-Rep	232	50	1038	22'	24'	1/4	24	8	48	8	✓	✓	83428	—	—	200	1.5"	
7	SV-B1-2-80	218	50	1053	80'	82'	1/4	24	8	48	8	✓	✓	84220	5L/m	16'51"	200	2"	
8	SV-B1-2-49	247	50	1115	49'	51'	1/4	24	8	48	8	✓	✓	83770	5L/m	16'45"	200	1"	
9	SV-B1-2-32	209	50	1136	32'	34'	1/4	24	8	48	8	✓	✓	83523	5L/m	16'42"	200	1.5"	
10	SV-B1-2-25	255	50	1157	25'	27'	1/4	24	8	48	8	✓	✓	83421	5L/m	16'41"	200	1"	
11	SV-B1-3-80	263	50	1231	80'	82'	1/4	24	8	48	8	✓	✓	84220	5L/m	16'51"	200	2"	*C
12	SV-B1-3-54	232	50	1252	54'	56'	1/4	24	8	48	8	✓	✓	83842	5L/m	16'46"	200	2"	*C

Site Notes such as weather, visitors, scope deviations, health & safety issues, etc. (When making sample specific notes, reference the line number above):

*A: Per manuel, SV-B1-1 depths were juxtaposed w/ SV-B1-5, so depths on log sheet reflect correct depths.

*B: Due to pre-dilution, only 50cc syringe needed.

*S. mayfield sampled

*Replaced 3-way valves w/ 1-way stopcocks

*C: 3-way probe valve found open after opening well box lid.

H&P Mobile Geochemistry Inc.

FMS004
Revision: 4
Revised: 3/22/2017
Effective: 3/24/2017
Page 1 of 1

Log Sheet: Soil Vapor Sampling with Syringe

H&P Project #: ERM032718-L6/Tech Date: 3.27.18
Site Address: 233 Kansas Ave, El Segundo Page: 2 of 2
Consultant: ERM H&P Rep(s): S. Mayfield Reviewed: BB
Consultant Rep(s): Manuel T. Chu Scanned: TTorres

Equipment Info
Inline Gauge ID#: —
Pump ID#: 026

Purge Volume Information
PV Amount: 3PV PV Includes: ☐ Tubing ☐ Sand 40% ☒ Dry Bent 50%

Leak Check Compound
A cloth saturated with LCC is placed around tubing connections and probe seal. This is done for all samples unless otherwise noted.
☒ 1,1-DFA ☐ 1,1,1,2-TFA ☐ IPA ☐ Other:

Resample Key
RS = Resample
RD = for Dilution
RL = for LCC Fail

	Sample Information				Probe Specs							Purge & Collection Information							
	Point ID	Syringe ID	Sample Volume (cc)	Sample Time	Probe Depth (ft)	Tubing Length (ft)	Tubing OD (in.)	Sand Ht (in.)	Sand Dia (in.)	Dry Bent. Ht (in.)	Dry Bent. Dia (in.)	Shut In Test 60 sec (✓)	Leak Check (✓)	Purge Vol (mL)	Purge Flow Rate (mL/min)	Pump Time (min:sec)	Sample Flow Rate (mL/min)	ProbeVac ☒ Hg ☐ H_2O	
1	SV-B1-3-29	218	50	1314	29'	31'	1/4"	24"	8"	48"	8"	✓	✓	83479	5L/m	16'42"	200	2"	AC
2	SV-B1-3-17	179	50	1334	17'	19'	1/4	24	8	48	8	✓	✓	83305	5L/m	16'40	200	1"	AC
3	SV-B1-4-80	~~204~~ 247	50	1422	80'	82'	1/4	24	8	48	8	✓	✓	84220	5L/m	16'51"	200	1.5"	*C
4	SV-B1-4-48	~~209~~	50	1401	48'	50'	1/4	24	8	48	8	✓	✓	83755	5L/m	16'45"	200	1.5"	*C
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			

Site Notes such as weather, visitors, scope deviations, health & safety issues, etc. (When making sample specific notes, reference the line number above):
*AC: Found existing valves on probes open w/ opened well-box. *Replaced all values w/ 1-way stopcocks

H&P Mobile Geochemistry Inc.

FMS004
Revision: 4
Revised: 3/22/2017
Effective: 3/24/2017
Page 1 of 1

Log Sheet: Soil Vapor Sampling with Syringe

H&P Project #: ERM032718-L6/Tech Date: 3.28.18
Site Address: 233 Kansas st., El Segundo Page: 1 of 2
Consultant: ERM H&P Rep(s): S. mayfield Reviewed: DB
Consultant Rep(s): Manuel T. Chu Scanned: TTorres

Equipment Info
Inline Gauge ID#: /
Pump ID#: 026

Purge Volume Information
PV Amount: 3PV
PV Includes: ☐ Tubing ☐ Sand 40% ☒ Dry Bent 50%

Leak Check Compound
A cloth saturated with LCC is placed around tubing connections and probe seal. This is done for all samples unless otherwise noted.
☒ 1,1-DFA ☐ 1,1,1,2-TFA ☐ IPA ☐ Other:

Resample Key
RS = Resample
RD = for Dilution
RL = for LCC Fail

	Sample Information				Probe Specs							Purge & Collection Information							
	Point ID	Syringe ID	Sample Volume (cc)	Sample Time	Probe Depth (ft)	Tubing Length (ft)	Tubing OD (in.)	Sand Ht (in.)	Sand Dia (in.)	Dry Bent. Ht (in.)	Dry Bent. Dia (in.)	Shut In Test 60 sec (✓)	Leak Check (✓)	Purge Vol (mL)	Purge Flow Rate (mL/min)	Pump Time (min:sec)	Sample Flow Rate (mL/min)	ProbeVac ☒ Hg ☐ H_2O	
1	SV-B1-4-32	268	50	0753	32'	34'	1/4"	24"	8"	48"	8"	✓	✓	83623	5L/m	16'42"	200	1"	
2	SV-B1-4-22	263	50	0816	22'	23'	1/4	24	8	48	8	✓	✓	83378	5L/m	16'41"	200	1"	
3	SV-B1-5-80	209	50	0851	80'	82'	1/4	24	8	48	8	✓	✓	84220	5L/m	16'51"	200	~~2"~~ (RW)	*A
4	SV-B1-5-53	255	50	0912	53'	55'	1/4	24	8	48	8	✓	✓	83828	5L/m	16'46"	200	1"	*A
5	SV-B1-5-33	232	50	0935	33'	35'	1/4	24	8	48	8	✓	✓	83537	5L/m	16'42"	200	1"	*A
6	SV-B1-5-22	218	50	1022	22'	24'	1/4	24	8	48	8	✓	✓	83378	5L/m	16'41"	200	2"	*A
7	SV-B1-5-33 RD	179	50	0958	33'	35'	1/4	24	8	48	8	✓	✓	83587	—	—	200	1"	
8	~~SV-B2-7-80~~	~~247~~	~~50~~	~~1115~~	~~80'~~	~~82'~~	~~1/4~~	~~24~~	~~8~~	~~48~~	~~8~~	✓	✓	84220	5L/m	16'51"	200	1"	
9	~~SV-B2-7-80 Rep~~	~~268~~	~~50~~	~~1144~~	~~80'~~	~~82'~~	~~1/4~~	~~24~~	~~8~~	~~48~~	~~8~~	✓	✓	84290	—	—	200	1"	
10	~~SV-B2-7-55~~	~~209~~	~~50~~	~~No sample~~	~~55'~~	~~57'~~	~~1/4~~	~~24~~	~~8~~	~~48~~	~~8~~	✓	✓						*C
11	~~SV-B2-7-28~~	~~218~~	~~50~~	~~1323~~	~~28'~~	~~30'~~	~~1/4~~	~~24~~	~~8~~	~~48~~	~~8~~	✓	✓	83464	2L/m*	41'44"	200	~~45"~~ H_2O*	*B
12	~~SV-B2-7-13~~	~~255~~	~~50~~	~~1218~~	~~13'~~	~~15'~~	~~1/4~~	~~24~~	~~8~~	~~48~~	~~8~~	✓	✓	83505	5L/m	16'39"	200	~~2"~~	

Site Notes such as weather, visitors, scope deviations, health & safety issues, etc. (When making sample specific notes, reference the line number above):
*A: All valves in well-box B1-5 were open when opened well-box
*B: Due to reduced flow, lowered Purge rate to 2L/m.
*Replaced old valves w/ new 1-ways w/ stopcocks on all probes
*C: Low flow. Flow at 300ml/m. No sample on 3.28; will try on 3.29
*S. mayfield sampled probes

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WORK ORDER NUMBER: 18-03-1546

The difference is service

AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: ERM-WEST

Client Project Name: Infineon / 0444392.002

Attention: Maggie Tymkow
1920 Main Street
Suite 300
Irvine, CA 92614-7279

Approved for release on 03/20/2018 by:
Virendra Patel
Project Manager

ResultLink

Email your PM

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Contents

Client Project Name: Infineon / 0444392.002
Work Order Number: 18-03-1546

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Work Order Narrative

Work Order: 18-03-1546 Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 03/19/18. They were assigned to Work Order 18-03-1546.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

DoD Projects:

The test results contained in this report are accredited under the laboratory's ISO/IEC 17025:2005 and DoD-ELAP accreditation issued by the ANSI-ASQ National Accreditation Board. Refer to certificate and scope of accreditation ADE-1864.

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Sample Summary

Client:	ERM-WEST 1920 Main Street, Suite 300 Irvine, CA 92614-7279	Work Order:	18-03-1546
		Project Name:	Infineon / 0444392.002
		PO Number:	
		Date/Time Received:	03/19/18 17:30
		Number of Containers:	26
Attn:	Maggie Tymkow		

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
B1-1-10	18-03-1546-1	03/19/18 09:40	4	Solid
B1-1-22	18-03-1546-2	03/19/18 09:53	4	Solid
B1-1-33	18-03-1546-3	03/19/18 10:04	4	Solid
B1-1-53	18-03-1546-4	03/19/18 10:19	4	Solid
B1-1-80	18-03-1546-5	03/19/18 11:05	4	Solid
B1-15-53	18-03-1546-6	03/19/18 10:19	4	Solid
Trip Blk	18-03-1546-7	03/19/18 00:00	2	Aqueous

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Detections Summary

Client:	ERM-WEST	Work Order:	18-03-1546
	1920 Main Street, Suite 300	Project Name:	Infineon / 0444392.002
	Irvine, CA 92614-7279	Received:	03/19/18
Attn:	Maggie Tymkow		Page 1 of 1

Client SampleID / Analyte	Result	Qualifiers	RL	Units	Method	Extraction
B1-1-53 (18-03-1546-4)						
Tetrachloroethene	1.3		1.1	ug/kg	EPA 8260B	EPA 5035
B1-15-53 (18-03-1546-6)						
Tetrachloroethene	1.2		1.1	ug/kg	EPA 8260B	EPA 5035

Subcontracted analyses, if any, are not included in this summary.

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* MDL is shown

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392.002

Date Received: 03/19/18
Work Order: 18-03-1546
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Trip Blk	**18-03-1546-7-A**	**03/19/18 00:00**	**Aqueous**	**GC/MS V V**	**03/19/18**	**03/19/18 21:29**	**180319L013**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	20	1.00	
Benzene	ND	0.50	1.00	
Bromobenzene	ND	1.0	1.00	
Bromochloromethane	ND	1.0	1.00	
Bromodichloromethane	ND	1.0	1.00	
Bromoform	ND	1.0	1.00	
Bromomethane	ND	10	1.00	
2-Butanone	ND	10	1.00	
n-Butylbenzene	ND	1.0	1.00	
sec-Butylbenzene	ND	1.0	1.00	
tert-Butylbenzene	ND	1.0	1.00	
Carbon Disulfide	ND	10	1.00	
Carbon Tetrachloride	ND	0.50	1.00	
Chlorobenzene	ND	1.0	1.00	
Chloroethane	ND	5.0	1.00	
Chloroform	ND	1.0	1.00	
Chloromethane	ND	10	1.00	
2-Chlorotoluene	ND	1.0	1.00	
4-Chlorotoluene	ND	1.0	1.00	
Dibromochloromethane	ND	1.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.0	1.00	
1,2-Dibromoethane	ND	1.0	1.00	
Dibromomethane	ND	1.0	1.00	
1,2-Dichlorobenzene	ND	1.0	1.00	
1,3-Dichlorobenzene	ND	1.0	1.00	
1,4-Dichlorobenzene	ND	1.0	1.00	
Dichlorodifluoromethane	ND	1.0	1.00	
1,1-Dichloroethane	ND	1.0	1.00	
1,2-Dichloroethane	ND	0.50	1.00	
1,1-Dichloroethene	ND	1.0	1.00	
c-1,2-Dichloroethene	ND	1.0	1.00	
t-1,2-Dichloroethene	ND	1.0	1.00	
1,2-Dichloropropane	ND	1.0	1.00	
1,3-Dichloropropane	ND	1.0	1.00	
2,2-Dichloropropane	ND	1.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/19/18
1920 Main Street, Suite 300	Work Order:	18-03-1546
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/L
Project: Infineon / 0444392.002		Page 2 of 6

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	1.0	1.00	
c-1,3-Dichloropropene	ND	0.50	1.00	
t-1,3-Dichloropropene	ND	0.50	1.00	
Ethylbenzene	ND	1.0	1.00	
2-Hexanone	ND	10	1.00	
Isopropylbenzene	ND	1.0	1.00	
p-Isopropyltoluene	ND	1.0	1.00	
Methylene Chloride	ND	10	1.00	
4-Methyl-2-Pentanone	ND	10	1.00	
Naphthalene	ND	10	1.00	
n-Propylbenzene	ND	1.0	1.00	
Styrene	ND	1.0	1.00	
1,1,1,2-Tetrachloroethane	ND	1.0	1.00	
1,1,2,2-Tetrachloroethane	ND	1.0	1.00	
Tetrachloroethene	ND	1.0	1.00	
Toluene	ND	1.0	1.00	
1,2,3-Trichlorobenzene	ND	1.0	1.00	
1,2,4-Trichlorobenzene	ND	1.0	1.00	
1,1,1-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.00	
1,1,2-Trichloroethane	ND	1.0	1.00	
Trichloroethene	ND	1.0	1.00	
Trichlorofluoromethane	ND	10	1.00	
1,2,3-Trichloropropane	ND	5.0	1.00	
1,2,4-Trimethylbenzene	ND	1.0	1.00	
1,3,5-Trimethylbenzene	ND	1.0	1.00	
Vinyl Acetate	ND	10	1.00	
Vinyl Chloride	ND	0.50	1.00	
p/m-Xylene	ND	1.0	1.00	
o-Xylene	ND	1.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	1.0	1.00	
Tert-Butyl Alcohol (TBA)	ND	10	1.00	
Diisopropyl Ether (DIPE)	ND	2.0	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	2.0	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	2.0	1.00	
Ethanol	ND	100	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	94	77-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/19/18
1920 Main Street, Suite 300	Work Order:	18-03-1546
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/L
Project: Infineon / 0444392.002		Page 3 of 6

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	102	80-128	
1,2-Dichloroethane-d4	102	80-129	
Toluene-d8	99	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/19/18
Work Order: 18-03-1546
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

Project: Infineon / 0444392.002

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-14-001-25447**	**N/A**	**Aqueous**	**GC/MS V V**	**03/19/18**	**03/19/18 18:10**	**180319L013**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	20	1.00	
Benzene	ND	0.50	1.00	
Bromobenzene	ND	1.0	1.00	
Bromochloromethane	ND	1.0	1.00	
Bromodichloromethane	ND	1.0	1.00	
Bromoform	ND	1.0	1.00	
Bromomethane	ND	10	1.00	
2-Butanone	ND	10	1.00	
n-Butylbenzene	ND	1.0	1.00	
sec-Butylbenzene	ND	1.0	1.00	
tert-Butylbenzene	ND	1.0	1.00	
Carbon Disulfide	ND	10	1.00	
Carbon Tetrachloride	ND	0.50	1.00	
Chlorobenzene	ND	1.0	1.00	
Chloroethane	ND	5.0	1.00	
Chloroform	ND	1.0	1.00	
Chloromethane	ND	10	1.00	
2-Chlorotoluene	ND	1.0	1.00	
4-Chlorotoluene	ND	1.0	1.00	
Dibromochloromethane	ND	1.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.0	1.00	
1,2-Dibromoethane	ND	1.0	1.00	
Dibromomethane	ND	1.0	1.00	
1,2-Dichlorobenzene	ND	1.0	1.00	
1,3-Dichlorobenzene	ND	1.0	1.00	
1,4-Dichlorobenzene	ND	1.0	1.00	
Dichlorodifluoromethane	ND	1.0	1.00	
1,1-Dichloroethane	ND	1.0	1.00	
1,2-Dichloroethane	ND	0.50	1.00	
1,1-Dichloroethene	ND	1.0	1.00	
c-1,2-Dichloroethene	ND	1.0	1.00	
t-1,2-Dichloroethene	ND	1.0	1.00	
1,2-Dichloropropane	ND	1.0	1.00	
1,3-Dichloropropane	ND	1.0	1.00	
2,2-Dichloropropane	ND	1.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/19/18
1920 Main Street, Suite 300	Work Order:	18-03-1546
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/L
Project: Infineon / 0444392.002		Page 5 of 6

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	1.0	1.00	
c-1,3-Dichloropropene	ND	0.50	1.00	
t-1,3-Dichloropropene	ND	0.50	1.00	
Ethylbenzene	ND	1.0	1.00	
2-Hexanone	ND	10	1.00	
Isopropylbenzene	ND	1.0	1.00	
p-Isopropyltoluene	ND	1.0	1.00	
Methylene Chloride	ND	10	1.00	
4-Methyl-2-Pentanone	ND	10	1.00	
Naphthalene	ND	10	1.00	
n-Propylbenzene	ND	1.0	1.00	
Styrene	ND	1.0	1.00	
1,1,1,2-Tetrachloroethane	ND	1.0	1.00	
1,1,2,2-Tetrachloroethane	ND	1.0	1.00	
Tetrachloroethene	ND	1.0	1.00	
Toluene	ND	1.0	1.00	
1,2,3-Trichlorobenzene	ND	1.0	1.00	
1,2,4-Trichlorobenzene	ND	1.0	1.00	
1,1,1-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.00	
1,1,2-Trichloroethane	ND	1.0	1.00	
Trichloroethene	ND	1.0	1.00	
Trichlorofluoromethane	ND	10	1.00	
1,2,3-Trichloropropane	ND	5.0	1.00	
1,2,4-Trimethylbenzene	ND	1.0	1.00	
1,3,5-Trimethylbenzene	ND	1.0	1.00	
Vinyl Acetate	ND	10	1.00	
Vinyl Chloride	ND	0.50	1.00	
p/m-Xylene	ND	1.0	1.00	
o-Xylene	ND	1.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	1.0	1.00	
Tert-Butyl Alcohol (TBA)	ND	10	1.00	
Diisopropyl Ether (DIPE)	ND	2.0	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	2.0	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	2.0	1.00	
Ethanol	ND	100	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	95	77-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/19/18
1920 Main Street, Suite 300	Work Order:	18-03-1546
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/L
Project: Infineon / 0444392.002		Page 6 of 6

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	100	80-128	
1,2-Dichloroethane-d4	101	80-129	
Toluene-d8	99	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392.002

Date Received: 03/19/18
Work Order: 18-03-1546
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B1-1-10	**18-03-1546-1-D**	**03/19/18 09:40**	**Solid**	**GC/MS OO**	**03/19/18**	**03/19/18 22:26**	**180319L032**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	57	1.00	
Benzene	ND	1.1	1.00	
Bromobenzene	ND	1.1	1.00	
Bromochloromethane	ND	2.3	1.00	
Bromodichloromethane	ND	1.1	1.00	
Bromoform	ND	5.7	1.00	
Bromomethane	ND	23	1.00	
2-Butanone	ND	23	1.00	
n-Butylbenzene	ND	1.1	1.00	
sec-Butylbenzene	ND	1.1	1.00	
tert-Butylbenzene	ND	1.1	1.00	
Carbon Disulfide	ND	11	1.00	
Carbon Tetrachloride	ND	1.1	1.00	
Chlorobenzene	ND	1.1	1.00	
Chloroethane	ND	2.3	1.00	
Chloroform	ND	1.1	1.00	
Chloromethane	ND	23	1.00	
2-Chlorotoluene	ND	1.1	1.00	
4-Chlorotoluene	ND	1.1	1.00	
Dibromochloromethane	ND	2.3	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.7	1.00	
1,2-Dibromoethane	ND	1.1	1.00	
Dibromomethane	ND	1.1	1.00	
1,2-Dichlorobenzene	ND	1.1	1.00	
1,3-Dichlorobenzene	ND	1.1	1.00	
1,4-Dichlorobenzene	ND	1.1	1.00	
Dichlorodifluoromethane	ND	2.3	1.00	
1,1-Dichloroethane	ND	1.1	1.00	
1,2-Dichloroethane	ND	1.1	1.00	
1,1-Dichloroethene	ND	1.1	1.00	
c-1,2-Dichloroethene	ND	1.1	1.00	
t-1,2-Dichloroethene	ND	1.1	1.00	
1,2-Dichloropropane	ND	1.1	1.00	
1,3-Dichloropropane	ND	1.1	1.00	
2,2-Dichloropropane	ND	5.7	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/19/18
1920 Main Street, Suite 300	Work Order:	18-03-1546
Irvine, CA 92614-7279	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: Infineon / 0444392.002		Page 2 of 21

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.3	1.00	
c-1,3-Dichloropropene	ND	1.1	1.00	
t-1,3-Dichloropropene	ND	2.3	1.00	
Ethylbenzene	ND	1.1	1.00	
2-Hexanone	ND	23	1.00	
Isopropylbenzene	ND	1.1	1.00	
p-Isopropyltoluene	ND	1.1	1.00	
Methylene Chloride	ND	11	1.00	
4-Methyl-2-Pentanone	ND	23	1.00	
Naphthalene	ND	11	1.00	
n-Propylbenzene	ND	2.3	1.00	
Styrene	ND	1.1	1.00	
1,1,1,2-Tetrachloroethane	ND	1.1	1.00	
1,1,2,2-Tetrachloroethane	ND	2.3	1.00	
Tetrachloroethene	ND	1.1	1.00	
Toluene	ND	1.1	1.00	
1,2,3-Trichlorobenzene	ND	2.3	1.00	
1,2,4-Trichlorobenzene	ND	2.3	1.00	
1,1,1-Trichloroethane	ND	1.1	1.00	
1,1,2-Trichloroethane	ND	1.1	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	11	1.00	
Trichloroethene	ND	2.3	1.00	
Trichlorofluoromethane	ND	11	1.00	
1,2,3-Trichloropropane	ND	2.3	1.00	
1,2,4-Trimethylbenzene	ND	2.3	1.00	
1,3,5-Trimethylbenzene	ND	2.3	1.00	
Vinyl Acetate	ND	11	1.00	
Vinyl Chloride	ND	1.1	1.00	
p/m-Xylene	ND	2.3	1.00	
o-Xylene	ND	1.1	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.3	1.00	
Tert-Butyl Alcohol (TBA)	ND	23	1.00	
Diisopropyl Ether (DIPE)	ND	1.1	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.1	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.1	1.00	
Ethanol	ND	570	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	91	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/19/18
1920 Main Street, Suite 300	Work Order:	18-03-1546
Irvine, CA 92614-7279	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: Infineon / 0444392.002		Page 3 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	124	79-133	
1,2-Dichloroethane-d4	136	71-155	
Toluene-d8	102	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/19/18
Work Order: 18-03-1546
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Project: Infineon / 0444392.002

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B1-1-22	**18-03-1546-2-C**	**03/19/18 09:53**	**Solid**	**GC/MS OO**	**03/19/18**	**03/19/18 21:57**	**180319L032**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	53	1.00	
Benzene	ND	1.1	1.00	
Bromobenzene	ND	1.1	1.00	
Bromochloromethane	ND	2.1	1.00	
Bromodichloromethane	ND	1.1	1.00	
Bromoform	ND	5.3	1.00	
Bromomethane	ND	21	1.00	
2-Butanone	ND	21	1.00	
n-Butylbenzene	ND	1.1	1.00	
sec-Butylbenzene	ND	1.1	1.00	
tert-Butylbenzene	ND	1.1	1.00	
Carbon Disulfide	ND	11	1.00	
Carbon Tetrachloride	ND	1.1	1.00	
Chlorobenzene	ND	1.1	1.00	
Chloroethane	ND	2.1	1.00	
Chloroform	ND	1.1	1.00	
Chloromethane	ND	21	1.00	
2-Chlorotoluene	ND	1.1	1.00	
4-Chlorotoluene	ND	1.1	1.00	
Dibromochloromethane	ND	2.1	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.3	1.00	
1,2-Dibromoethane	ND	1.1	1.00	
Dibromomethane	ND	1.1	1.00	
1,2-Dichlorobenzene	ND	1.1	1.00	
1,3-Dichlorobenzene	ND	1.1	1.00	
1,4-Dichlorobenzene	ND	1.1	1.00	
Dichlorodifluoromethane	ND	2.1	1.00	
1,1-Dichloroethane	ND	1.1	1.00	
1,2-Dichloroethane	ND	1.1	1.00	
1,1-Dichloroethene	ND	1.1	1.00	
c-1,2-Dichloroethene	ND	1.1	1.00	
t-1,2-Dichloroethene	ND	1.1	1.00	
1,2-Dichloropropane	ND	1.1	1.00	
1,3-Dichloropropane	ND	1.1	1.00	
2,2-Dichloropropane	ND	5.3	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/19/18
1920 Main Street, Suite 300		Work Order:	18-03-1546
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392.002			Page 5 of 21

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.1	1.00	
c-1,3-Dichloropropene	ND	1.1	1.00	
t-1,3-Dichloropropene	ND	2.1	1.00	
Ethylbenzene	ND	1.1	1.00	
2-Hexanone	ND	21	1.00	
Isopropylbenzene	ND	1.1	1.00	
p-Isopropyltoluene	ND	1.1	1.00	
Methylene Chloride	ND	11	1.00	
4-Methyl-2-Pentanone	ND	21	1.00	
Naphthalene	ND	11	1.00	
n-Propylbenzene	ND	2.1	1.00	
Styrene	ND	1.1	1.00	
1,1,1,2-Tetrachloroethane	ND	1.1	1.00	
1,1,2,2-Tetrachloroethane	ND	2.1	1.00	
Tetrachloroethene	ND	1.1	1.00	
Toluene	ND	1.1	1.00	
1,2,3-Trichlorobenzene	ND	2.1	1.00	
1,2,4-Trichlorobenzene	ND	2.1	1.00	
1,1,1-Trichloroethane	ND	1.1	1.00	
1,1,2-Trichloroethane	ND	1.1	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	11	1.00	
Trichloroethene	ND	2.1	1.00	
Trichlorofluoromethane	ND	11	1.00	
1,2,3-Trichloropropane	ND	2.1	1.00	
1,2,4-Trimethylbenzene	ND	2.1	1.00	
1,3,5-Trimethylbenzene	ND	2.1	1.00	
Vinyl Acetate	ND	11	1.00	
Vinyl Chloride	ND	1.1	1.00	
p/m-Xylene	ND	2.1	1.00	
o-Xylene	ND	1.1	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.1	1.00	
Tert-Butyl Alcohol (TBA)	ND	21	1.00	
Diisopropyl Ether (DIPE)	ND	1.1	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.1	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.1	1.00	
Ethanol	ND	530	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	93	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/19/18
1920 Main Street, Suite 300	Work Order:	18-03-1546
Irvine, CA 92614-7279	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: Infineon / 0444392.002		Page 6 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	122	79-133	
1,2-Dichloroethane-d4	131	71-155	
Toluene-d8	102	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392.002

Date Received: 03/19/18
Work Order: 18-03-1546
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B1-1-33	**18-03-1546-3-C**	**03/19/18 10:04**	**Solid**	**GC/MS OO**	**03/19/18**	**03/19/18 22:55**	**180319L032**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	52	1.00	
Benzene	ND	1.0	1.00	
Bromobenzene	ND	1.0	1.00	
Bromochloromethane	ND	2.1	1.00	
Bromodichloromethane	ND	1.0	1.00	
Bromoform	ND	5.2	1.00	
Bromomethane	ND	21	1.00	
2-Butanone	ND	21	1.00	
n-Butylbenzene	ND	1.0	1.00	
sec-Butylbenzene	ND	1.0	1.00	
tert-Butylbenzene	ND	1.0	1.00	
Carbon Disulfide	ND	10	1.00	
Carbon Tetrachloride	ND	1.0	1.00	
Chlorobenzene	ND	1.0	1.00	
Chloroethane	ND	2.1	1.00	
Chloroform	ND	1.0	1.00	
Chloromethane	ND	21	1.00	
2-Chlorotoluene	ND	1.0	1.00	
4-Chlorotoluene	ND	1.0	1.00	
Dibromochloromethane	ND	2.1	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.2	1.00	
1,2-Dibromoethane	ND	1.0	1.00	
Dibromomethane	ND	1.0	1.00	
1,2-Dichlorobenzene	ND	1.0	1.00	
1,3-Dichlorobenzene	ND	1.0	1.00	
1,4-Dichlorobenzene	ND	1.0	1.00	
Dichlorodifluoromethane	ND	2.1	1.00	
1,1-Dichloroethane	ND	1.0	1.00	
1,2-Dichloroethane	ND	1.0	1.00	
1,1-Dichloroethene	ND	1.0	1.00	
c-1,2-Dichloroethene	ND	1.0	1.00	
t-1,2-Dichloroethene	ND	1.0	1.00	
1,2-Dichloropropane	ND	1.0	1.00	
1,3-Dichloropropane	ND	1.0	1.00	
2,2-Dichloropropane	ND	5.2	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/19/18
1920 Main Street, Suite 300	Work Order:	18-03-1546
Irvine, CA 92614-7279	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: Infineon / 0444392.002		Page 8 of 21

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.1	1.00	
c-1,3-Dichloropropene	ND	1.0	1.00	
t-1,3-Dichloropropene	ND	2.1	1.00	
Ethylbenzene	ND	1.0	1.00	
2-Hexanone	ND	21	1.00	
Isopropylbenzene	ND	1.0	1.00	
p-Isopropyltoluene	ND	1.0	1.00	
Methylene Chloride	ND	10	1.00	
4-Methyl-2-Pentanone	ND	21	1.00	
Naphthalene	ND	10	1.00	
n-Propylbenzene	ND	2.1	1.00	
Styrene	ND	1.0	1.00	
1,1,1,2-Tetrachloroethane	ND	1.0	1.00	
1,1,2,2-Tetrachloroethane	ND	2.1	1.00	
Tetrachloroethene	ND	1.0	1.00	
Toluene	ND	1.0	1.00	
1,2,3-Trichlorobenzene	ND	2.1	1.00	
1,2,4-Trichlorobenzene	ND	2.1	1.00	
1,1,1-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.00	
Trichloroethene	ND	2.1	1.00	
Trichlorofluoromethane	ND	10	1.00	
1,2,3-Trichloropropane	ND	2.1	1.00	
1,2,4-Trimethylbenzene	ND	2.1	1.00	
1,3,5-Trimethylbenzene	ND	2.1	1.00	
Vinyl Acetate	ND	10	1.00	
Vinyl Chloride	ND	1.0	1.00	
p/m-Xylene	ND	2.1	1.00	
o-Xylene	ND	1.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.1	1.00	
Tert-Butyl Alcohol (TBA)	ND	21	1.00	
Diisopropyl Ether (DIPE)	ND	1.0	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.0	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.0	1.00	
Ethanol	ND	520	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	91	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/19/18
1920 Main Street, Suite 300	Work Order:	18-03-1546
Irvine, CA 92614-7279	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: Infineon / 0444392.002		Page 9 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	123	79-133	
1,2-Dichloroethane-d4	134	71-155	
Toluene-d8	103	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/19/18
Work Order: 18-03-1546
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Project: Infineon / 0444392.002

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B1-1-53	**18-03-1546-4-C**	**03/19/18 10:19**	**Solid**	**GC/MS OO**	**03/19/18**	**03/19/18 23:23**	**180319L032**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	54	1.00	
Benzene	ND	1.1	1.00	
Bromobenzene	ND	1.1	1.00	
Bromochloromethane	ND	2.2	1.00	
Bromodichloromethane	ND	1.1	1.00	
Bromoform	ND	5.4	1.00	
Bromomethane	ND	22	1.00	
2-Butanone	ND	22	1.00	
n-Butylbenzene	ND	1.1	1.00	
sec-Butylbenzene	ND	1.1	1.00	
tert-Butylbenzene	ND	1.1	1.00	
Carbon Disulfide	ND	11	1.00	
Carbon Tetrachloride	ND	1.1	1.00	
Chlorobenzene	ND	1.1	1.00	
Chloroethane	ND	2.2	1.00	
Chloroform	ND	1.1	1.00	
Chloromethane	ND	22	1.00	
2-Chlorotoluene	ND	1.1	1.00	
4-Chlorotoluene	ND	1.1	1.00	
Dibromochloromethane	ND	2.2	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.4	1.00	
1,2-Dibromoethane	ND	1.1	1.00	
Dibromomethane	ND	1.1	1.00	
1,2-Dichlorobenzene	ND	1.1	1.00	
1,3-Dichlorobenzene	ND	1.1	1.00	
1,4-Dichlorobenzene	ND	1.1	1.00	
Dichlorodifluoromethane	ND	2.2	1.00	
1,1-Dichloroethane	ND	1.1	1.00	
1,2-Dichloroethane	ND	1.1	1.00	
1,1-Dichloroethene	ND	1.1	1.00	
c-1,2-Dichloroethene	ND	1.1	1.00	
t-1,2-Dichloroethene	ND	1.1	1.00	
1,2-Dichloropropane	ND	1.1	1.00	
1,3-Dichloropropane	ND	1.1	1.00	
2,2-Dichloropropane	ND	5.4	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/19/18
1920 Main Street, Suite 300		Work Order:	18-03-1546
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392.002			Page 11 of 21

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.2	1.00	
c-1,3-Dichloropropene	ND	1.1	1.00	
t-1,3-Dichloropropene	ND	2.2	1.00	
Ethylbenzene	ND	1.1	1.00	
2-Hexanone	ND	22	1.00	
Isopropylbenzene	ND	1.1	1.00	
p-Isopropyltoluene	ND	1.1	1.00	
Methylene Chloride	ND	11	1.00	
4-Methyl-2-Pentanone	ND	22	1.00	
Naphthalene	ND	11	1.00	
n-Propylbenzene	ND	2.2	1.00	
Styrene	ND	1.1	1.00	
1,1,1,2-Tetrachloroethane	ND	1.1	1.00	
1,1,2,2-Tetrachloroethane	ND	2.2	1.00	
Tetrachloroethene	1.3	1.1	1.00	
Toluene	ND	1.1	1.00	
1,2,3-Trichlorobenzene	ND	2.2	1.00	
1,2,4-Trichlorobenzene	ND	2.2	1.00	
1,1,1-Trichloroethane	ND	1.1	1.00	
1,1,2-Trichloroethane	ND	1.1	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	11	1.00	
Trichloroethene	ND	2.2	1.00	
Trichlorofluoromethane	ND	11	1.00	
1,2,3-Trichloropropane	ND	2.2	1.00	
1,2,4-Trimethylbenzene	ND	2.2	1.00	
1,3,5-Trimethylbenzene	ND	2.2	1.00	
Vinyl Acetate	ND	11	1.00	
Vinyl Chloride	ND	1.1	1.00	
p/m-Xylene	ND	2.2	1.00	
o-Xylene	ND	1.1	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.2	1.00	
Tert-Butyl Alcohol (TBA)	ND	22	1.00	
Diisopropyl Ether (DIPE)	ND	1.1	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.1	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.1	1.00	
Ethanol	ND	540	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	91	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/19/18
1920 Main Street, Suite 300	Work Order:	18-03-1546
Irvine, CA 92614-7279	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: Infineon / 0444392.002		Page 12 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	122	79-133	
1,2-Dichloroethane-d4	133	71-155	
Toluene-d8	103	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/19/18
Work Order: 18-03-1546
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Project: Infineon / 0444392.002

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B1-1-80	**18-03-1546-5-C**	**03/19/18 11:05**	**Solid**	**GC/MS OO**	**03/19/18**	**03/19/18 23:52**	**180319L032**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	56	1.00	
Benzene	ND	1.1	1.00	
Bromobenzene	ND	1.1	1.00	
Bromochloromethane	ND	2.3	1.00	
Bromodichloromethane	ND	1.1	1.00	
Bromoform	ND	5.6	1.00	
Bromomethane	ND	23	1.00	
2-Butanone	ND	23	1.00	
n-Butylbenzene	ND	1.1	1.00	
sec-Butylbenzene	ND	1.1	1.00	
tert-Butylbenzene	ND	1.1	1.00	
Carbon Disulfide	ND	11	1.00	
Carbon Tetrachloride	ND	1.1	1.00	
Chlorobenzene	ND	1.1	1.00	
Chloroethane	ND	2.3	1.00	
Chloroform	ND	1.1	1.00	
Chloromethane	ND	23	1.00	
2-Chlorotoluene	ND	1.1	1.00	
4-Chlorotoluene	ND	1.1	1.00	
Dibromochloromethane	ND	2.3	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.6	1.00	
1,2-Dibromoethane	ND	1.1	1.00	
Dibromomethane	ND	1.1	1.00	
1,2-Dichlorobenzene	ND	1.1	1.00	
1,3-Dichlorobenzene	ND	1.1	1.00	
1,4-Dichlorobenzene	ND	1.1	1.00	
Dichlorodifluoromethane	ND	2.3	1.00	
1,1-Dichloroethane	ND	1.1	1.00	
1,2-Dichloroethane	ND	1.1	1.00	
1,1-Dichloroethene	ND	1.1	1.00	
c-1,2-Dichloroethene	ND	1.1	1.00	
t-1,2-Dichloroethene	ND	1.1	1.00	
1,2-Dichloropropane	ND	1.1	1.00	
1,3-Dichloropropane	ND	1.1	1.00	
2,2-Dichloropropane	ND	5.6	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/19/18
1920 Main Street, Suite 300		Work Order:	18-03-1546
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392.002			Page 14 of 21

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.3	1.00	
c-1,3-Dichloropropene	ND	1.1	1.00	
t-1,3-Dichloropropene	ND	2.3	1.00	
Ethylbenzene	ND	1.1	1.00	
2-Hexanone	ND	23	1.00	
Isopropylbenzene	ND	1.1	1.00	
p-Isopropyltoluene	ND	1.1	1.00	
Methylene Chloride	ND	11	1.00	
4-Methyl-2-Pentanone	ND	23	1.00	
Naphthalene	ND	11	1.00	
n-Propylbenzene	ND	2.3	1.00	
Styrene	ND	1.1	1.00	
1,1,1,2-Tetrachloroethane	ND	1.1	1.00	
1,1,2,2-Tetrachloroethane	ND	2.3	1.00	
Tetrachloroethene	ND	1.1	1.00	
Toluene	ND	1.1	1.00	
1,2,3-Trichlorobenzene	ND	2.3	1.00	
1,2,4-Trichlorobenzene	ND	2.3	1.00	
1,1,1-Trichloroethane	ND	1.1	1.00	
1,1,2-Trichloroethane	ND	1.1	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	11	1.00	
Trichloroethene	ND	2.3	1.00	
Trichlorofluoromethane	ND	11	1.00	
1,2,3-Trichloropropane	ND	2.3	1.00	
1,2,4-Trimethylbenzene	ND	2.3	1.00	
1,3,5-Trimethylbenzene	ND	2.3	1.00	
Vinyl Acetate	ND	11	1.00	
Vinyl Chloride	ND	1.1	1.00	
p/m-Xylene	ND	2.3	1.00	
o-Xylene	ND	1.1	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.3	1.00	
Tert-Butyl Alcohol (TBA)	ND	23	1.00	
Diisopropyl Ether (DIPE)	ND	1.1	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.1	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.1	1.00	
Ethanol	ND	560	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	91	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/19/18
1920 Main Street, Suite 300	Work Order:	18-03-1546
Irvine, CA 92614-7279	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: Infineon / 0444392.002		Page 15 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	124	79-133	
1,2-Dichloroethane-d4	135	71-155	
Toluene-d8	103	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/19/18
Work Order: 18-03-1546
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Project: Infineon / 0444392.002

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B1-15-53	**18-03-1546-6-C**	**03/19/18 10:19**	**Solid**	**GC/MS OO**	**03/19/18**	**03/20/18 00:21**	**180319L032**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	56	1.00	
Benzene	ND	1.1	1.00	
Bromobenzene	ND	1.1	1.00	
Bromochloromethane	ND	2.3	1.00	
Bromodichloromethane	ND	1.1	1.00	
Bromoform	ND	5.6	1.00	
Bromomethane	ND	23	1.00	
2-Butanone	ND	23	1.00	
n-Butylbenzene	ND	1.1	1.00	
sec-Butylbenzene	ND	1.1	1.00	
tert-Butylbenzene	ND	1.1	1.00	
Carbon Disulfide	ND	11	1.00	
Carbon Tetrachloride	ND	1.1	1.00	
Chlorobenzene	ND	1.1	1.00	
Chloroethane	ND	2.3	1.00	
Chloroform	ND	1.1	1.00	
Chloromethane	ND	23	1.00	
2-Chlorotoluene	ND	1.1	1.00	
4-Chlorotoluene	ND	1.1	1.00	
Dibromochloromethane	ND	2.3	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.6	1.00	
1,2-Dibromoethane	ND	1.1	1.00	
Dibromomethane	ND	1.1	1.00	
1,2-Dichlorobenzene	ND	1.1	1.00	
1,3-Dichlorobenzene	ND	1.1	1.00	
1,4-Dichlorobenzene	ND	1.1	1.00	
Dichlorodifluoromethane	ND	2.3	1.00	
1,1-Dichloroethane	ND	1.1	1.00	
1,2-Dichloroethane	ND	1.1	1.00	
1,1-Dichloroethene	ND	1.1	1.00	
c-1,2-Dichloroethene	ND	1.1	1.00	
t-1,2-Dichloroethene	ND	1.1	1.00	
1,2-Dichloropropane	ND	1.1	1.00	
1,3-Dichloropropane	ND	1.1	1.00	
2,2-Dichloropropane	ND	5.6	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/19/18
1920 Main Street, Suite 300	Work Order:	18-03-1546
Irvine, CA 92614-7279	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: Infineon / 0444392.002		Page 17 of 21

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.3	1.00	
c-1,3-Dichloropropene	ND	1.1	1.00	
t-1,3-Dichloropropene	ND	2.3	1.00	
Ethylbenzene	ND	1.1	1.00	
2-Hexanone	ND	23	1.00	
Isopropylbenzene	ND	1.1	1.00	
p-Isopropyltoluene	ND	1.1	1.00	
Methylene Chloride	ND	11	1.00	
4-Methyl-2-Pentanone	ND	23	1.00	
Naphthalene	ND	11	1.00	
n-Propylbenzene	ND	2.3	1.00	
Styrene	ND	1.1	1.00	
1,1,1,2-Tetrachloroethane	ND	1.1	1.00	
1,1,2,2-Tetrachloroethane	ND	2.3	1.00	
Tetrachloroethene	1.2	1.1	1.00	
Toluene	ND	1.1	1.00	
1,2,3-Trichlorobenzene	ND	2.3	1.00	
1,2,4-Trichlorobenzene	ND	2.3	1.00	
1,1,1-Trichloroethane	ND	1.1	1.00	
1,1,2-Trichloroethane	ND	1.1	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	11	1.00	
Trichloroethene	ND	2.3	1.00	
Trichlorofluoromethane	ND	11	1.00	
1,2,3-Trichloropropane	ND	2.3	1.00	
1,2,4-Trimethylbenzene	ND	2.3	1.00	
1,3,5-Trimethylbenzene	ND	2.3	1.00	
Vinyl Acetate	ND	11	1.00	
Vinyl Chloride	ND	1.1	1.00	
p/m-Xylene	ND	2.3	1.00	
o-Xylene	ND	1.1	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.3	1.00	
Tert-Butyl Alcohol (TBA)	ND	23	1.00	
Diisopropyl Ether (DIPE)	ND	1.1	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.1	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.1	1.00	
Ethanol	ND	560	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	91	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/19/18
1920 Main Street, Suite 300	Work Order:	18-03-1546
Irvine, CA 92614-7279	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: Infineon / 0444392.002		Page 18 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	122	79-133	
1,2-Dichloroethane-d4	135	71-155	
Toluene-d8	103	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/19/18
Work Order: 18-03-1546
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Project: Infineon / 0444392.002

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**095-01-025-29785**	**N/A**	**Solid**	**GC/MS OO**	**03/19/18**	**03/19/18 17:12**	**180319L032**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	50	1.00	
Benzene	ND	1.0	1.00	
Bromobenzene	ND	1.0	1.00	
Bromochloromethane	ND	2.0	1.00	
Bromodichloromethane	ND	1.0	1.00	
Bromoform	ND	5.0	1.00	
Bromomethane	ND	20	1.00	
2-Butanone	ND	20	1.00	
n-Butylbenzene	ND	1.0	1.00	
sec-Butylbenzene	ND	1.0	1.00	
tert-Butylbenzene	ND	1.0	1.00	
Carbon Disulfide	ND	10	1.00	
Carbon Tetrachloride	ND	1.0	1.00	
Chlorobenzene	ND	1.0	1.00	
Chloroethane	ND	2.0	1.00	
Chloroform	ND	1.0	1.00	
Chloromethane	ND	20	1.00	
2-Chlorotoluene	ND	1.0	1.00	
4-Chlorotoluene	ND	1.0	1.00	
Dibromochloromethane	ND	2.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.0	1.00	
1,2-Dibromoethane	ND	1.0	1.00	
Dibromomethane	ND	1.0	1.00	
1,2-Dichlorobenzene	ND	1.0	1.00	
1,3-Dichlorobenzene	ND	1.0	1.00	
1,4-Dichlorobenzene	ND	1.0	1.00	
Dichlorodifluoromethane	ND	2.0	1.00	
1,1-Dichloroethane	ND	1.0	1.00	
1,2-Dichloroethane	ND	1.0	1.00	
1,1-Dichloroethene	ND	1.0	1.00	
c-1,2-Dichloroethene	ND	1.0	1.00	
t-1,2-Dichloroethene	ND	1.0	1.00	
1,2-Dichloropropane	ND	1.0	1.00	
1,3-Dichloropropane	ND	1.0	1.00	
2,2-Dichloropropane	ND	5.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/19/18
1920 Main Street, Suite 300	Work Order:	18-03-1546
Irvine, CA 92614-7279	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: Infineon / 0444392.002		Page 20 of 21

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.0	1.00	
c-1,3-Dichloropropene	ND	1.0	1.00	
t-1,3-Dichloropropene	ND	2.0	1.00	
Ethylbenzene	ND	1.0	1.00	
2-Hexanone	ND	20	1.00	
Isopropylbenzene	ND	1.0	1.00	
p-Isopropyltoluene	ND	1.0	1.00	
Methylene Chloride	ND	10	1.00	
4-Methyl-2-Pentanone	ND	20	1.00	
Naphthalene	ND	10	1.00	
n-Propylbenzene	ND	2.0	1.00	
Styrene	ND	1.0	1.00	
1,1,1,2-Tetrachloroethane	ND	1.0	1.00	
1,1,2,2-Tetrachloroethane	ND	2.0	1.00	
Tetrachloroethene	ND	1.0	1.00	
Toluene	ND	1.0	1.00	
1,2,3-Trichlorobenzene	ND	2.0	1.00	
1,2,4-Trichlorobenzene	ND	2.0	1.00	
1,1,1-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.00	
Trichloroethene	ND	2.0	1.00	
Trichlorofluoromethane	ND	10	1.00	
1,2,3-Trichloropropane	ND	2.0	1.00	
1,2,4-Trimethylbenzene	ND	2.0	1.00	
1,3,5-Trimethylbenzene	ND	2.0	1.00	
Vinyl Acetate	ND	10	1.00	
Vinyl Chloride	ND	1.0	1.00	
p/m-Xylene	ND	2.0	1.00	
o-Xylene	ND	1.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.0	1.00	
Tert-Butyl Alcohol (TBA)	ND	20	1.00	
Diisopropyl Ether (DIPE)	ND	1.0	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.0	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.0	1.00	
Ethanol	ND	500	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	92	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/19/18
1920 Main Street, Suite 300	Work Order:	18-03-1546
Irvine, CA 92614-7279	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: Infineon / 0444392.002		Page 21 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	114	79-133	
1,2-Dichloroethane-d4	115	71-155	
Toluene-d8	101	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Quality Control - LCS/LCSD

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392.002

Date Received: 03/19/18
Work Order: 18-03-1546
Preparation: EPA 5030C
Method: EPA 8260B

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-14-001-25447	**LCS**	**Aqueous**	**GC/MS V V**	**03/19/18**	**03/19/18 16:45**	**180319L013**
099-14-001-25447	**LCSD**	**Aqueous**	**GC/MS V V**	**03/19/18**	**03/19/18 17:13**	**180319L013**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Acetone	50.00	49.28	99	49.47	99	53-137	39-151	0	0-21	
Benzene	50.00	49.26	99	49.47	99	79-121	72-128	0	0-20	
Bromobenzene	50.00	52.00	104	52.65	105	80-120	73-127	1	0-20	
Bromochloromethane	50.00	53.58	107	53.78	108	80-122	73-129	0	0-20	
Bromodichloromethane	50.00	50.34	101	51.20	102	80-124	73-131	2	0-20	
Bromoform	50.00	51.73	103	50.60	101	73-127	64-136	2	0-20	
Bromomethane	50.00	45.28	91	46.71	93	50-150	33-167	3	0-26	
2-Butanone	50.00	51.42	103	48.43	97	60-126	49-137	6	0-20	
n-Butylbenzene	50.00	54.63	109	54.32	109	72-138	61-149	1	0-20	
sec-Butylbenzene	50.00	53.69	107	53.54	107	77-131	68-140	0	0-20	
tert-Butylbenzene	50.00	53.32	107	53.67	107	80-125	72-132	1	0-20	
Carbon Disulfide	50.00	50.91	102	51.25	103	50-150	33-167	1	0-22	
Carbon Tetrachloride	50.00	53.29	107	53.12	106	65-143	52-156	0	0-20	
Chlorobenzene	50.00	51.11	102	51.12	102	80-120	73-127	0	0-20	
Chloroethane	50.00	50.96	102	51.78	104	62-128	51-139	2	0-20	
Chloroform	50.00	49.05	98	48.39	97	80-120	73-127	1	0-20	
Chloromethane	50.00	47.68	95	47.74	95	43-133	28-148	0	0-20	
2-Chlorotoluene	50.00	51.54	103	52.26	105	80-121	73-128	1	0-20	
4-Chlorotoluene	50.00	52.04	104	51.25	102	80-120	73-127	2	0-20	
Dibromochloromethane	50.00	51.89	104	52.40	105	80-123	73-130	1	0-20	
1,2-Dibromo-3-Chloropropane	50.00	52.88	106	51.32	103	66-126	56-136	3	0-20	
1,2-Dibromoethane	50.00	52.83	106	52.42	105	80-120	73-127	1	0-20	
Dibromomethane	50.00	50.76	102	51.12	102	80-120	73-127	1	0-20	
1,2-Dichlorobenzene	50.00	53.30	107	53.08	106	80-120	73-127	0	0-20	
1,3-Dichlorobenzene	50.00	52.40	105	52.34	105	80-120	73-127	0	0-20	
1,4-Dichlorobenzene	50.00	51.68	103	51.46	103	80-120	73-127	0	0-20	
Dichlorodifluoromethane	50.00	54.80	110	53.71	107	50-150	33-167	2	0-30	
1,1-Dichloroethane	50.00	48.90	98	48.83	98	72-126	63-135	0	0-20	
1,2-Dichloroethane	50.00	50.37	101	50.33	101	76-120	69-127	0	0-20	
1,1-Dichloroethene	50.00	51.40	103	51.43	103	66-132	55-143	0	0-20	
c-1,2-Dichloroethene	50.00	48.61	97	48.30	97	78-120	71-127	1	0-20	
t-1,2-Dichloroethene	50.00	48.69	97	48.98	98	66-132	55-143	1	0-20	
1,2-Dichloropropane	50.00	48.91	98	49.30	99	80-120	73-127	1	0-20	
1,3-Dichloropropane	50.00	49.73	99	49.38	99	80-120	73-127	1	0-20	
2,2-Dichloropropane	50.00	50.16	100	48.72	97	50-150	33-167	3	0-20	
1,1-Dichloropropene	50.00	49.89	100	49.82	100	75-123	67-131	0	0-20	

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS/LCSD

ERM-WEST		Date Received:	03/19/18
1920 Main Street, Suite 300		Work Order:	18-03-1546
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
Project: Infineon / 0444392.002			Page 2 of 4

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
c-1,3-Dichloropropene	50.00	49.33	99	49.03	98	77-131	68-140	1	0-20	
t-1,3-Dichloropropene	50.00	52.20	104	51.50	103	76-136	66-146	1	0-20	
Ethylbenzene	50.00	53.02	106	52.87	106	80-120	73-127	0	0-20	
2-Hexanone	50.00	49.44	99	47.91	96	63-123	53-133	3	0-20	
Isopropylbenzene	50.00	52.73	105	52.67	105	80-128	72-136	0	0-20	
p-Isopropyltoluene	50.00	53.55	107	53.43	107	73-133	63-143	0	0-20	
Methylene Chloride	50.00	48.70	97	48.51	97	61-133	49-145	0	0-27	
4-Methyl-2-Pentanone	50.00	47.76	96	46.84	94	65-125	55-135	2	0-20	
Naphthalene	50.00	54.89	110	53.71	107	69-129	59-139	2	0-20	
n-Propylbenzene	50.00	53.08	106	53.04	106	80-128	72-136	0	0-20	
Styrene	50.00	53.34	107	53.42	107	80-126	72-134	0	0-20	
1,1,1,2-Tetrachloroethane	50.00	51.60	103	51.80	104	80-129	72-137	0	0-20	
1,1,2,2-Tetrachloroethane	50.00	50.97	102	49.68	99	74-122	66-130	3	0-20	
Tetrachloroethene	50.00	51.39	103	50.88	102	55-139	41-153	1	0-23	
Toluene	50.00	49.45	99	49.79	100	80-120	73-127	1	0-20	
1,2,3-Trichlorobenzene	50.00	55.12	110	54.64	109	72-132	62-142	1	0-20	
1,2,4-Trichlorobenzene	50.00	55.09	110	54.75	110	74-134	64-144	1	0-20	
1,1,1-Trichloroethane	50.00	49.29	99	49.91	100	76-124	68-132	1	0-20	
1,1,2-Trichloro-1,2,2-Trifluoroethane	50.00	50.55	101	51.05	102	54-150	38-166	1	0-30	
1,1,2-Trichloroethane	50.00	50.94	102	51.06	102	80-120	73-127	0	0-20	
Trichloroethene	50.00	49.54	99	49.69	99	79-121	72-128	0	0-20	
Trichlorofluoromethane	50.00	54.74	109	54.83	110	72-132	62-142	0	0-20	
1,2,3-Trichloropropane	50.00	51.07	102	49.98	100	75-123	67-131	2	0-20	
1,2,4-Trimethylbenzene	50.00	53.12	106	52.92	106	74-128	65-137	0	0-20	
1,3,5-Trimethylbenzene	50.00	52.79	106	53.00	106	77-131	68-140	0	0-20	
Vinyl Acetate	50.00	48.10	96	47.55	95	50-150	33-167	1	0-20	
Vinyl Chloride	50.00	59.19	118	60.10	120	63-129	52-140	2	0-20	
p/m-Xylene	100.0	107.1	107	107.3	107	80-122	73-129	0	0-20	
o-Xylene	50.00	53.07	106	53.48	107	80-128	72-136	1	0-20	
Methyl-t-Butyl Ether (MTBE)	50.00	48.89	98	47.86	96	69-123	60-132	2	0-20	
Tert-Butyl Alcohol (TBA)	250.0	264.4	106	272.2	109	80-124	73-131	3	0-20	
Diisopropyl Ether (DIPE)	50.00	48.51	97	48.12	96	79-121	72-128	1	0-20	
Ethyl-t-Butyl Ether (ETBE)	50.00	48.27	97	47.61	95	71-125	62-134	1	0-20	
Tert-Amyl-Methyl Ether (TAME)	50.00	49.65	99	49.76	100	70-124	61-133	0	0-20	
Ethanol	500.0	501.3	100	506.4	101	53-149	37-165	1	0-24	

Total number of LCS compounds: 71
Total number of ME compounds: 0

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS/LCSD

ERM-WEST	Date Received:	03/19/18
1920 Main Street, Suite 300	Work Order:	18-03-1546
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
Project: Infineon / 0444392.002		Page 3 of 4

Total number of ME compounds allowed: 4
LCS ME CL validation result: Pass

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS/LCSD

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392.002

Date Received: 03/19/18
Work Order: 18-03-1546
Preparation: EPA 5035
Method: EPA 8260B

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
095-01-025-29785	**LCS**	**Solid**	**GC/MS OO**	**03/19/18**	**03/19/18 15:38**	**180319L032**
095-01-025-29785	**LCSD**	**Solid**	**GC/MS OO**	**03/19/18**	**03/19/18 16:07**	**180319L032**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Benzene	50.00	51.61	103	48.47	97	80-120	73-127	6	0-20	
Carbon Tetrachloride	50.00	52.48	105	49.60	99	65-137	53-149	6	0-20	
Chlorobenzene	50.00	47.33	95	44.54	89	80-120	73-127	6	0-20	
1,2-Dibromoethane	50.00	49.73	99	46.94	94	80-120	73-127	6	0-20	
1,2-Dichlorobenzene	50.00	45.34	91	42.59	85	80-120	73-127	6	0-20	
1,2-Dichloroethane	50.00	50.55	101	47.35	95	80-120	73-127	7	0-20	
1,1-Dichloroethene	50.00	47.55	95	45.24	90	68-128	58-138	5	0-20	
Ethylbenzene	50.00	49.45	99	46.83	94	80-120	73-127	5	0-20	
Toluene	50.00	51.88	104	48.82	98	80-120	73-127	6	0-20	
Trichloroethene	50.00	52.10	104	48.91	98	80-120	73-127	6	0-20	
Vinyl Chloride	50.00	47.73	95	49.31	99	67-127	57-137	3	0-20	
p/m-Xylene	100.0	102.2	102	96.90	97	75-125	67-133	5	0-25	
o-Xylene	50.00	52.35	105	49.27	99	75-125	67-133	6	0-25	
Methyl-t-Butyl Ether (MTBE)	50.00	52.49	105	49.96	100	70-124	61-133	5	0-20	
Tert-Butyl Alcohol (TBA)	250.0	232.9	93	218.1	87	73-121	65-129	7	0-20	
Diisopropyl Ether (DIPE)	50.00	55.10	110	52.08	104	69-129	59-139	6	0-20	
Ethyl-t-Butyl Ether (ETBE)	50.00	52.62	105	50.67	101	70-124	61-133	4	0-20	
Tert-Amyl-Methyl Ether (TAME)	50.00	53.00	106	50.66	101	74-122	66-130	5	0-20	
Ethanol	500.0	433.9	87	379.5	76	51-135	37-149	13	0-27	

Total number of LCS compounds: 19
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

RPD: Relative Percent Difference. CL: Control Limits

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Sample Analysis Summary Report

Work Order: 18-03-1546 Page 1 of 1

Method	Extraction	Chemist ID	Instrument	Analytical Location
EPA 8260B	EPA 5035	486	GC/MS OO	2
EPA 8260B	EPA 5030C	1120	GC/MS V V	2

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Glossary of Terms and Qualifiers

Work Order: 18-03-1546 Page 1 of 1

Qualifiers	Definition
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
CI	See case narrative.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.
	Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.
	Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.
	A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

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Revised COC received from Stewart Emhof (ERM) on 03/20/2018 at 10:34am.
- Virendra (ECI)

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WO NO. / LAB USE ONLY: **18-03-1546**

CHAIN-OF-CUSTODY RECORD

Date: 03/19/2018
Page 1 of 1

LABORATORY CLIENT: ERM
ADDRESS: 1920 Main Street - Suite 300
CITY: Irvin STATE: CA ZIP: 92614
TEL: 949-623-4700 E-MAIL: See Special Instructions

CLIENT PROJECT NAME / NO.: Infineon
P.O. NO.: 0444392.002
PROJECT CONTACT: Maggie Tymkow
LAB CONTACT OR QUOTE NO: Virendra Patel
GLOBAL ID:
LOG CODE:
SAMPLER(S): (PRINT) Manuel Leon

TURNAROUND TIME (Rush surcharges may apply to any TAT not "STANDARD"): ☐ SAME DAY ☒ 24 HR (SE) ☐ 48 HR ☐ 72 HR ☐ 5 DAYS ~~☒ STANDARD~~ (SE 3-1)
EDD: ☐ COELT EDF ☐ OTHER

SPECIAL INSTRUCTIONS:
Email to: Brad.Gross@ERM.com
Tony.Parenteau@erm.com
Maggie.Tymkow@erm.com
Stewart.Emhof@erm.com

REQUESTED ANALYSES
Please check box or fill in blank as needed.

Analyses columns: Unpreserved; Preserved; Field Filtered; ☐ TPH(g) ☐ GRO; ☐ TPH(d) ☐ DRO; TPH ☐ C6-C36 ☐ C6-C44; TPH ___; BTEX / MTBE ☐ 8260 ☐ ___; VOCs (8260); Oxygenates (8260); Prep (5035) ☐ En Core ☒ Terra Core; SVOCs (8270); Pesticides (8081); PCBs (8082); PAHs ☐ 8270 ☐ 8270 SIM; T22 Metals ☐ 6010/747X ☐ 6020/747X; Cr(VI) ☐ 7196 ☐ 7199 ☐ 218.6

LAB USE ONLY	SAMPLE ID (3-20-18)	DATE	TIME	MATRIX	NO. OF CONT.	Revised Sample ID	VOCs (8260)
1	~~B1-5-10~~ SE	3/19/18	09:40	Soil	1 Kit	B1-1-10	✓
2	~~B1-5-22~~ SE	3/19/18	09:53	Soil	1 Kit	B1-1-22	✓
3	~~B1-5-33~~ SE	3/19/18	10:04	Soil	1 Kit	B1-1-33	✓
4	~~B1-5-53~~ SE	3/19/18	10:19	Soil	1 Kit	B1-1-53	✓
5	~~B1-5-80~~ SE	3/19/18	11:05	Soil	1 Kit	B1-1-80	✓
6	~~B1-15-53~~ SE	3/19/18	10:19	Soil	1 Kit	B1-15-53	✓
7	Trip Blk			Water	2		✓

SE 3/20/18 (annotation in Preserved column)

Please change TAT from standard to 24-hour SE 3-20-18

MM 3/19/18 - 1230

Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
[signature] 3/19/18 - 1455	Rudy W EC	3/19/18	1455
Rudy W	Danielle EC	3/19/18	17:30

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WO NO. / LAB USE ONLY
18-03-1546

CHAIN-OF-CUSTODY RECORD

Date 03/19/2018
Page 1 of 1

LABORATORY CLIENT: ERM
ADDRESS: 1920 Main Street - suite 300
CITY: Irvine STATE: CA ZIP: 92614
TEL: 949-623-4700 E-MAIL: See Special Instructions
TURNAROUND TIME (Rush surcharges may apply to any TAT not "STANDARD"):
☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAYS ☒ STANDARD
EDD
☐ COELT EDF ☐ OTHER

CLIENT PROJECT NAME / NO.: Infineon
P.O. NO.: 0444392.002
PROJECT CONTACT: Maggie Tymkow
LAB CONTACT OR QUOTE NO: Virendra Patel
GLOBAL ID:
LOG CODE:
SAMPLER(S): (PRINT) Manuel León

SPECIAL INSTRUCTIONS:
Email to: Brad.Gross@ERM.com
Tony.Parenteau@erm.com
Maggie.TymKow@erm.com
Stewart.Emhof@erm.com

REQUESTED ANALYSES
Please check box or fill in blank as needed.

LAB USE ONLY	SAMPLE ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	Unpreserved	Preserved	Field Filtered	☐ TPH(g) ☐ GRO	☐ TPH(d) ☐ DRO	TPH ☐ C6-C36 ☐ C6-C44	TPH_____	BTEX / MTBE ☐ 8260 ☐ _____	VOCs (8260)	Oxygenates (8260)	Prep (5035) ☐ En Core ☒ Terra Core	SVOCs (8270)	Pesticides (8081)	PCBs (8082)	PAHs ☐ 8270 ☐ 8270 SIM	T22 Metals ☐ 6010/747X ☐ 6020/747X	Cr(VI) ☐ 7196 ☐ 7199 ☐ 218.6
1	B1-5-10	3/19/18	09:40	Soil	1 Kit									✓								
2	B1-5-22	3/19/18	09:53	Soil	1 Kit									✓								
3	B1-5-33	3/19/18	10:04	Soil	1 Kit									✓								
4	B1-5-53	3/19/18	10:19	Soil	1 Kit									✓								
5	B1-5-80	3/19/18	11:05	Soil	1 Kit									✓								
6	B1-15-53	3/19/18	10:19	Soil	1 Kit									✓								
7	Trip Blk			Water	2									✓								

3/19/18 - 1230

Relinquished by: (Signature) 3/19/18 - 1455
Relinquished by: (Signature) Rudy M
Relinquished by: (Signature)

Received by: (Signature/Affiliation) Rudy M EC
Received by: (Signature/Affiliation) Danny G EC
Received by: (Signature/Affiliation)

Date: 3/19/18 Time: 1455
Date: 3/19/18 Time: 17:30
Date: Time:

2016-04-01-Revision

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WORK ORDER NUMBER: 18-03-1546

SAMPLE RECEIPT CHECKLIST

COOLER 1 OF 1

CLIENT: ERM

DATE: 03/19/2018

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)

Thermometer ID: SC6 (CF: +0.2°C); Temperature (w/o CF): 2.1 °C (w/ CF): 2.3 °C; ☐ Blank ☑ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____)

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling

☐ Sample(s) received at ambient temperature; placed on ice for transport by courier

Ambient Temperature: ☐ Air ☐ Filter Checked by: 676

CUSTODY SEAL:

Cooler ☐ Present and Intact ☐ Present but Not Intact ☑ Not Present ☐ N/A Checked by: 676

Sample(s) ☐ Present and Intact ☐ Present but Not Intact ☑ Not Present ☐ N/A Checked by: 676

SAMPLE CONDITION:	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☐	☑	☐
☑ Sampling date (-7) ☐ Sampling time ☐ Matrix ☐ Number of containers			
☐ No analysis requested ☐ Not relinquished ☐ No relinquished date ☐ No relinquished time			
Sampler's name indicated on COC	☑	☐	☐
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and in good condition	☑	☐	☐
Proper containers for analyses requested	☑	☐	☐
Sufficient volume/mass for analyses requested	☑	☐	☐
Samples received within holding time	☑	☐	☐
Aqueous samples for certain analyses received within 15-minute holding time			
☐ pH ☐ Residual Chlorine ☐ Dissolved Sulfide ☐ Dissolved Oxygen	☐	☐	☑
Proper preservation chemical(s) noted on COC and/or sample container	☑	☐	☐
Unpreserved aqueous sample(s) received for certain analyses			
☐ Volatile Organics ☐ Total Metals ☐ Dissolved Metals			
Acid/base preserved samples - pH within acceptable range	☐	☐	☑
Container(s) for certain analysis free of headspace	☑	☐	☐
☑ Volatile Organics ☐ Dissolved Gases (RSK-175) ☐ Dissolved Oxygen (SM 4500)			
☐ Carbon Dioxide (SM 4500) ☐ Ferrous Iron (SM 3500) ☐ Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE: (Trip Blank Lot Number: 1802190)

Aqueous: ☐ VOA ☑ VOA**h** ☐ VOA**na$_2$** ☐ 100PJ ☐ 100PJ**na$_2$** ☐ 125AGB ☐ 125AGB**h** ☐ 125AGB**p** ☐ 125PB ☐ 125PB**znna** (pH__9)

☐ 250AGB ☐ 250CGB ☐ 250CGB**s** (pH__2) ☐ 250PB ☐ 250PB**n** (pH__2) ☐ 500AGB ☐ 500AGJ ☐ 500AGJ**s** (pH__2) ☐ 500PB

☐ 1AGB ☐ 1AGB**na$_2$** ☐ 1AGB**s** (pH__2) ☐ 1AGB**s** (O&G) ☐ 1PB ☐ 1PB**na** (pH__12) ☐ _____ ☐ _____ ☐ _____

Solid: ☐ 4ozCGJ ☐ 8ozCGJ ☐ 16ozCGJ ☐ Sleeve (___) ☐ EnCores® (___) ☐ TerraCores® (3) ☑ 2025 ☐ _____ ☐ _____

Air: ☐ Tedlar™ ☐ Canister ☐ Sorbent Tube ☐ PUF ☐ _____ **Other Matrix** (_____): ☐ _____ ☐ _____ ☐ _____

Container: **A** = Amber, **B** = Bottle, **C** = Clear, **E** = Envelope, **G** = Glass, **J** = Jar, **P** = Plastic, and **Z** = Ziploc/Resealable Bag

Preservative: **b** = buffered, **f** = filtered, **h** = HCl, **n** = HNO_3, **na** = NaOH, **na$_2$** = $Na_2S_2O_3$, **p** = H_3PO_4, Labeled/Checked by: 676

s = H_2SO_4, **u** = ultra-pure, **x** = Na_2SO_3+$NaHSO_4.H_2O$, **znna** = Zn $(CH_3CO_2)_2$ + NaOH Reviewed by: 687

*(-7) No collection date on label, NS 3/19/18

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WORK ORDER NUMBER: 18-03-1646

The difference is service

AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: ERM-WEST

Client Project Name: Infineon / 0444392.002

Attention: Maggie Tymkow
1920 Main Street
Suite 300
Irvine, CA 92614-7279

Approved for release on 03/21/2018 by:
Virendra Patel
Project Manager

ResultLink

Email your PM

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Client Project Name: Infineon / 0444392.002
Work Order Number: 18-03-1646

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Work Order Narrative

Work Order: 18-03-1646 Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 03/20/18. They were assigned to Work Order 18-03-1646.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

DoD Projects:

The test results contained in this report are accredited under the laboratory's ISO/IEC 17025:2005 and DoD-ELAP accreditation issued by the ANSI-ASQ National Accreditation Board. Refer to certificate and scope of accreditation ADE-1864.

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Sample Summary

Client:	ERM-WEST 1920 Main Street, Suite 300 Irvine, CA 92614-7279	Work Order:	18-03-1646
		Project Name:	Infineon / 0444392.002
		PO Number:	
		Date/Time Received:	03/20/18 17:10
		Number of Containers:	26
Attn:	Maggie Tymkow		

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
B1-5-10	18-03-1646-1	03/20/18 08:35	4	Solid
B1-5-22	18-03-1646-2	03/20/18 08:47	4	Solid
B1-5-33	18-03-1646-3	03/20/18 08:56	4	Solid
B1-5-53	18-03-1646-4	03/20/18 09:11	4	Solid
B1-5-80	18-03-1646-5	03/20/18 10:04	4	Solid
B1-15-80	18-03-1646-6	03/20/18 10:04	4	Solid
Trip Blk	18-03-1646-7	03/20/18 00:00	2	Aqueous

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Detections Summary

Client:	ERM-WEST	Work Order:	18-03-1646
	1920 Main Street, Suite 300	Project Name:	Infineon / 0444392.002
	Irvine, CA 92614-7279	Received:	03/20/18
Attn:	Maggie Tymkow		Page 1 of 1

Client SampleID / Analyte	Result	Qualifiers	RL	Units	Method	Extraction
B1-5-10 (18-03-1646-1)						
Tetrachloroethene	30		0.92	ug/kg	EPA 8260B	EPA 5035
B1-5-22 (18-03-1646-2)						
Tetrachloroethene	40		0.93	ug/kg	EPA 8260B	EPA 5035
B1-5-33 (18-03-1646-3)						
1,2-Dichlorobenzene	5.7		1.0	ug/kg	EPA 8260B	EPA 5035
Tetrachloroethene	47		1.0	ug/kg	EPA 8260B	EPA 5035
B1-5-53 (18-03-1646-4)						
Tetrachloroethene	4.5		1.1	ug/kg	EPA 8260B	EPA 5035
B1-5-80 (18-03-1646-5)						
Tetrachloroethene	2.4		1.1	ug/kg	EPA 8260B	EPA 5035
B1-15-80 (18-03-1646-6)						
Tetrachloroethene	2.4		1.0	ug/kg	EPA 8260B	EPA 5035

Subcontracted analyses, if any, are not included in this summary.

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* MDL is shown

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/20/18
Work Order: 18-03-1646
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

Project: Infineon / 0444392.002

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Trip Blk	**18-03-1646-7-A**	**03/20/18 00:00**	**Aqueous**	**GC/MS RR**	**03/20/18**	**03/20/18 20:08**	**180320L027**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	20	1.00	
Benzene	ND	0.50	1.00	
Bromobenzene	ND	1.0	1.00	
Bromochloromethane	ND	1.0	1.00	
Bromodichloromethane	ND	1.0	1.00	
Bromoform	ND	1.0	1.00	
Bromomethane	ND	10	1.00	
2-Butanone	ND	10	1.00	
n-Butylbenzene	ND	1.0	1.00	
sec-Butylbenzene	ND	1.0	1.00	
tert-Butylbenzene	ND	1.0	1.00	
Carbon Disulfide	ND	10	1.00	
Carbon Tetrachloride	ND	0.50	1.00	
Chlorobenzene	ND	1.0	1.00	
Chloroethane	ND	5.0	1.00	
Chloroform	ND	1.0	1.00	
Chloromethane	ND	10	1.00	
2-Chlorotoluene	ND	1.0	1.00	
4-Chlorotoluene	ND	1.0	1.00	
Dibromochloromethane	ND	1.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.0	1.00	
1,2-Dibromoethane	ND	1.0	1.00	
Dibromomethane	ND	1.0	1.00	
1,2-Dichlorobenzene	ND	1.0	1.00	
1,3-Dichlorobenzene	ND	1.0	1.00	
1,4-Dichlorobenzene	ND	1.0	1.00	
Dichlorodifluoromethane	ND	1.0	1.00	
1,1-Dichloroethane	ND	1.0	1.00	
1,2-Dichloroethane	ND	0.50	1.00	
1,1-Dichloroethene	ND	1.0	1.00	
c-1,2-Dichloroethene	ND	1.0	1.00	
t-1,2-Dichloroethene	ND	1.0	1.00	
1,2-Dichloropropane	ND	1.0	1.00	
1,3-Dichloropropane	ND	1.0	1.00	
2,2-Dichloropropane	ND	1.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392.002

Date Received: 03/20/18
Work Order: 18-03-1646
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	1.0	1.00	
c-1,3-Dichloropropene	ND	0.50	1.00	
t-1,3-Dichloropropene	ND	0.50	1.00	
Ethylbenzene	ND	1.0	1.00	
2-Hexanone	ND	10	1.00	
Isopropylbenzene	ND	1.0	1.00	
p-Isopropyltoluene	ND	1.0	1.00	
Methylene Chloride	ND	10	1.00	
4-Methyl-2-Pentanone	ND	10	1.00	
Naphthalene	ND	10	1.00	
n-Propylbenzene	ND	1.0	1.00	
Styrene	ND	1.0	1.00	
1,1,1,2-Tetrachloroethane	ND	1.0	1.00	
1,1,2,2-Tetrachloroethane	ND	1.0	1.00	
Tetrachloroethene	ND	1.0	1.00	
Toluene	ND	1.0	1.00	
1,2,3-Trichlorobenzene	ND	1.0	1.00	
1,2,4-Trichlorobenzene	ND	1.0	1.00	
1,1,1-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.00	
1,1,2-Trichloroethane	ND	1.0	1.00	
Trichloroethene	ND	1.0	1.00	
Trichlorofluoromethane	ND	10	1.00	
1,2,3-Trichloropropane	ND	5.0	1.00	
1,2,4-Trimethylbenzene	ND	1.0	1.00	
1,3,5-Trimethylbenzene	ND	1.0	1.00	
Vinyl Acetate	ND	10	1.00	
Vinyl Chloride	ND	0.50	1.00	
p/m-Xylene	ND	1.0	1.00	
o-Xylene	ND	1.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	1.0	1.00	
Tert-Butyl Alcohol (TBA)	ND	10	1.00	
Diisopropyl Ether (DIPE)	ND	2.0	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	2.0	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	2.0	1.00	
Ethanol	ND	100	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	91	77-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/20/18
1920 Main Street, Suite 300	Work Order:	18-03-1646
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/L
Project: Infineon / 0444392.002		Page 3 of 6

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	110	80-128	
1,2-Dichloroethane-d4	112	80-129	
Toluene-d8	100	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/20/18
Work Order: 18-03-1646
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

Project: Infineon / 0444392.002

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-14-001-25458**	**N/A**	**Aqueous**	**GC/MS RR**	**03/20/18**	**03/20/18 19:37**	**180320L027**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	20	1.00	
Benzene	ND	0.50	1.00	
Bromobenzene	ND	1.0	1.00	
Bromochloromethane	ND	1.0	1.00	
Bromodichloromethane	ND	1.0	1.00	
Bromoform	ND	1.0	1.00	
Bromomethane	ND	10	1.00	
2-Butanone	ND	10	1.00	
n-Butylbenzene	ND	1.0	1.00	
sec-Butylbenzene	ND	1.0	1.00	
tert-Butylbenzene	ND	1.0	1.00	
Carbon Disulfide	ND	10	1.00	
Carbon Tetrachloride	ND	0.50	1.00	
Chlorobenzene	ND	1.0	1.00	
Chloroethane	ND	5.0	1.00	
Chloroform	ND	1.0	1.00	
Chloromethane	ND	10	1.00	
2-Chlorotoluene	ND	1.0	1.00	
4-Chlorotoluene	ND	1.0	1.00	
Dibromochloromethane	ND	1.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.0	1.00	
1,2-Dibromoethane	ND	1.0	1.00	
Dibromomethane	ND	1.0	1.00	
1,2-Dichlorobenzene	ND	1.0	1.00	
1,3-Dichlorobenzene	ND	1.0	1.00	
1,4-Dichlorobenzene	ND	1.0	1.00	
Dichlorodifluoromethane	ND	1.0	1.00	
1,1-Dichloroethane	ND	1.0	1.00	
1,2-Dichloroethane	ND	0.50	1.00	
1,1-Dichloroethene	ND	1.0	1.00	
c-1,2-Dichloroethene	ND	1.0	1.00	
t-1,2-Dichloroethene	ND	1.0	1.00	
1,2-Dichloropropane	ND	1.0	1.00	
1,3-Dichloropropane	ND	1.0	1.00	
2,2-Dichloropropane	ND	1.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/20/18
1920 Main Street, Suite 300	Work Order:	18-03-1646
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/L
Project: Infineon / 0444392.002		Page 5 of 6

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	1.0	1.00	
c-1,3-Dichloropropene	ND	0.50	1.00	
t-1,3-Dichloropropene	ND	0.50	1.00	
Ethylbenzene	ND	1.0	1.00	
2-Hexanone	ND	10	1.00	
Isopropylbenzene	ND	1.0	1.00	
p-Isopropyltoluene	ND	1.0	1.00	
Methylene Chloride	ND	10	1.00	
4-Methyl-2-Pentanone	ND	10	1.00	
Naphthalene	ND	10	1.00	
n-Propylbenzene	ND	1.0	1.00	
Styrene	ND	1.0	1.00	
1,1,1,2-Tetrachloroethane	ND	1.0	1.00	
1,1,2,2-Tetrachloroethane	ND	1.0	1.00	
Tetrachloroethene	ND	1.0	1.00	
Toluene	ND	1.0	1.00	
1,2,3-Trichlorobenzene	ND	1.0	1.00	
1,2,4-Trichlorobenzene	ND	1.0	1.00	
1,1,1-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.00	
1,1,2-Trichloroethane	ND	1.0	1.00	
Trichloroethene	ND	1.0	1.00	
Trichlorofluoromethane	ND	10	1.00	
1,2,3-Trichloropropane	ND	5.0	1.00	
1,2,4-Trimethylbenzene	ND	1.0	1.00	
1,3,5-Trimethylbenzene	ND	1.0	1.00	
Vinyl Acetate	ND	10	1.00	
Vinyl Chloride	ND	0.50	1.00	
p/m-Xylene	ND	1.0	1.00	
o-Xylene	ND	1.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	1.0	1.00	
Tert-Butyl Alcohol (TBA)	ND	10	1.00	
Diisopropyl Ether (DIPE)	ND	2.0	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	2.0	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	2.0	1.00	
Ethanol	ND	100	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	93	77-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/20/18
1920 Main Street, Suite 300	Work Order:	18-03-1646
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/L
Project: Infineon / 0444392.002		Page 6 of 6

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	111	80-128	
1,2-Dichloroethane-d4	112	80-129	
Toluene-d8	100	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392.002

Date Received: 03/20/18
Work Order: 18-03-1646
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B1-5-10	**18-03-1646-1-C**	**03/20/18 08:35**	**Solid**	**GC/MS GGG**	**03/20/18**	**03/20/18 20:02**	**180320L028**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	46	1.00	
Benzene	ND	0.92	1.00	
Bromobenzene	ND	0.92	1.00	
Bromochloromethane	ND	1.8	1.00	
Bromodichloromethane	ND	0.92	1.00	
Bromoform	ND	4.6	1.00	
Bromomethane	ND	18	1.00	
2-Butanone	ND	18	1.00	
n-Butylbenzene	ND	0.92	1.00	
sec-Butylbenzene	ND	0.92	1.00	
tert-Butylbenzene	ND	0.92	1.00	
Carbon Disulfide	ND	9.2	1.00	
Carbon Tetrachloride	ND	0.92	1.00	
Chlorobenzene	ND	0.92	1.00	
Chloroethane	ND	1.8	1.00	
Chloroform	ND	0.92	1.00	
Chloromethane	ND	18	1.00	
2-Chlorotoluene	ND	0.92	1.00	
4-Chlorotoluene	ND	0.92	1.00	
Dibromochloromethane	ND	1.8	1.00	
1,2-Dibromo-3-Chloropropane	ND	4.6	1.00	
1,2-Dibromoethane	ND	0.92	1.00	
Dibromomethane	ND	0.92	1.00	
1,2-Dichlorobenzene	ND	0.92	1.00	
1,3-Dichlorobenzene	ND	0.92	1.00	
1,4-Dichlorobenzene	ND	0.92	1.00	
Dichlorodifluoromethane	ND	1.8	1.00	
1,1-Dichloroethane	ND	0.92	1.00	
1,2-Dichloroethane	ND	0.92	1.00	
1,1-Dichloroethene	ND	0.92	1.00	
c-1,2-Dichloroethene	ND	0.92	1.00	
t-1,2-Dichloroethene	ND	0.92	1.00	
1,2-Dichloropropane	ND	0.92	1.00	
1,3-Dichloropropane	ND	0.92	1.00	
2,2-Dichloropropane	ND	4.6	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/20/18
1920 Main Street, Suite 300	Work Order:	18-03-1646
Irvine, CA 92614-7279	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: Infineon / 0444392.002		Page 2 of 21

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	1.8	1.00	
c-1,3-Dichloropropene	ND	0.92	1.00	
t-1,3-Dichloropropene	ND	1.8	1.00	
Ethylbenzene	ND	0.92	1.00	
2-Hexanone	ND	18	1.00	
Isopropylbenzene	ND	0.92	1.00	
p-Isopropyltoluene	ND	0.92	1.00	
Methylene Chloride	ND	9.2	1.00	
4-Methyl-2-Pentanone	ND	18	1.00	
Naphthalene	ND	9.2	1.00	
n-Propylbenzene	ND	1.8	1.00	
Styrene	ND	0.92	1.00	
1,1,1,2-Tetrachloroethane	ND	0.92	1.00	
1,1,2,2-Tetrachloroethane	ND	1.8	1.00	
Tetrachloroethene	30	0.92	1.00	
Toluene	ND	0.92	1.00	
1,2,3-Trichlorobenzene	ND	1.8	1.00	
1,2,4-Trichlorobenzene	ND	1.8	1.00	
1,1,1-Trichloroethane	ND	0.92	1.00	
1,1,2-Trichloroethane	ND	0.92	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	9.2	1.00	
Trichloroethene	ND	1.8	1.00	
Trichlorofluoromethane	ND	9.2	1.00	
1,2,3-Trichloropropane	ND	1.8	1.00	
1,2,4-Trimethylbenzene	ND	1.8	1.00	
1,3,5-Trimethylbenzene	ND	1.8	1.00	
Vinyl Acetate	ND	9.2	1.00	
Vinyl Chloride	ND	0.92	1.00	
p/m-Xylene	ND	1.8	1.00	
o-Xylene	ND	0.92	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	1.8	1.00	
Tert-Butyl Alcohol (TBA)	ND	18	1.00	
Diisopropyl Ether (DIPE)	ND	0.92	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.92	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.92	1.00	
Ethanol	ND	460	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	100	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/20/18
1920 Main Street, Suite 300	Work Order:	18-03-1646
Irvine, CA 92614-7279	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: Infineon / 0444392.002		Page 3 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	102	79-133	
1,2-Dichloroethane-d4	107	71-155	
Toluene-d8	100	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/20/18
Work Order: 18-03-1646
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Project: Infineon / 0444392.002

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B1-5-22	**18-03-1646-2-C**	**03/20/18 08:47**	**Solid**	**GC/MS GGG**	**03/20/18**	**03/20/18 20:31**	**180320L028**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	46	1.00	
Benzene	ND	0.93	1.00	
Bromobenzene	ND	0.93	1.00	
Bromochloromethane	ND	1.9	1.00	
Bromodichloromethane	ND	0.93	1.00	
Bromoform	ND	4.6	1.00	
Bromomethane	ND	19	1.00	
2-Butanone	ND	19	1.00	
n-Butylbenzene	ND	0.93	1.00	
sec-Butylbenzene	ND	0.93	1.00	
tert-Butylbenzene	ND	0.93	1.00	
Carbon Disulfide	ND	9.3	1.00	
Carbon Tetrachloride	ND	0.93	1.00	
Chlorobenzene	ND	0.93	1.00	
Chloroethane	ND	1.9	1.00	
Chloroform	ND	0.93	1.00	
Chloromethane	ND	19	1.00	
2-Chlorotoluene	ND	0.93	1.00	
4-Chlorotoluene	ND	0.93	1.00	
Dibromochloromethane	ND	1.9	1.00	
1,2-Dibromo-3-Chloropropane	ND	4.6	1.00	
1,2-Dibromoethane	ND	0.93	1.00	
Dibromomethane	ND	0.93	1.00	
1,2-Dichlorobenzene	ND	0.93	1.00	
1,3-Dichlorobenzene	ND	0.93	1.00	
1,4-Dichlorobenzene	ND	0.93	1.00	
Dichlorodifluoromethane	ND	1.9	1.00	
1,1-Dichloroethane	ND	0.93	1.00	
1,2-Dichloroethane	ND	0.93	1.00	
1,1-Dichloroethene	ND	0.93	1.00	
c-1,2-Dichloroethene	ND	0.93	1.00	
t-1,2-Dichloroethene	ND	0.93	1.00	
1,2-Dichloropropane	ND	0.93	1.00	
1,3-Dichloropropane	ND	0.93	1.00	
2,2-Dichloropropane	ND	4.6	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/20/18
1920 Main Street, Suite 300	Work Order:	18-03-1646
Irvine, CA 92614-7279	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: Infineon / 0444392.002		Page 5 of 21

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	1.9	1.00	
c-1,3-Dichloropropene	ND	0.93	1.00	
t-1,3-Dichloropropene	ND	1.9	1.00	
Ethylbenzene	ND	0.93	1.00	
2-Hexanone	ND	19	1.00	
Isopropylbenzene	ND	0.93	1.00	
p-Isopropyltoluene	ND	0.93	1.00	
Methylene Chloride	ND	9.3	1.00	
4-Methyl-2-Pentanone	ND	19	1.00	
Naphthalene	ND	9.3	1.00	
n-Propylbenzene	ND	1.9	1.00	
Styrene	ND	0.93	1.00	
1,1,1,2-Tetrachloroethane	ND	0.93	1.00	
1,1,2,2-Tetrachloroethane	ND	1.9	1.00	
Tetrachloroethene	40	0.93	1.00	
Toluene	ND	0.93	1.00	
1,2,3-Trichlorobenzene	ND	1.9	1.00	
1,2,4-Trichlorobenzene	ND	1.9	1.00	
1,1,1-Trichloroethane	ND	0.93	1.00	
1,1,2-Trichloroethane	ND	0.93	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	9.3	1.00	
Trichloroethene	ND	1.9	1.00	
Trichlorofluoromethane	ND	9.3	1.00	
1,2,3-Trichloropropane	ND	1.9	1.00	
1,2,4-Trimethylbenzene	ND	1.9	1.00	
1,3,5-Trimethylbenzene	ND	1.9	1.00	
Vinyl Acetate	ND	9.3	1.00	
Vinyl Chloride	ND	0.93	1.00	
p/m-Xylene	ND	1.9	1.00	
o-Xylene	ND	0.93	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	1.9	1.00	
Tert-Butyl Alcohol (TBA)	ND	19	1.00	
Diisopropyl Ether (DIPE)	ND	0.93	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.93	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.93	1.00	
Ethanol	ND	460	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	99	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/20/18
1920 Main Street, Suite 300	Work Order:	18-03-1646
Irvine, CA 92614-7279	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: Infineon / 0444392.002		Page 6 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	101	79-133	
1,2-Dichloroethane-d4	108	71-155	
Toluene-d8	100	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/20/18
Work Order: 18-03-1646
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Project: Infineon / 0444392.002

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B1-5-33	**18-03-1646-3-C**	**03/20/18 08:56**	**Solid**	**GC/MS GGG**	**03/20/18**	**03/20/18 20:59**	**180320L028**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	52	1.00	
Benzene	ND	1.0	1.00	
Bromobenzene	ND	1.0	1.00	
Bromochloromethane	ND	2.1	1.00	
Bromodichloromethane	ND	1.0	1.00	
Bromoform	ND	5.2	1.00	
Bromomethane	ND	21	1.00	
2-Butanone	ND	21	1.00	
n-Butylbenzene	ND	1.0	1.00	
sec-Butylbenzene	ND	1.0	1.00	
tert-Butylbenzene	ND	1.0	1.00	
Carbon Disulfide	ND	10	1.00	
Carbon Tetrachloride	ND	1.0	1.00	
Chlorobenzene	ND	1.0	1.00	
Chloroethane	ND	2.1	1.00	
Chloroform	ND	1.0	1.00	
Chloromethane	ND	21	1.00	
2-Chlorotoluene	ND	1.0	1.00	
4-Chlorotoluene	ND	1.0	1.00	
Dibromochloromethane	ND	2.1	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.2	1.00	
1,2-Dibromoethane	ND	1.0	1.00	
Dibromomethane	ND	1.0	1.00	
1,2-Dichlorobenzene	5.7	1.0	1.00	
1,3-Dichlorobenzene	ND	1.0	1.00	
1,4-Dichlorobenzene	ND	1.0	1.00	
Dichlorodifluoromethane	ND	2.1	1.00	
1,1-Dichloroethane	ND	1.0	1.00	
1,2-Dichloroethane	ND	1.0	1.00	
1,1-Dichloroethene	ND	1.0	1.00	
c-1,2-Dichloroethene	ND	1.0	1.00	
t-1,2-Dichloroethene	ND	1.0	1.00	
1,2-Dichloropropane	ND	1.0	1.00	
1,3-Dichloropropane	ND	1.0	1.00	
2,2-Dichloropropane	ND	5.2	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/20/18
1920 Main Street, Suite 300	Work Order:	18-03-1646
Irvine, CA 92614-7279	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: Infineon / 0444392.002		Page 8 of 21

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.1	1.00	
c-1,3-Dichloropropene	ND	1.0	1.00	
t-1,3-Dichloropropene	ND	2.1	1.00	
Ethylbenzene	ND	1.0	1.00	
2-Hexanone	ND	21	1.00	
Isopropylbenzene	ND	1.0	1.00	
p-Isopropyltoluene	ND	1.0	1.00	
Methylene Chloride	ND	10	1.00	
4-Methyl-2-Pentanone	ND	21	1.00	
Naphthalene	ND	10	1.00	
n-Propylbenzene	ND	2.1	1.00	
Styrene	ND	1.0	1.00	
1,1,1,2-Tetrachloroethane	ND	1.0	1.00	
1,1,2,2-Tetrachloroethane	ND	2.1	1.00	
Tetrachloroethene	47	1.0	1.00	
Toluene	ND	1.0	1.00	
1,2,3-Trichlorobenzene	ND	2.1	1.00	
1,2,4-Trichlorobenzene	ND	2.1	1.00	
1,1,1-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.00	
Trichloroethene	ND	2.1	1.00	
Trichlorofluoromethane	ND	10	1.00	
1,2,3-Trichloropropane	ND	2.1	1.00	
1,2,4-Trimethylbenzene	ND	2.1	1.00	
1,3,5-Trimethylbenzene	ND	2.1	1.00	
Vinyl Acetate	ND	10	1.00	
Vinyl Chloride	ND	1.0	1.00	
p/m-Xylene	ND	2.1	1.00	
o-Xylene	ND	1.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.1	1.00	
Tert-Butyl Alcohol (TBA)	ND	21	1.00	
Diisopropyl Ether (DIPE)	ND	1.0	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.0	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.0	1.00	
Ethanol	ND	520	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	98	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/20/18
1920 Main Street, Suite 300	Work Order:	18-03-1646
Irvine, CA 92614-7279	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: Infineon / 0444392.002		Page 9 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	102	79-133	
1,2-Dichloroethane-d4	108	71-155	
Toluene-d8	99	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/20/18
Work Order: 18-03-1646
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Project: Infineon / 0444392.002

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B1-5-53	**18-03-1646-4-C**	**03/20/18 09:11**	**Solid**	**GC/MS GGG**	**03/20/18**	**03/20/18 21:27**	**180320L028**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	54	1.00	
Benzene	ND	1.1	1.00	
Bromobenzene	ND	1.1	1.00	
Bromochloromethane	ND	2.2	1.00	
Bromodichloromethane	ND	1.1	1.00	
Bromoform	ND	5.4	1.00	
Bromomethane	ND	22	1.00	
2-Butanone	ND	22	1.00	
n-Butylbenzene	ND	1.1	1.00	
sec-Butylbenzene	ND	1.1	1.00	
tert-Butylbenzene	ND	1.1	1.00	
Carbon Disulfide	ND	11	1.00	
Carbon Tetrachloride	ND	1.1	1.00	
Chlorobenzene	ND	1.1	1.00	
Chloroethane	ND	2.2	1.00	
Chloroform	ND	1.1	1.00	
Chloromethane	ND	22	1.00	
2-Chlorotoluene	ND	1.1	1.00	
4-Chlorotoluene	ND	1.1	1.00	
Dibromochloromethane	ND	2.2	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.4	1.00	
1,2-Dibromoethane	ND	1.1	1.00	
Dibromomethane	ND	1.1	1.00	
1,2-Dichlorobenzene	ND	1.1	1.00	
1,3-Dichlorobenzene	ND	1.1	1.00	
1,4-Dichlorobenzene	ND	1.1	1.00	
Dichlorodifluoromethane	ND	2.2	1.00	
1,1-Dichloroethane	ND	1.1	1.00	
1,2-Dichloroethane	ND	1.1	1.00	
1,1-Dichloroethene	ND	1.1	1.00	
c-1,2-Dichloroethene	ND	1.1	1.00	
t-1,2-Dichloroethene	ND	1.1	1.00	
1,2-Dichloropropane	ND	1.1	1.00	
1,3-Dichloropropane	ND	1.1	1.00	
2,2-Dichloropropane	ND	5.4	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/20/18
1920 Main Street, Suite 300		Work Order:	18-03-1646
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392.002			Page 11 of 21

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.2	1.00	
c-1,3-Dichloropropene	ND	1.1	1.00	
t-1,3-Dichloropropene	ND	2.2	1.00	
Ethylbenzene	ND	1.1	1.00	
2-Hexanone	ND	22	1.00	
Isopropylbenzene	ND	1.1	1.00	
p-Isopropyltoluene	ND	1.1	1.00	
Methylene Chloride	ND	11	1.00	
4-Methyl-2-Pentanone	ND	22	1.00	
Naphthalene	ND	11	1.00	
n-Propylbenzene	ND	2.2	1.00	
Styrene	ND	1.1	1.00	
1,1,1,2-Tetrachloroethane	ND	1.1	1.00	
1,1,2,2-Tetrachloroethane	ND	2.2	1.00	
Tetrachloroethene	4.5	1.1	1.00	
Toluene	ND	1.1	1.00	
1,2,3-Trichlorobenzene	ND	2.2	1.00	
1,2,4-Trichlorobenzene	ND	2.2	1.00	
1,1,1-Trichloroethane	ND	1.1	1.00	
1,1,2-Trichloroethane	ND	1.1	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	11	1.00	
Trichloroethene	ND	2.2	1.00	
Trichlorofluoromethane	ND	11	1.00	
1,2,3-Trichloropropane	ND	2.2	1.00	
1,2,4-Trimethylbenzene	ND	2.2	1.00	
1,3,5-Trimethylbenzene	ND	2.2	1.00	
Vinyl Acetate	ND	11	1.00	
Vinyl Chloride	ND	1.1	1.00	
p/m-Xylene	ND	2.2	1.00	
o-Xylene	ND	1.1	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.2	1.00	
Tert-Butyl Alcohol (TBA)	ND	22	1.00	
Diisopropyl Ether (DIPE)	ND	1.1	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.1	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.1	1.00	
Ethanol	ND	540	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	98	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/20/18
1920 Main Street, Suite 300	Work Order:	18-03-1646
Irvine, CA 92614-7279	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: Infineon / 0444392.002		Page 12 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	104	79-133	
1,2-Dichloroethane-d4	111	71-155	
Toluene-d8	100	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/20/18
Work Order: 18-03-1646
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Project: Infineon / 0444392.002

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B1-5-80	**18-03-1646-5-C**	**03/20/18 10:04**	**Solid**	**GC/MS GGG**	**03/20/18**	**03/20/18 21:56**	**180320L028**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	57	1.00	
Benzene	ND	1.1	1.00	
Bromobenzene	ND	1.1	1.00	
Bromochloromethane	ND	2.3	1.00	
Bromodichloromethane	ND	1.1	1.00	
Bromoform	ND	5.7	1.00	
Bromomethane	ND	23	1.00	
2-Butanone	ND	23	1.00	
n-Butylbenzene	ND	1.1	1.00	
sec-Butylbenzene	ND	1.1	1.00	
tert-Butylbenzene	ND	1.1	1.00	
Carbon Disulfide	ND	11	1.00	
Carbon Tetrachloride	ND	1.1	1.00	
Chlorobenzene	ND	1.1	1.00	
Chloroethane	ND	2.3	1.00	
Chloroform	ND	1.1	1.00	
Chloromethane	ND	23	1.00	
2-Chlorotoluene	ND	1.1	1.00	
4-Chlorotoluene	ND	1.1	1.00	
Dibromochloromethane	ND	2.3	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.7	1.00	
1,2-Dibromoethane	ND	1.1	1.00	
Dibromomethane	ND	1.1	1.00	
1,2-Dichlorobenzene	ND	1.1	1.00	
1,3-Dichlorobenzene	ND	1.1	1.00	
1,4-Dichlorobenzene	ND	1.1	1.00	
Dichlorodifluoromethane	ND	2.3	1.00	
1,1-Dichloroethane	ND	1.1	1.00	
1,2-Dichloroethane	ND	1.1	1.00	
1,1-Dichloroethene	ND	1.1	1.00	
c-1,2-Dichloroethene	ND	1.1	1.00	
t-1,2-Dichloroethene	ND	1.1	1.00	
1,2-Dichloropropane	ND	1.1	1.00	
1,3-Dichloropropane	ND	1.1	1.00	
2,2-Dichloropropane	ND	5.7	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392.002

Date Received: 03/20/18
Work Order: 18-03-1646
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.3	1.00	
c-1,3-Dichloropropene	ND	1.1	1.00	
t-1,3-Dichloropropene	ND	2.3	1.00	
Ethylbenzene	ND	1.1	1.00	
2-Hexanone	ND	23	1.00	
Isopropylbenzene	ND	1.1	1.00	
p-Isopropyltoluene	ND	1.1	1.00	
Methylene Chloride	ND	11	1.00	
4-Methyl-2-Pentanone	ND	23	1.00	
Naphthalene	ND	11	1.00	
n-Propylbenzene	ND	2.3	1.00	
Styrene	ND	1.1	1.00	
1,1,1,2-Tetrachloroethane	ND	1.1	1.00	
1,1,2,2-Tetrachloroethane	ND	2.3	1.00	
Tetrachloroethene	2.4	1.1	1.00	
Toluene	ND	1.1	1.00	
1,2,3-Trichlorobenzene	ND	2.3	1.00	
1,2,4-Trichlorobenzene	ND	2.3	1.00	
1,1,1-Trichloroethane	ND	1.1	1.00	
1,1,2-Trichloroethane	ND	1.1	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	11	1.00	
Trichloroethene	ND	2.3	1.00	
Trichlorofluoromethane	ND	11	1.00	
1,2,3-Trichloropropane	ND	2.3	1.00	
1,2,4-Trimethylbenzene	ND	2.3	1.00	
1,3,5-Trimethylbenzene	ND	2.3	1.00	
Vinyl Acetate	ND	11	1.00	
Vinyl Chloride	ND	1.1	1.00	
p/m-Xylene	ND	2.3	1.00	
o-Xylene	ND	1.1	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.3	1.00	
Tert-Butyl Alcohol (TBA)	ND	23	1.00	
Diisopropyl Ether (DIPE)	ND	1.1	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.1	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.1	1.00	
Ethanol	ND	570	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	99	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/20/18
1920 Main Street, Suite 300	Work Order:	18-03-1646
Irvine, CA 92614-7279	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: Infineon / 0444392.002		Page 15 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	104	79-133	
1,2-Dichloroethane-d4	108	71-155	
Toluene-d8	99	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/20/18
Work Order: 18-03-1646
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Project: Infineon / 0444392.002

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B1-15-80	**18-03-1646-6-C**	**03/20/18 10:04**	**Solid**	**GC/MS GGG**	**03/20/18**	**03/20/18 22:41**	**180320L028**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	51	1.00	
Benzene	ND	1.0	1.00	
Bromobenzene	ND	1.0	1.00	
Bromochloromethane	ND	2.1	1.00	
Bromodichloromethane	ND	1.0	1.00	
Bromoform	ND	5.1	1.00	
Bromomethane	ND	21	1.00	
2-Butanone	ND	21	1.00	
n-Butylbenzene	ND	1.0	1.00	
sec-Butylbenzene	ND	1.0	1.00	
tert-Butylbenzene	ND	1.0	1.00	
Carbon Disulfide	ND	10	1.00	
Carbon Tetrachloride	ND	1.0	1.00	
Chlorobenzene	ND	1.0	1.00	
Chloroethane	ND	2.1	1.00	
Chloroform	ND	1.0	1.00	
Chloromethane	ND	21	1.00	
2-Chlorotoluene	ND	1.0	1.00	
4-Chlorotoluene	ND	1.0	1.00	
Dibromochloromethane	ND	2.1	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.1	1.00	
1,2-Dibromoethane	ND	1.0	1.00	
Dibromomethane	ND	1.0	1.00	
1,2-Dichlorobenzene	ND	1.0	1.00	
1,3-Dichlorobenzene	ND	1.0	1.00	
1,4-Dichlorobenzene	ND	1.0	1.00	
Dichlorodifluoromethane	ND	2.1	1.00	
1,1-Dichloroethane	ND	1.0	1.00	
1,2-Dichloroethane	ND	1.0	1.00	
1,1-Dichloroethene	ND	1.0	1.00	
c-1,2-Dichloroethene	ND	1.0	1.00	
t-1,2-Dichloroethene	ND	1.0	1.00	
1,2-Dichloropropane	ND	1.0	1.00	
1,3-Dichloropropane	ND	1.0	1.00	
2,2-Dichloropropane	ND	5.1	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/20/18
1920 Main Street, Suite 300		Work Order:	18-03-1646
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392.002			Page 17 of 21

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.1	1.00	
c-1,3-Dichloropropene	ND	1.0	1.00	
t-1,3-Dichloropropene	ND	2.1	1.00	
Ethylbenzene	ND	1.0	1.00	
2-Hexanone	ND	21	1.00	
Isopropylbenzene	ND	1.0	1.00	
p-Isopropyltoluene	ND	1.0	1.00	
Methylene Chloride	ND	10	1.00	
4-Methyl-2-Pentanone	ND	21	1.00	
Naphthalene	ND	10	1.00	
n-Propylbenzene	ND	2.1	1.00	
Styrene	ND	1.0	1.00	
1,1,1,2-Tetrachloroethane	ND	1.0	1.00	
1,1,2,2-Tetrachloroethane	ND	2.1	1.00	
Tetrachloroethene	2.4	1.0	1.00	
Toluene	ND	1.0	1.00	
1,2,3-Trichlorobenzene	ND	2.1	1.00	
1,2,4-Trichlorobenzene	ND	2.1	1.00	
1,1,1-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.00	
Trichloroethene	ND	2.1	1.00	
Trichlorofluoromethane	ND	10	1.00	
1,2,3-Trichloropropane	ND	2.1	1.00	
1,2,4-Trimethylbenzene	ND	2.1	1.00	
1,3,5-Trimethylbenzene	ND	2.1	1.00	
Vinyl Acetate	ND	10	1.00	
Vinyl Chloride	ND	1.0	1.00	
p/m-Xylene	ND	2.1	1.00	
o-Xylene	ND	1.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.1	1.00	
Tert-Butyl Alcohol (TBA)	ND	21	1.00	
Diisopropyl Ether (DIPE)	ND	1.0	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.0	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.0	1.00	
Ethanol	ND	510	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	100	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/20/18
1920 Main Street, Suite 300	Work Order:	18-03-1646
Irvine, CA 92614-7279	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: Infineon / 0444392.002		Page 18 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	103	79-133	
1,2-Dichloroethane-d4	109	71-155	
Toluene-d8	100	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/20/18
Work Order: 18-03-1646
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Project: Infineon / 0444392.002

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**095-01-025-29788**	**N/A**	**Solid**	**GC/MS GGG**	**03/20/18**	**03/20/18 19:06**	**180320L028**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	50	1.00	
Benzene	ND	1.0	1.00	
Bromobenzene	ND	1.0	1.00	
Bromochloromethane	ND	2.0	1.00	
Bromodichloromethane	ND	1.0	1.00	
Bromoform	ND	5.0	1.00	
Bromomethane	ND	20	1.00	
2-Butanone	ND	20	1.00	
n-Butylbenzene	ND	1.0	1.00	
sec-Butylbenzene	ND	1.0	1.00	
tert-Butylbenzene	ND	1.0	1.00	
Carbon Disulfide	ND	10	1.00	
Carbon Tetrachloride	ND	1.0	1.00	
Chlorobenzene	ND	1.0	1.00	
Chloroethane	ND	2.0	1.00	
Chloroform	ND	1.0	1.00	
Chloromethane	ND	20	1.00	
2-Chlorotoluene	ND	1.0	1.00	
4-Chlorotoluene	ND	1.0	1.00	
Dibromochloromethane	ND	2.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.0	1.00	
1,2-Dibromoethane	ND	1.0	1.00	
Dibromomethane	ND	1.0	1.00	
1,2-Dichlorobenzene	ND	1.0	1.00	
1,3-Dichlorobenzene	ND	1.0	1.00	
1,4-Dichlorobenzene	ND	1.0	1.00	
Dichlorodifluoromethane	ND	2.0	1.00	
1,1-Dichloroethane	ND	1.0	1.00	
1,2-Dichloroethane	ND	1.0	1.00	
1,1-Dichloroethene	ND	1.0	1.00	
c-1,2-Dichloroethene	ND	1.0	1.00	
t-1,2-Dichloroethene	ND	1.0	1.00	
1,2-Dichloropropane	ND	1.0	1.00	
1,3-Dichloropropane	ND	1.0	1.00	
2,2-Dichloropropane	ND	5.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/20/18
1920 Main Street, Suite 300		Work Order:	18-03-1646
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392.002			Page 20 of 21

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.0	1.00	
c-1,3-Dichloropropene	ND	1.0	1.00	
t-1,3-Dichloropropene	ND	2.0	1.00	
Ethylbenzene	ND	1.0	1.00	
2-Hexanone	ND	20	1.00	
Isopropylbenzene	ND	1.0	1.00	
p-Isopropyltoluene	ND	1.0	1.00	
Methylene Chloride	ND	10	1.00	
4-Methyl-2-Pentanone	ND	20	1.00	
Naphthalene	ND	10	1.00	
n-Propylbenzene	ND	2.0	1.00	
Styrene	ND	1.0	1.00	
1,1,1,2-Tetrachloroethane	ND	1.0	1.00	
1,1,2,2-Tetrachloroethane	ND	2.0	1.00	
Tetrachloroethene	ND	1.0	1.00	
Toluene	ND	1.0	1.00	
1,2,3-Trichlorobenzene	ND	2.0	1.00	
1,2,4-Trichlorobenzene	ND	2.0	1.00	
1,1,1-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.00	
Trichloroethene	ND	2.0	1.00	
Trichlorofluoromethane	ND	10	1.00	
1,2,3-Trichloropropane	ND	2.0	1.00	
1,2,4-Trimethylbenzene	ND	2.0	1.00	
1,3,5-Trimethylbenzene	ND	2.0	1.00	
Vinyl Acetate	ND	10	1.00	
Vinyl Chloride	ND	1.0	1.00	
p/m-Xylene	ND	2.0	1.00	
o-Xylene	ND	1.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.0	1.00	
Tert-Butyl Alcohol (TBA)	ND	20	1.00	
Diisopropyl Ether (DIPE)	ND	1.0	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.0	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.0	1.00	
Ethanol	ND	500	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	99	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/20/18
1920 Main Street, Suite 300	Work Order:	18-03-1646
Irvine, CA 92614-7279	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: Infineon / 0444392.002		Page 21 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	96	79-133	
1,2-Dichloroethane-d4	96	71-155	
Toluene-d8	99	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Quality Control - LCS/LCSD

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392.002

Date Received: 03/20/18
Work Order: 18-03-1646
Preparation: EPA 5030C
Method: EPA 8260B

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-14-001-25458	**LCS**	**Aqueous**	**GC/MS RR**	**03/20/18**	**03/20/18 16:33**	**180320L027**
099-14-001-25458	**LCSD**	**Aqueous**	**GC/MS RR**	**03/20/18**	**03/20/18 17:04**	**180320L027**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Acetone	50.00	68.63	137	50.43	101	53-137	39-151	31	0-21	X
Benzene	50.00	49.24	98	49.99	100	79-121	72-128	2	0-20	
Bromobenzene	50.00	51.19	102	52.71	105	80-120	73-127	3	0-20	
Bromochloromethane	50.00	50.25	100	51.95	104	80-122	73-129	3	0-20	
Bromodichloromethane	50.00	51.68	103	53.54	107	80-124	73-131	4	0-20	
Bromoform	50.00	49.93	100	52.06	104	73-127	64-136	4	0-20	
Bromomethane	50.00	24.30	49	26.73	53	50-150	33-167	9	0-26	ME
2-Butanone	50.00	64.70	129	55.01	110	60-126	49-137	16	0-20	ME
n-Butylbenzene	50.00	53.30	107	53.94	108	72-138	61-149	1	0-20	
sec-Butylbenzene	50.00	53.13	106	53.11	106	77-131	68-140	0	0-20	
tert-Butylbenzene	50.00	52.42	105	52.85	106	80-125	72-132	1	0-20	
Carbon Disulfide	50.00	48.69	97	48.57	97	50-150	33-167	0	0-22	
Carbon Tetrachloride	50.00	52.16	104	51.17	102	65-143	52-156	2	0-20	
Chlorobenzene	50.00	49.87	100	50.94	102	80-120	73-127	2	0-20	
Chloroethane	50.00	49.54	99	48.81	98	62-128	51-139	1	0-20	
Chloroform	50.00	51.32	103	52.61	105	80-120	73-127	2	0-20	
Chloromethane	50.00	42.45	85	41.26	83	43-133	28-148	3	0-20	
2-Chlorotoluene	50.00	52.58	105	53.58	107	80-121	73-128	2	0-20	
4-Chlorotoluene	50.00	51.80	104	52.81	106	80-120	73-127	2	0-20	
Dibromochloromethane	50.00	49.94	100	52.15	104	80-123	73-130	4	0-20	
1,2-Dibromo-3-Chloropropane	50.00	52.21	104	53.00	106	66-126	56-136	2	0-20	
1,2-Dibromoethane	50.00	51.34	103	54.02	108	80-120	73-127	5	0-20	
Dibromomethane	50.00	51.16	102	53.35	107	80-120	73-127	4	0-20	
1,2-Dichlorobenzene	50.00	50.53	101	52.68	105	80-120	73-127	4	0-20	
1,3-Dichlorobenzene	50.00	50.46	101	52.56	105	80-120	73-127	4	0-20	
1,4-Dichlorobenzene	50.00	49.70	99	51.87	104	80-120	73-127	4	0-20	
Dichlorodifluoromethane	50.00	46.72	93	43.60	87	50-150	33-167	7	0-30	
1,1-Dichloroethane	50.00	51.95	104	52.51	105	72-126	63-135	1	0-20	
1,2-Dichloroethane	50.00	49.88	100	52.55	105	76-120	69-127	5	0-20	
1,1-Dichloroethene	50.00	49.72	99	48.94	98	66-132	55-143	2	0-20	
c-1,2-Dichloroethene	50.00	50.31	101	51.58	103	78-120	71-127	2	0-20	
t-1,2-Dichloroethene	50.00	49.43	99	50.15	100	66-132	55-143	1	0-20	
1,2-Dichloropropane	50.00	51.64	103	53.40	107	80-120	73-127	3	0-20	
1,3-Dichloropropane	50.00	49.30	99	52.15	104	80-120	73-127	6	0-20	
2,2-Dichloropropane	50.00	51.66	103	49.49	99	50-150	33-167	4	0-20	
1,1-Dichloropropene	50.00	49.85	100	49.57	99	75-123	67-131	1	0-20	

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS/LCSD

ERM-WEST		Date Received:	03/20/18
1920 Main Street, Suite 300		Work Order:	18-03-1646
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
Project: Infineon / 0444392.002			Page 2 of 4

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
c-1,3-Dichloropropene	50.00	51.80	104	53.87	108	77-131	68-140	4	0-20	
t-1,3-Dichloropropene	50.00	50.57	101	52.95	106	76-136	66-146	5	0-20	
Ethylbenzene	50.00	52.41	105	52.84	106	80-120	73-127	1	0-20	
2-Hexanone	50.00	56.91	114	52.92	106	63-123	53-133	7	0-20	
Isopropylbenzene	50.00	52.65	105	52.98	106	80-128	72-136	1	0-20	
p-Isopropyltoluene	50.00	53.52	107	53.59	107	73-133	63-143	0	0-20	
Methylene Chloride	50.00	51.61	103	52.62	105	61-133	49-145	2	0-27	
4-Methyl-2-Pentanone	50.00	52.04	104	53.61	107	65-125	55-135	3	0-20	
Naphthalene	50.00	53.16	106	55.82	112	69-129	59-139	5	0-20	
n-Propylbenzene	50.00	53.01	106	53.50	107	80-128	72-136	1	0-20	
Styrene	50.00	53.17	106	55.04	110	80-126	72-134	3	0-20	
1,1,1,2-Tetrachloroethane	50.00	50.08	100	51.97	104	80-129	72-137	4	0-20	
1,1,2,2-Tetrachloroethane	50.00	50.34	101	52.64	105	74-122	66-130	4	0-20	
Tetrachloroethene	50.00	52.18	104	46.87	94	55-139	41-153	11	0-23	
Toluene	50.00	51.59	103	51.47	103	80-120	73-127	0	0-20	
1,2,3-Trichlorobenzene	50.00	52.15	104	55.31	111	72-132	62-142	6	0-20	
1,2,4-Trichlorobenzene	50.00	50.68	101	53.65	107	74-134	64-144	6	0-20	
1,1,1-Trichloroethane	50.00	50.26	101	50.01	100	76-124	68-132	0	0-20	
1,1,2-Trichloro-1,2,2-Trifluoroethane	50.00	47.71	95	44.90	90	54-150	38-166	6	0-30	
1,1,2-Trichloroethane	50.00	50.06	100	52.13	104	80-120	73-127	4	0-20	
Trichloroethene	50.00	51.35	103	51.34	103	79-121	72-128	0	0-20	
Trichlorofluoromethane	50.00	46.98	94	45.39	91	72-132	62-142	3	0-20	
1,2,3-Trichloropropane	50.00	51.54	103	53.96	108	75-123	67-131	5	0-20	
1,2,4-Trimethylbenzene	50.00	54.26	109	55.25	111	74-128	65-137	2	0-20	
1,3,5-Trimethylbenzene	50.00	53.05	106	54.00	108	77-131	68-140	2	0-20	
Vinyl Acetate	50.00	49.64	99	52.05	104	50-150	33-167	5	0-20	
Vinyl Chloride	50.00	47.88	96	47.19	94	63-129	52-140	1	0-20	
p/m-Xylene	100.0	106.0	106	107.1	107	80-122	73-129	1	0-20	
o-Xylene	50.00	53.68	107	54.88	110	80-128	72-136	2	0-20	
Methyl-t-Butyl Ether (MTBE)	50.00	50.61	101	53.33	107	69-123	60-132	5	0-20	
Tert-Butyl Alcohol (TBA)	250.0	250.4	100	266.8	107	80-124	73-131	6	0-20	
Diisopropyl Ether (DIPE)	50.00	52.13	104	54.41	109	79-121	72-128	4	0-20	
Ethyl-t-Butyl Ether (ETBE)	50.00	52.18	104	54.49	109	71-125	62-134	4	0-20	
Tert-Amyl-Methyl Ether (TAME)	50.00	52.47	105	54.90	110	70-124	61-133	5	0-20	
Ethanol	500.0	474.9	95	527.4	105	53-149	37-165	10	0-24	

Total number of LCS compounds: 71
Total number of ME compounds: 2

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS/LCSD

ERM-WEST	Date Received:	03/20/18
1920 Main Street, Suite 300	Work Order:	18-03-1646
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
Project: Infineon / 0444392.002		Page 3 of 4

Total number of ME compounds allowed: 4
LCS ME CL validation result: Pass

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS/LCSD

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392.002

Date Received: 03/20/18
Work Order: 18-03-1646
Preparation: EPA 5035
Method: EPA 8260B

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
095-01-025-29788	**LCS**	**Solid**	**GC/MS GGG**	**03/20/18**	**03/20/18 17:41**	**180320L028**
095-01-025-29788	**LCSD**	**Solid**	**GC/MS GGG**	**03/20/18**	**03/20/18 18:09**	**180320L028**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Benzene	50.00	43.25	86	44.12	88	80-120	73-127	2	0-20	
Carbon Tetrachloride	50.00	39.58	79	42.06	84	65-137	53-149	6	0-20	
Chlorobenzene	50.00	45.36	91	46.50	93	80-120	73-127	2	0-20	
1,2-Dibromoethane	50.00	46.45	93	47.30	95	80-120	73-127	2	0-20	
1,2-Dichlorobenzene	50.00	46.70	93	47.41	95	80-120	73-127	2	0-20	
1,2-Dichloroethane	50.00	47.23	94	49.29	99	80-120	73-127	4	0-20	
1,1-Dichloroethene	50.00	43.95	88	44.88	90	68-128	58-138	2	0-20	
Ethylbenzene	50.00	45.61	91	47.21	94	80-120	73-127	3	0-20	
Toluene	50.00	43.75	88	45.28	91	80-120	73-127	3	0-20	
Trichloroethene	50.00	45.91	92	46.78	94	80-120	73-127	2	0-20	
Vinyl Chloride	50.00	63.14	126	62.99	126	67-127	57-137	0	0-20	
p/m-Xylene	100.0	91.80	92	94.49	94	75-125	67-133	3	0-25	
o-Xylene	50.00	46.47	93	48.11	96	75-125	67-133	3	0-25	
Methyl-t-Butyl Ether (MTBE)	50.00	46.19	92	47.42	95	70-124	61-133	3	0-20	
Tert-Butyl Alcohol (TBA)	250.0	265.9	106	248.9	100	73-121	65-129	7	0-20	
Diisopropyl Ether (DIPE)	50.00	45.09	90	46.74	93	69-129	59-139	4	0-20	
Ethyl-t-Butyl Ether (ETBE)	50.00	47.33	95	48.46	97	70-124	61-133	2	0-20	
Tert-Amyl-Methyl Ether (TAME)	50.00	46.91	94	48.70	97	74-122	66-130	4	0-20	
Ethanol	500.0	526.7	105	452.9	91	51-135	37-149	15	0-27	

Total number of LCS compounds: 19
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

RPD: Relative Percent Difference. CL: Control Limits

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Sample Analysis Summary Report

Work Order: 18-03-1646 Page 1 of 1

Method	Extraction	Chemist ID	Instrument	Analytical Location
EPA 8260B	EPA 5035	1126	GC/MS GGG	2
EPA 8260B	EPA 5030C	1126	GC/MS RR	2

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Glossary of Terms and Qualifiers

Work Order: 18-03-1646 Page 1 of 1

Qualifiers	Definition
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
CI	See case narrative.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

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Revised COC received from Stewart Emhof (ERM) on 03/21/2018 at 11:47am.
- Virendra (ECI)

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CHAIN-OF-CUSTODY RECORD

Date 03/20/18

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WO NO. / LAB USE ONLY: **18-03-1646**

LABORATORY CLIENT: ERM

ADDRESS: 1920 Main Street - Suite 300

CITY: Irvine STATE: CA ZIP: 92614

TEL: 949-623-4700 E-MAIL: SEE Special Instructions

TURNAROUND TIME (Rush surcharges may apply to any TAT not "STANDARD"):
☐ SAME DAY ☒ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAYS ☐ STANDARD

EDD
☐ COELT EDF ☐ OTHER

SPECIAL INSTRUCTIONS:
Email to Brad. Crors @ erm. com
Stewart. emhof @ erm. com
Maggie. Tymkow @ erm. com
Tony. Parenteau @ erm. com

CLIENT PROJECT NAME / NO.: Infineon

P.O. NO.: 0444392-002

PROJECT CONTACT: Maggie Tymkow

LAB CONTACT OR QUOTE NO: Virendra Patel

GLOBAL ID:

LOG CODE:

SAMPLER(S): (PRINT) Manuel Lua

REQUESTED ANALYSES
Please check box or fill in blank as needed.

LAB USE ONLY	SAMPLE ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	Unpreserved	Preserved	Field Filtered	☐ TPH(g) ☐ GRO	☐ TPH(d) ☐ DRO	TPH ☐ C6-C36 ☐ C6-C44	TPH	BTEX / MTBE ☐ 8260 ☐	VOCs (8260)	Oxygenates (8260)	Prep (5035) ☐ En Core ☒ Terra Core	SVOCs (8270)	Pesticides (8081)	PCBs (8082)	PAHs ☐ 8270 ☐ 8270 SIM	T22 Metals ☐ 6010/747X ☐ 6020/747X	Cr(VI) ☐ 7196 ☐ 7199 ☐ 218.6
1	B1-5-10	3/20/18	0835	Soil	1 Kit									✓								
2	B1-5-22	3/20/18	0847	Soil	1 Kit									✓								
3	B1-5-33	3/20/18	0856	Soil	1 Kit									✓								
4	B1-5-53	3/20/18	0911	Soil	1 Kit									✓								
5	B1-5-80	3/20/18	10 04	Soil	1 Kit									✓								
6	B1-15-80	3/20/18	1004	Soil	1 Kit									✓								
7	Trip Blk			Water	2									✓								

* Sampling Times entered based on sampler's field notes SAE 3-21-18

(unused rows struck through: 3/20/18 - 1200)

Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
[signature] 3/20/18 — 1500	[signature]	3/20/18	1500
[signature]	[signature]	3/20/18	1710

2016-04-01-Revision

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CHAIN-OF-CUSTODY RECORD

Date 03/20/18
Page 1 of 1

WO NO. / LAB USE ONLY
18-03-1646

LABORATORY CLIENT: ERM
ADDRESS: 1920 Main Street - Suite 300
CITY: Irvine STATE: CA ZIP: 92614
TEL: 949-623-4700 E-MAIL: SEE Special Instructions

CLIENT PROJECT NAME / NO.: INFineon
P.O. NO.: 0444392-002
PROJECT CONTACT: Maggie TymKow
LAB CONTACT OR QUOTE NO: Virendra Patel
GLOBAL ID: LOG CODE:
SAMPLER(S): (PRINT) Manuel Lua

TURNAROUND TIME (Rush surcharges may apply to any TAT not "STANDARD"):
☐ SAME DAY ☒ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAYS ☐ STANDARD

EDD
☐ COELT EDF ☐ OTHER

SPECIAL INSTRUCTIONS:
Email to Brad.Crors@erm.com
Stewart.emhof@erm.com
Maggie.TymKow@erm.com
Tony.Parenteau@erm.com

REQUESTED ANALYSES
Please check box or fill in blank as needed.

LAB USE ONLY	SAMPLE ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	Unpreserved	Preserved	Field Filtered	☐ TPH(g) ☐ GRO	☐ TPH(d) ☐ DRO	TPH ☐ C6-C36 ☐ C6-C44	TPH	BTEX / MTBE ☐ 8260 ☐	VOCs (8260)	Oxygenates (8260)	Prep (5035) ☐ En Core ☒ Terra Core	SVOCs (8270)	Pesticides (8081)	PCBs (8082)	PAHs ☐ 8270 ☐ 8270 SIM	T22 Metals ☐ 6010/747X ☐ 6020/747X	Cr(VI) ☐ 7196 ☐ 7199 ☐ 218.6				
1	B1-5-10	3/20/18		Soil	1 Kit									✓												
2	B1-5-22	3/20/18		Soil	1 Kit									✓												
3	B1-5-33	3/20/18		Soil	1 Kit									✓												
4	B1-5-53	3/20/18		Soil	1 Kit									✓												
5	B1-5-80	3/20/18		Soil	1 Kit									✓												
6	B1-15-80	3/20/18	—	Soil	1 Kit									✓												
7	Trip Blk			Water	2									✓												

3/20/18 - 1200

Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
Manuel Lua 3/20/18 - 1500	Jeff Campbell	3/20/18	1500
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
Jeff Campbell	[signature]	3/20/18	1710
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:

2016-04-01-Revision

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WORK ORDER NUMBER: 18-03-1646

SAMPLE RECEIPT CHECKLIST

COOLER 1 OF 1

CLIENT: ERM

DATE: 03 / 20 / 2018

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)

Thermometer ID: SC6 (CF: +0.2°C); Temperature (w/o CF): 2.0 °C (w/ CF): 2.2 °C; ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____)

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling

☐ Sample(s) received at ambient temperature; placed on ice for transport by courier

Ambient Temperature: ☐ Air ☐ Filter Checked by: 1091

CUSTODY SEAL:

Cooler ☐ Present and Intact ☐ Present but Not Intact ☑ Not Present ☐ N/A Checked by: 1091

Sample(s) ☐ Present and Intact ☐ Present but Not Intact ☑ Not Present ☐ N/A Checked by: 689

SAMPLE CONDITION:	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☐	☑	☐
☐ Sampling date ☑ Sampling time ☐ Matrix ☐ Number of containers			
☐ No analysis requested ☐ Not relinquished ☐ No relinquished date ☐ No relinquished time			
Sampler's name indicated on COC	☑	☐	☐
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and in good condition	☑	☐	☐
Proper containers for analyses requested	☑	☐	☐
Sufficient volume/mass for analyses requested	☑	☐	☐
Samples received within holding time	☑	☐	☐
Aqueous samples for certain analyses received within 15-minute holding time			
☐ pH ☐ Residual Chlorine ☐ Dissolved Sulfide ☐ Dissolved Oxygen	☐	☐	☑
Proper preservation chemical(s) noted on COC and/or sample container	☑	☐	☐
Unpreserved aqueous sample(s) received for certain analyses			
☐ Volatile Organics ☐ Total Metals ☐ Dissolved Metals			
Acid/base preserved samples - pH within acceptable range	☐	☐	☑
Container(s) for certain analysis free of headspace	☑	☐	☐
☑ Volatile Organics ☐ Dissolved Gases (RSK-175) ☐ Dissolved Oxygen (SM 4500)			
☐ Carbon Dioxide (SM 4500) ☐ Ferrous Iron (SM 3500) ☐ Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE: (Trip Blank Lot Number: 180219C / N/A)

Aqueous: ☐ VOA ☑ VOAh ☐ VOA**na**$_2$ ☐ 100PJ ☐ 100PJ**na**$_2$ ☐ 125AGB ☐ 125AGB**h** ☐ 125AGB**p** ☐ 125PB ☐ 125PB**znna** (pH__9)

☐ 250AGB ☐ 250CGB ☐ 250CGB**s** (pH__2) ☐ 250PB ☐ 250PB**n** (pH__2) ☐ 500AGB ☐ 500AGJ ☐ 500AGJ**s** (pH__2) ☐ 500PB

☐ 1AGB ☐ 1AGB**na**$_2$ ☐ 1AGB**s** (pH__2) ☐ 1AGB**s** (O&G) ☐ 1PB ☐ 1PB**na** (pH__12) ☐ _____ ☐ _____ ☐ _____

Solid: ☐ 4ozCGJ ☐ 8ozCGJ ☐ 16ozCGJ ☐ Sleeve (___) ☐ EnCores® (___) ☑ TerraCores® (3) ☑ 2oz PJ ☐ _____ ☐ _____

Air: ☐ Tedlar™ ☐ Canister ☐ Sorbent Tube ☐ PUF ☐ _____ **Other Matrix** (_____): ☐ _____ ☐ _____ ☐ _____

Container: **A** = Amber, **B** = Bottle, **C** = Clear, **E** = Envelope, **G** = Glass, **J** = Jar, **P** = Plastic, and **Z** = Ziploc/Resealable Bag

Preservative: **b** = buffered, **f** = filtered, **h** = HCl, **n** = HNO_3, **na** = NaOH, **na**$_2$ = $Na_2S_2O_3$, **p** = H_3PO_4, **s** = H_2SO_4, **u** = ultra-pure, **x** = Na_2SO_3+$NaHSO_4.H_2O$, **znna** = Zn $(CH_3CO_2)_2$ + NaOH

Labeled/Checked by: 689

Reviewed by: 1053

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WORK ORDER NUMBER: 18-03-1780

The difference is service

AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: ERM-WEST

Client Project Name: Infineon / 0444392.002

Attention: Maggie Tymkow
1920 Main Street
Suite 300
Irvine, CA 92614-7279

Approved for release on 03/22/2018 by:
Virendra Patel
Project Manager

ResultLink

Email your PM

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Contents

Client Project Name: Infineon / 0444392.002
Work Order Number: 18-03-1780

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Work Order Narrative

Work Order: 18-03-1780 Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 03/21/18. They were assigned to Work Order 18-03-1780.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

DoD Projects:

The test results contained in this report are accredited under the laboratory's ISO/IEC 17025:2005 and DoD-ELAP accreditation issued by the ANSI-ASQ National Accreditation Board. Refer to certificate and scope of accreditation ADE-1864.

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Sample Summary

Client:	ERM-WEST	Work Order:	18-03-1780
	1920 Main Street, Suite 300	Project Name:	Infineon / 0444392.002
	Irvine, CA 92614-7279	PO Number:	0444392.002
		Date/Time Received:	03/21/18 16:55
		Number of Containers:	26
Attn:	Maggie Tymkow		

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
B1-3-4	18-03-1780-1	03/21/18 07:47	4	Solid
B1-3-17	18-03-1780-2	03/21/18 08:57	4	Solid
B1-3-29	18-03-1780-3	03/21/18 09:06	4	Solid
B1-3-54	18-03-1780-4	03/21/18 09:17	4	Solid
B1-3-80	18-03-1780-5	03/21/18 10:05	4	Solid
B1-13-54	18-03-1780-6	03/21/18 00:00	4	Solid
Trip Blk	18-03-1780-7	03/21/18 00:00	2	Aqueous

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Detections Summary

Client:	ERM-WEST	Work Order:	18-03-1780
	1920 Main Street, Suite 300	Project Name:	Infineon / 0444392.002
	Irvine, CA 92614-7279	Received:	03/21/18
Attn:	Maggie Tymkow		Page 1 of 1

Client SampleID

Analyte	Result	Qualifiers	RL	Units	Method	Extraction
B1-3-54 (18-03-1780-4)						
Tetrachloroethene	1.9		1.1	ug/kg	EPA 8260B	EPA 5035

Subcontracted analyses, if any, are not included in this summary.

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* MDL is shown

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/21/18
Work Order: 18-03-1780
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

Project: Infineon / 0444392.002

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Trip Blk	**18-03-1780-7-A**	**03/21/18 00:00**	**Aqueous**	**GC/MS RR**	**03/21/18**	**03/21/18 19:34**	**180321L023**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	20	1.00	
Benzene	ND	0.50	1.00	
Bromobenzene	ND	1.0	1.00	
Bromochloromethane	ND	1.0	1.00	
Bromodichloromethane	ND	1.0	1.00	
Bromoform	ND	1.0	1.00	
Bromomethane	ND	10	1.00	
2-Butanone	ND	10	1.00	
n-Butylbenzene	ND	1.0	1.00	
sec-Butylbenzene	ND	1.0	1.00	
tert-Butylbenzene	ND	1.0	1.00	
Carbon Disulfide	ND	10	1.00	
Carbon Tetrachloride	ND	0.50	1.00	
Chlorobenzene	ND	1.0	1.00	
Chloroethane	ND	5.0	1.00	
Chloroform	ND	1.0	1.00	
Chloromethane	ND	10	1.00	
2-Chlorotoluene	ND	1.0	1.00	
4-Chlorotoluene	ND	1.0	1.00	
Dibromochloromethane	ND	1.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.0	1.00	
1,2-Dibromoethane	ND	1.0	1.00	
Dibromomethane	ND	1.0	1.00	
1,2-Dichlorobenzene	ND	1.0	1.00	
1,3-Dichlorobenzene	ND	1.0	1.00	
1,4-Dichlorobenzene	ND	1.0	1.00	
Dichlorodifluoromethane	ND	1.0	1.00	
1,1-Dichloroethane	ND	1.0	1.00	
1,2-Dichloroethane	ND	0.50	1.00	
1,1-Dichloroethene	ND	1.0	1.00	
c-1,2-Dichloroethene	ND	1.0	1.00	
t-1,2-Dichloroethene	ND	1.0	1.00	
1,2-Dichloropropane	ND	1.0	1.00	
1,3-Dichloropropane	ND	1.0	1.00	
2,2-Dichloropropane	ND	1.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/21/18
1920 Main Street, Suite 300	Work Order:	18-03-1780
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/L
Project: Infineon / 0444392.002		Page 2 of 6

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	1.0	1.00	
c-1,3-Dichloropropene	ND	0.50	1.00	
t-1,3-Dichloropropene	ND	0.50	1.00	
Ethylbenzene	ND	1.0	1.00	
2-Hexanone	ND	10	1.00	
Isopropylbenzene	ND	1.0	1.00	
p-Isopropyltoluene	ND	1.0	1.00	
Methylene Chloride	ND	10	1.00	
4-Methyl-2-Pentanone	ND	10	1.00	
Naphthalene	ND	10	1.00	
n-Propylbenzene	ND	1.0	1.00	
Styrene	ND	1.0	1.00	
1,1,1,2-Tetrachloroethane	ND	1.0	1.00	
1,1,2,2-Tetrachloroethane	ND	1.0	1.00	
Tetrachloroethene	ND	1.0	1.00	
Toluene	ND	1.0	1.00	
1,2,3-Trichlorobenzene	ND	1.0	1.00	
1,2,4-Trichlorobenzene	ND	1.0	1.00	
1,1,1-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.00	
1,1,2-Trichloroethane	ND	1.0	1.00	
Trichloroethene	ND	1.0	1.00	
Trichlorofluoromethane	ND	10	1.00	
1,2,3-Trichloropropane	ND	5.0	1.00	
1,2,4-Trimethylbenzene	ND	1.0	1.00	
1,3,5-Trimethylbenzene	ND	1.0	1.00	
Vinyl Acetate	ND	10	1.00	
Vinyl Chloride	ND	0.50	1.00	
p/m-Xylene	ND	1.0	1.00	
o-Xylene	ND	1.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	1.0	1.00	
Tert-Butyl Alcohol (TBA)	ND	10	1.00	
Diisopropyl Ether (DIPE)	ND	2.0	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	2.0	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	2.0	1.00	
Ethanol	ND	100	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	91	77-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/21/18
1920 Main Street, Suite 300	Work Order:	18-03-1780
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/L
Project: Infineon / 0444392.002		Page 3 of 6

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	113	80-128	
1,2-Dichloroethane-d4	115	80-129	
Toluene-d8	99	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/21/18
1920 Main Street, Suite 300		Work Order:	18-03-1780
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/L
Project: Infineon / 0444392.002			Page 4 of 6

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-14-001-25463**	**N/A**	**Aqueous**	**GC/MS RR**	**03/21/18**	**03/21/18 19:03**	**180321L023**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	20	1.00	
Benzene	ND	0.50	1.00	
Bromobenzene	ND	1.0	1.00	
Bromochloromethane	ND	1.0	1.00	
Bromodichloromethane	ND	1.0	1.00	
Bromoform	ND	1.0	1.00	
Bromomethane	ND	10	1.00	
2-Butanone	ND	10	1.00	
n-Butylbenzene	ND	1.0	1.00	
sec-Butylbenzene	ND	1.0	1.00	
tert-Butylbenzene	ND	1.0	1.00	
Carbon Disulfide	ND	10	1.00	
Carbon Tetrachloride	ND	0.50	1.00	
Chlorobenzene	ND	1.0	1.00	
Chloroethane	ND	5.0	1.00	
Chloroform	ND	1.0	1.00	
Chloromethane	ND	10	1.00	
2-Chlorotoluene	ND	1.0	1.00	
4-Chlorotoluene	ND	1.0	1.00	
Dibromochloromethane	ND	1.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.0	1.00	
1,2-Dibromoethane	ND	1.0	1.00	
Dibromomethane	ND	1.0	1.00	
1,2-Dichlorobenzene	ND	1.0	1.00	
1,3-Dichlorobenzene	ND	1.0	1.00	
1,4-Dichlorobenzene	ND	1.0	1.00	
Dichlorodifluoromethane	ND	1.0	1.00	
1,1-Dichloroethane	ND	1.0	1.00	
1,2-Dichloroethane	ND	0.50	1.00	
1,1-Dichloroethene	ND	1.0	1.00	
c-1,2-Dichloroethene	ND	1.0	1.00	
t-1,2-Dichloroethene	ND	1.0	1.00	
1,2-Dichloropropane	ND	1.0	1.00	
1,3-Dichloropropane	ND	1.0	1.00	
2,2-Dichloropropane	ND	1.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/21/18
1920 Main Street, Suite 300	Work Order:	18-03-1780
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/L
Project: Infineon / 0444392.002		Page 5 of 6

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	1.0	1.00	
c-1,3-Dichloropropene	ND	0.50	1.00	
t-1,3-Dichloropropene	ND	0.50	1.00	
Ethylbenzene	ND	1.0	1.00	
2-Hexanone	ND	10	1.00	
Isopropylbenzene	ND	1.0	1.00	
p-Isopropyltoluene	ND	1.0	1.00	
Methylene Chloride	ND	10	1.00	
4-Methyl-2-Pentanone	ND	10	1.00	
Naphthalene	ND	10	1.00	
n-Propylbenzene	ND	1.0	1.00	
Styrene	ND	1.0	1.00	
1,1,1,2-Tetrachloroethane	ND	1.0	1.00	
1,1,2,2-Tetrachloroethane	ND	1.0	1.00	
Tetrachloroethene	ND	1.0	1.00	
Toluene	ND	1.0	1.00	
1,2,3-Trichlorobenzene	ND	1.0	1.00	
1,2,4-Trichlorobenzene	ND	1.0	1.00	
1,1,1-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.00	
1,1,2-Trichloroethane	ND	1.0	1.00	
Trichloroethene	ND	1.0	1.00	
Trichlorofluoromethane	ND	10	1.00	
1,2,3-Trichloropropane	ND	5.0	1.00	
1,2,4-Trimethylbenzene	ND	1.0	1.00	
1,3,5-Trimethylbenzene	ND	1.0	1.00	
Vinyl Acetate	ND	10	1.00	
Vinyl Chloride	ND	0.50	1.00	
p/m-Xylene	ND	1.0	1.00	
o-Xylene	ND	1.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	1.0	1.00	
Tert-Butyl Alcohol (TBA)	ND	10	1.00	
Diisopropyl Ether (DIPE)	ND	2.0	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	2.0	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	2.0	1.00	
Ethanol	ND	100	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	91	77-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/21/18
1920 Main Street, Suite 300	Work Order:	18-03-1780
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/L
Project: Infineon / 0444392.002		Page 6 of 6

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	112	80-128	
1,2-Dichloroethane-d4	114	80-129	
Toluene-d8	99	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392.002

Date Received: 03/21/18
Work Order: 18-03-1780
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B1-3-4	**18-03-1780-1-C**	**03/21/18 07:47**	**Solid**	**GC/MS GGG**	**03/21/18**	**03/21/18 18:12**	**180321L019**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	49	1.00	
Benzene	ND	0.97	1.00	
Bromobenzene	ND	0.97	1.00	
Bromochloromethane	ND	1.9	1.00	
Bromodichloromethane	ND	0.97	1.00	
Bromoform	ND	4.9	1.00	
Bromomethane	ND	19	1.00	
2-Butanone	ND	19	1.00	
n-Butylbenzene	ND	0.97	1.00	
sec-Butylbenzene	ND	0.97	1.00	
tert-Butylbenzene	ND	0.97	1.00	
Carbon Disulfide	ND	9.7	1.00	
Carbon Tetrachloride	ND	0.97	1.00	
Chlorobenzene	ND	0.97	1.00	
Chloroethane	ND	1.9	1.00	
Chloroform	ND	0.97	1.00	
Chloromethane	ND	19	1.00	
2-Chlorotoluene	ND	0.97	1.00	
4-Chlorotoluene	ND	0.97	1.00	
Dibromochloromethane	ND	1.9	1.00	
1,2-Dibromo-3-Chloropropane	ND	4.9	1.00	
1,2-Dibromoethane	ND	0.97	1.00	
Dibromomethane	ND	0.97	1.00	
1,2-Dichlorobenzene	ND	0.97	1.00	
1,3-Dichlorobenzene	ND	0.97	1.00	
1,4-Dichlorobenzene	ND	0.97	1.00	
Dichlorodifluoromethane	ND	1.9	1.00	
1,1-Dichloroethane	ND	0.97	1.00	
1,2-Dichloroethane	ND	0.97	1.00	
1,1-Dichloroethene	ND	0.97	1.00	
c-1,2-Dichloroethene	ND	0.97	1.00	
t-1,2-Dichloroethene	ND	0.97	1.00	
1,2-Dichloropropane	ND	0.97	1.00	
1,3-Dichloropropane	ND	0.97	1.00	
2,2-Dichloropropane	ND	4.9	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/21/18
1920 Main Street, Suite 300	Work Order:	18-03-1780
Irvine, CA 92614-7279	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: Infineon / 0444392.002		Page 2 of 21

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	1.9	1.00	
c-1,3-Dichloropropene	ND	0.97	1.00	
t-1,3-Dichloropropene	ND	1.9	1.00	
Ethylbenzene	ND	0.97	1.00	
2-Hexanone	ND	19	1.00	
Isopropylbenzene	ND	0.97	1.00	
p-Isopropyltoluene	ND	0.97	1.00	
Methylene Chloride	ND	9.7	1.00	
4-Methyl-2-Pentanone	ND	19	1.00	
Naphthalene	ND	9.7	1.00	
n-Propylbenzene	ND	1.9	1.00	
Styrene	ND	0.97	1.00	
1,1,1,2-Tetrachloroethane	ND	0.97	1.00	
1,1,2,2-Tetrachloroethane	ND	1.9	1.00	
Tetrachloroethene	ND	0.97	1.00	
Toluene	ND	0.97	1.00	
1,2,3-Trichlorobenzene	ND	1.9	1.00	
1,2,4-Trichlorobenzene	ND	1.9	1.00	
1,1,1-Trichloroethane	ND	0.97	1.00	
1,1,2-Trichloroethane	ND	0.97	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	9.7	1.00	
Trichloroethene	ND	1.9	1.00	
Trichlorofluoromethane	ND	9.7	1.00	
1,2,3-Trichloropropane	ND	1.9	1.00	
1,2,4-Trimethylbenzene	ND	1.9	1.00	
1,3,5-Trimethylbenzene	ND	1.9	1.00	
Vinyl Acetate	ND	9.7	1.00	
Vinyl Chloride	ND	0.97	1.00	
p/m-Xylene	ND	1.9	1.00	
o-Xylene	ND	0.97	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	1.9	1.00	
Tert-Butyl Alcohol (TBA)	ND	19	1.00	
Diisopropyl Ether (DIPE)	ND	0.97	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.97	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.97	1.00	
Ethanol	ND	490	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	98	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/21/18
1920 Main Street, Suite 300	Work Order:	18-03-1780
Irvine, CA 92614-7279	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: Infineon / 0444392.002		Page 3 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	108	79-133	
1,2-Dichloroethane-d4	111	71-155	
Toluene-d8	99	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/21/18
Work Order: 18-03-1780
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Project: Infineon / 0444392.002

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B1-3-17	**18-03-1780-2-C**	**03/21/18 08:57**	**Solid**	**GC/MS GGG**	**03/21/18**	**03/21/18 18:40**	**180321L019**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	50	1.00	
Benzene	ND	1.0	1.00	
Bromobenzene	ND	1.0	1.00	
Bromochloromethane	ND	2.0	1.00	
Bromodichloromethane	ND	1.0	1.00	
Bromoform	ND	5.0	1.00	
Bromomethane	ND	20	1.00	
2-Butanone	ND	20	1.00	
n-Butylbenzene	ND	1.0	1.00	
sec-Butylbenzene	ND	1.0	1.00	
tert-Butylbenzene	ND	1.0	1.00	
Carbon Disulfide	ND	10	1.00	
Carbon Tetrachloride	ND	1.0	1.00	
Chlorobenzene	ND	1.0	1.00	
Chloroethane	ND	2.0	1.00	
Chloroform	ND	1.0	1.00	
Chloromethane	ND	20	1.00	
2-Chlorotoluene	ND	1.0	1.00	
4-Chlorotoluene	ND	1.0	1.00	
Dibromochloromethane	ND	2.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.0	1.00	
1,2-Dibromoethane	ND	1.0	1.00	
Dibromomethane	ND	1.0	1.00	
1,2-Dichlorobenzene	ND	1.0	1.00	
1,3-Dichlorobenzene	ND	1.0	1.00	
1,4-Dichlorobenzene	ND	1.0	1.00	
Dichlorodifluoromethane	ND	2.0	1.00	
1,1-Dichloroethane	ND	1.0	1.00	
1,2-Dichloroethane	ND	1.0	1.00	
1,1-Dichloroethene	ND	1.0	1.00	
c-1,2-Dichloroethene	ND	1.0	1.00	
t-1,2-Dichloroethene	ND	1.0	1.00	
1,2-Dichloropropane	ND	1.0	1.00	
1,3-Dichloropropane	ND	1.0	1.00	
2,2-Dichloropropane	ND	5.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/21/18
1920 Main Street, Suite 300		Work Order:	18-03-1780
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392.002			Page 5 of 21

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.0	1.00	
c-1,3-Dichloropropene	ND	1.0	1.00	
t-1,3-Dichloropropene	ND	2.0	1.00	
Ethylbenzene	ND	1.0	1.00	
2-Hexanone	ND	20	1.00	
Isopropylbenzene	ND	1.0	1.00	
p-Isopropyltoluene	ND	1.0	1.00	
Methylene Chloride	ND	10	1.00	
4-Methyl-2-Pentanone	ND	20	1.00	
Naphthalene	ND	10	1.00	
n-Propylbenzene	ND	2.0	1.00	
Styrene	ND	1.0	1.00	
1,1,1,2-Tetrachloroethane	ND	1.0	1.00	
1,1,2,2-Tetrachloroethane	ND	2.0	1.00	
Tetrachloroethene	ND	1.0	1.00	
Toluene	ND	1.0	1.00	
1,2,3-Trichlorobenzene	ND	2.0	1.00	
1,2,4-Trichlorobenzene	ND	2.0	1.00	
1,1,1-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.00	
Trichloroethene	ND	2.0	1.00	
Trichlorofluoromethane	ND	10	1.00	
1,2,3-Trichloropropane	ND	2.0	1.00	
1,2,4-Trimethylbenzene	ND	2.0	1.00	
1,3,5-Trimethylbenzene	ND	2.0	1.00	
Vinyl Acetate	ND	10	1.00	
Vinyl Chloride	ND	1.0	1.00	
p/m-Xylene	ND	2.0	1.00	
o-Xylene	ND	1.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.0	1.00	
Tert-Butyl Alcohol (TBA)	ND	20	1.00	
Diisopropyl Ether (DIPE)	ND	1.0	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.0	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.0	1.00	
Ethanol	ND	500	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	97	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/21/18
1920 Main Street, Suite 300	Work Order:	18-03-1780
Irvine, CA 92614-7279	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: Infineon / 0444392.002		Page 6 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	106	79-133	
1,2-Dichloroethane-d4	111	71-155	
Toluene-d8	100	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/21/18
Work Order: 18-03-1780
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Project: Infineon / 0444392.002

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B1-3-29	**18-03-1780-3-C**	**03/21/18 09:06**	**Solid**	**GC/MS GGG**	**03/21/18**	**03/21/18 19:08**	**180321L019**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	49	1.00	
Benzene	ND	0.98	1.00	
Bromobenzene	ND	0.98	1.00	
Bromochloromethane	ND	2.0	1.00	
Bromodichloromethane	ND	0.98	1.00	
Bromoform	ND	4.9	1.00	
Bromomethane	ND	20	1.00	
2-Butanone	ND	20	1.00	
n-Butylbenzene	ND	0.98	1.00	
sec-Butylbenzene	ND	0.98	1.00	
tert-Butylbenzene	ND	0.98	1.00	
Carbon Disulfide	ND	9.8	1.00	
Carbon Tetrachloride	ND	0.98	1.00	
Chlorobenzene	ND	0.98	1.00	
Chloroethane	ND	2.0	1.00	
Chloroform	ND	0.98	1.00	
Chloromethane	ND	20	1.00	
2-Chlorotoluene	ND	0.98	1.00	
4-Chlorotoluene	ND	0.98	1.00	
Dibromochloromethane	ND	2.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	4.9	1.00	
1,2-Dibromoethane	ND	0.98	1.00	
Dibromomethane	ND	0.98	1.00	
1,2-Dichlorobenzene	ND	0.98	1.00	
1,3-Dichlorobenzene	ND	0.98	1.00	
1,4-Dichlorobenzene	ND	0.98	1.00	
Dichlorodifluoromethane	ND	2.0	1.00	
1,1-Dichloroethane	ND	0.98	1.00	
1,2-Dichloroethane	ND	0.98	1.00	
1,1-Dichloroethene	ND	0.98	1.00	
c-1,2-Dichloroethene	ND	0.98	1.00	
t-1,2-Dichloroethene	ND	0.98	1.00	
1,2-Dichloropropane	ND	0.98	1.00	
1,3-Dichloropropane	ND	0.98	1.00	
2,2-Dichloropropane	ND	4.9	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/21/18
1920 Main Street, Suite 300	Work Order:	18-03-1780
Irvine, CA 92614-7279	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: Infineon / 0444392.002		Page 8 of 21

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.0	1.00	
c-1,3-Dichloropropene	ND	0.98	1.00	
t-1,3-Dichloropropene	ND	2.0	1.00	
Ethylbenzene	ND	0.98	1.00	
2-Hexanone	ND	20	1.00	
Isopropylbenzene	ND	0.98	1.00	
p-Isopropyltoluene	ND	0.98	1.00	
Methylene Chloride	ND	9.8	1.00	
4-Methyl-2-Pentanone	ND	20	1.00	
Naphthalene	ND	9.8	1.00	
n-Propylbenzene	ND	2.0	1.00	
Styrene	ND	0.98	1.00	
1,1,1,2-Tetrachloroethane	ND	0.98	1.00	
1,1,2,2-Tetrachloroethane	ND	2.0	1.00	
Tetrachloroethene	ND	0.98	1.00	
Toluene	ND	0.98	1.00	
1,2,3-Trichlorobenzene	ND	2.0	1.00	
1,2,4-Trichlorobenzene	ND	2.0	1.00	
1,1,1-Trichloroethane	ND	0.98	1.00	
1,1,2-Trichloroethane	ND	0.98	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	9.8	1.00	
Trichloroethene	ND	2.0	1.00	
Trichlorofluoromethane	ND	9.8	1.00	
1,2,3-Trichloropropane	ND	2.0	1.00	
1,2,4-Trimethylbenzene	ND	2.0	1.00	
1,3,5-Trimethylbenzene	ND	2.0	1.00	
Vinyl Acetate	ND	9.8	1.00	
Vinyl Chloride	ND	0.98	1.00	
p/m-Xylene	ND	2.0	1.00	
o-Xylene	ND	0.98	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.0	1.00	
Tert-Butyl Alcohol (TBA)	ND	20	1.00	
Diisopropyl Ether (DIPE)	ND	0.98	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.98	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.98	1.00	
Ethanol	ND	490	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	98	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/21/18
1920 Main Street, Suite 300	Work Order:	18-03-1780
Irvine, CA 92614-7279	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: Infineon / 0444392.002		Page 9 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	108	79-133	
1,2-Dichloroethane-d4	116	71-155	
Toluene-d8	101	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/21/18
1920 Main Street, Suite 300		Work Order:	18-03-1780
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392.002			Page 10 of 21

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B1-3-54	**18-03-1780-4-C**	**03/21/18 09:17**	**Solid**	**GC/MS GGG**	**03/21/18**	**03/21/18 19:36**	**180321L019**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	55	1.00	
Benzene	ND	1.1	1.00	
Bromobenzene	ND	1.1	1.00	
Bromochloromethane	ND	2.2	1.00	
Bromodichloromethane	ND	1.1	1.00	
Bromoform	ND	5.5	1.00	
Bromomethane	ND	22	1.00	
2-Butanone	ND	22	1.00	
n-Butylbenzene	ND	1.1	1.00	
sec-Butylbenzene	ND	1.1	1.00	
tert-Butylbenzene	ND	1.1	1.00	
Carbon Disulfide	ND	11	1.00	
Carbon Tetrachloride	ND	1.1	1.00	
Chlorobenzene	ND	1.1	1.00	
Chloroethane	ND	2.2	1.00	
Chloroform	ND	1.1	1.00	
Chloromethane	ND	22	1.00	
2-Chlorotoluene	ND	1.1	1.00	
4-Chlorotoluene	ND	1.1	1.00	
Dibromochloromethane	ND	2.2	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.5	1.00	
1,2-Dibromoethane	ND	1.1	1.00	
Dibromomethane	ND	1.1	1.00	
1,2-Dichlorobenzene	ND	1.1	1.00	
1,3-Dichlorobenzene	ND	1.1	1.00	
1,4-Dichlorobenzene	ND	1.1	1.00	
Dichlorodifluoromethane	ND	2.2	1.00	
1,1-Dichloroethane	ND	1.1	1.00	
1,2-Dichloroethane	ND	1.1	1.00	
1,1-Dichloroethene	ND	1.1	1.00	
c-1,2-Dichloroethene	ND	1.1	1.00	
t-1,2-Dichloroethene	ND	1.1	1.00	
1,2-Dichloropropane	ND	1.1	1.00	
1,3-Dichloropropane	ND	1.1	1.00	
2,2-Dichloropropane	ND	5.5	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392.002

Date Received: 03/21/18
Work Order: 18-03-1780
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.2	1.00	
c-1,3-Dichloropropene	ND	1.1	1.00	
t-1,3-Dichloropropene	ND	2.2	1.00	
Ethylbenzene	ND	1.1	1.00	
2-Hexanone	ND	22	1.00	
Isopropylbenzene	ND	1.1	1.00	
p-Isopropyltoluene	ND	1.1	1.00	
Methylene Chloride	ND	11	1.00	
4-Methyl-2-Pentanone	ND	22	1.00	
Naphthalene	ND	11	1.00	
n-Propylbenzene	ND	2.2	1.00	
Styrene	ND	1.1	1.00	
1,1,1,2-Tetrachloroethane	ND	1.1	1.00	
1,1,2,2-Tetrachloroethane	ND	2.2	1.00	
Tetrachloroethene	1.9	1.1	1.00	
Toluene	ND	1.1	1.00	
1,2,3-Trichlorobenzene	ND	2.2	1.00	
1,2,4-Trichlorobenzene	ND	2.2	1.00	
1,1,1-Trichloroethane	ND	1.1	1.00	
1,1,2-Trichloroethane	ND	1.1	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	11	1.00	
Trichloroethene	ND	2.2	1.00	
Trichlorofluoromethane	ND	11	1.00	
1,2,3-Trichloropropane	ND	2.2	1.00	
1,2,4-Trimethylbenzene	ND	2.2	1.00	
1,3,5-Trimethylbenzene	ND	2.2	1.00	
Vinyl Acetate	ND	11	1.00	
Vinyl Chloride	ND	1.1	1.00	
p/m-Xylene	ND	2.2	1.00	
o-Xylene	ND	1.1	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.2	1.00	
Tert-Butyl Alcohol (TBA)	ND	22	1.00	
Diisopropyl Ether (DIPE)	ND	1.1	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.1	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.1	1.00	
Ethanol	ND	550	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	100	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/21/18
1920 Main Street, Suite 300	Work Order:	18-03-1780
Irvine, CA 92614-7279	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: Infineon / 0444392.002		Page 12 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	107	79-133	
1,2-Dichloroethane-d4	113	71-155	
Toluene-d8	101	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392.002

Date Received: 03/21/18
Work Order: 18-03-1780
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B1-3-80	**18-03-1780-5-C**	**03/21/18 10:05**	**Solid**	**GC/MS GGG**	**03/21/18**	**03/21/18 20:05**	**180321L019**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	59	1.00	
Benzene	ND	1.2	1.00	
Bromobenzene	ND	1.2	1.00	
Bromochloromethane	ND	2.4	1.00	
Bromodichloromethane	ND	1.2	1.00	
Bromoform	ND	5.9	1.00	
Bromomethane	ND	24	1.00	
2-Butanone	ND	24	1.00	
n-Butylbenzene	ND	1.2	1.00	
sec-Butylbenzene	ND	1.2	1.00	
tert-Butylbenzene	ND	1.2	1.00	
Carbon Disulfide	ND	12	1.00	
Carbon Tetrachloride	ND	1.2	1.00	
Chlorobenzene	ND	1.2	1.00	
Chloroethane	ND	2.4	1.00	
Chloroform	ND	1.2	1.00	
Chloromethane	ND	24	1.00	
2-Chlorotoluene	ND	1.2	1.00	
4-Chlorotoluene	ND	1.2	1.00	
Dibromochloromethane	ND	2.4	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.9	1.00	
1,2-Dibromoethane	ND	1.2	1.00	
Dibromomethane	ND	1.2	1.00	
1,2-Dichlorobenzene	ND	1.2	1.00	
1,3-Dichlorobenzene	ND	1.2	1.00	
1,4-Dichlorobenzene	ND	1.2	1.00	
Dichlorodifluoromethane	ND	2.4	1.00	
1,1-Dichloroethane	ND	1.2	1.00	
1,2-Dichloroethane	ND	1.2	1.00	
1,1-Dichloroethene	ND	1.2	1.00	
c-1,2-Dichloroethene	ND	1.2	1.00	
t-1,2-Dichloroethene	ND	1.2	1.00	
1,2-Dichloropropane	ND	1.2	1.00	
1,3-Dichloropropane	ND	1.2	1.00	
2,2-Dichloropropane	ND	5.9	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/21/18
1920 Main Street, Suite 300		Work Order:	18-03-1780
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392.002			Page 14 of 21

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.4	1.00	
c-1,3-Dichloropropene	ND	1.2	1.00	
t-1,3-Dichloropropene	ND	2.4	1.00	
Ethylbenzene	ND	1.2	1.00	
2-Hexanone	ND	24	1.00	
Isopropylbenzene	ND	1.2	1.00	
p-Isopropyltoluene	ND	1.2	1.00	
Methylene Chloride	ND	12	1.00	
4-Methyl-2-Pentanone	ND	24	1.00	
Naphthalene	ND	12	1.00	
n-Propylbenzene	ND	2.4	1.00	
Styrene	ND	1.2	1.00	
1,1,1,2-Tetrachloroethane	ND	1.2	1.00	
1,1,2,2-Tetrachloroethane	ND	2.4	1.00	
Tetrachloroethene	ND	1.2	1.00	
Toluene	ND	1.2	1.00	
1,2,3-Trichlorobenzene	ND	2.4	1.00	
1,2,4-Trichlorobenzene	ND	2.4	1.00	
1,1,1-Trichloroethane	ND	1.2	1.00	
1,1,2-Trichloroethane	ND	1.2	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	12	1.00	
Trichloroethene	ND	2.4	1.00	
Trichlorofluoromethane	ND	12	1.00	
1,2,3-Trichloropropane	ND	2.4	1.00	
1,2,4-Trimethylbenzene	ND	2.4	1.00	
1,3,5-Trimethylbenzene	ND	2.4	1.00	
Vinyl Acetate	ND	12	1.00	
Vinyl Chloride	ND	1.2	1.00	
p/m-Xylene	ND	2.4	1.00	
o-Xylene	ND	1.2	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.4	1.00	
Tert-Butyl Alcohol (TBA)	ND	24	1.00	
Diisopropyl Ether (DIPE)	ND	1.2	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.2	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.2	1.00	
Ethanol	ND	590	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	97	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/21/18
1920 Main Street, Suite 300	Work Order:	18-03-1780
Irvine, CA 92614-7279	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: Infineon / 0444392.002		Page 15 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	108	79-133	
1,2-Dichloroethane-d4	108	71-155	
Toluene-d8	100	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/21/18
Work Order: 18-03-1780
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Project: Infineon / 0444392.002

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B1-13-54	**18-03-1780-6-C**	**03/21/18 00:00**	**Solid**	**GC/MS GGG**	**03/21/18**	**03/21/18 20:33**	**180321L019**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	54	1.00	
Benzene	ND	1.1	1.00	
Bromobenzene	ND	1.1	1.00	
Bromochloromethane	ND	2.2	1.00	
Bromodichloromethane	ND	1.1	1.00	
Bromoform	ND	5.4	1.00	
Bromomethane	ND	22	1.00	
2-Butanone	ND	22	1.00	
n-Butylbenzene	ND	1.1	1.00	
sec-Butylbenzene	ND	1.1	1.00	
tert-Butylbenzene	ND	1.1	1.00	
Carbon Disulfide	ND	11	1.00	
Carbon Tetrachloride	ND	1.1	1.00	
Chlorobenzene	ND	1.1	1.00	
Chloroethane	ND	2.2	1.00	
Chloroform	ND	1.1	1.00	
Chloromethane	ND	22	1.00	
2-Chlorotoluene	ND	1.1	1.00	
4-Chlorotoluene	ND	1.1	1.00	
Dibromochloromethane	ND	2.2	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.4	1.00	
1,2-Dibromoethane	ND	1.1	1.00	
Dibromomethane	ND	1.1	1.00	
1,2-Dichlorobenzene	ND	1.1	1.00	
1,3-Dichlorobenzene	ND	1.1	1.00	
1,4-Dichlorobenzene	ND	1.1	1.00	
Dichlorodifluoromethane	ND	2.2	1.00	
1,1-Dichloroethane	ND	1.1	1.00	
1,2-Dichloroethane	ND	1.1	1.00	
1,1-Dichloroethene	ND	1.1	1.00	
c-1,2-Dichloroethene	ND	1.1	1.00	
t-1,2-Dichloroethene	ND	1.1	1.00	
1,2-Dichloropropane	ND	1.1	1.00	
1,3-Dichloropropane	ND	1.1	1.00	
2,2-Dichloropropane	ND	5.4	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/21/18
1920 Main Street, Suite 300		Work Order:	18-03-1780
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392.002			Page 17 of 21

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.2	1.00	
c-1,3-Dichloropropene	ND	1.1	1.00	
t-1,3-Dichloropropene	ND	2.2	1.00	
Ethylbenzene	ND	1.1	1.00	
2-Hexanone	ND	22	1.00	
Isopropylbenzene	ND	1.1	1.00	
p-Isopropyltoluene	ND	1.1	1.00	
Methylene Chloride	ND	11	1.00	
4-Methyl-2-Pentanone	ND	22	1.00	
Naphthalene	ND	11	1.00	
n-Propylbenzene	ND	2.2	1.00	
Styrene	ND	1.1	1.00	
1,1,1,2-Tetrachloroethane	ND	1.1	1.00	
1,1,2,2-Tetrachloroethane	ND	2.2	1.00	
Tetrachloroethene	ND	1.1	1.00	
Toluene	ND	1.1	1.00	
1,2,3-Trichlorobenzene	ND	2.2	1.00	
1,2,4-Trichlorobenzene	ND	2.2	1.00	
1,1,1-Trichloroethane	ND	1.1	1.00	
1,1,2-Trichloroethane	ND	1.1	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	11	1.00	
Trichloroethene	ND	2.2	1.00	
Trichlorofluoromethane	ND	11	1.00	
1,2,3-Trichloropropane	ND	2.2	1.00	
1,2,4-Trimethylbenzene	ND	2.2	1.00	
1,3,5-Trimethylbenzene	ND	2.2	1.00	
Vinyl Acetate	ND	11	1.00	
Vinyl Chloride	ND	1.1	1.00	
p/m-Xylene	ND	2.2	1.00	
o-Xylene	ND	1.1	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.2	1.00	
Tert-Butyl Alcohol (TBA)	ND	22	1.00	
Diisopropyl Ether (DIPE)	ND	1.1	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.1	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.1	1.00	
Ethanol	ND	540	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	97	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/21/18
1920 Main Street, Suite 300	Work Order:	18-03-1780
Irvine, CA 92614-7279	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: Infineon / 0444392.002		Page 18 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	108	79-133	
1,2-Dichloroethane-d4	111	71-155	
Toluene-d8	101	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392.002

Date Received:	03/21/18
Work Order:	18-03-1780
Preparation:	EPA 5035
Method:	EPA 8260B
Units:	ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**095-01-025-29792**	**N/A**	**Solid**	**GC/MS GGG**	**03/21/18**	**03/21/18 16:44**	**180321L019**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	50	1.00	
Benzene	ND	1.0	1.00	
Bromobenzene	ND	1.0	1.00	
Bromochloromethane	ND	2.0	1.00	
Bromodichloromethane	ND	1.0	1.00	
Bromoform	ND	5.0	1.00	
Bromomethane	ND	20	1.00	
2-Butanone	ND	20	1.00	
n-Butylbenzene	ND	1.0	1.00	
sec-Butylbenzene	ND	1.0	1.00	
tert-Butylbenzene	ND	1.0	1.00	
Carbon Disulfide	ND	10	1.00	
Carbon Tetrachloride	ND	1.0	1.00	
Chlorobenzene	ND	1.0	1.00	
Chloroethane	ND	2.0	1.00	
Chloroform	ND	1.0	1.00	
Chloromethane	ND	20	1.00	
2-Chlorotoluene	ND	1.0	1.00	
4-Chlorotoluene	ND	1.0	1.00	
Dibromochloromethane	ND	2.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.0	1.00	
1,2-Dibromoethane	ND	1.0	1.00	
Dibromomethane	ND	1.0	1.00	
1,2-Dichlorobenzene	ND	1.0	1.00	
1,3-Dichlorobenzene	ND	1.0	1.00	
1,4-Dichlorobenzene	ND	1.0	1.00	
Dichlorodifluoromethane	ND	2.0	1.00	
1,1-Dichloroethane	ND	1.0	1.00	
1,2-Dichloroethane	ND	1.0	1.00	
1,1-Dichloroethene	ND	1.0	1.00	
c-1,2-Dichloroethene	ND	1.0	1.00	
t-1,2-Dichloroethene	ND	1.0	1.00	
1,2-Dichloropropane	ND	1.0	1.00	
1,3-Dichloropropane	ND	1.0	1.00	
2,2-Dichloropropane	ND	5.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392.002

Date Received: 03/21/18
Work Order: 18-03-1780
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.0	1.00	
c-1,3-Dichloropropene	ND	1.0	1.00	
t-1,3-Dichloropropene	ND	2.0	1.00	
Ethylbenzene	ND	1.0	1.00	
2-Hexanone	ND	20	1.00	
Isopropylbenzene	ND	1.0	1.00	
p-Isopropyltoluene	ND	1.0	1.00	
Methylene Chloride	ND	10	1.00	
4-Methyl-2-Pentanone	ND	20	1.00	
Naphthalene	ND	10	1.00	
n-Propylbenzene	ND	2.0	1.00	
Styrene	ND	1.0	1.00	
1,1,1,2-Tetrachloroethane	ND	1.0	1.00	
1,1,2,2-Tetrachloroethane	ND	2.0	1.00	
Tetrachloroethene	ND	1.0	1.00	
Toluene	ND	1.0	1.00	
1,2,3-Trichlorobenzene	ND	2.0	1.00	
1,2,4-Trichlorobenzene	ND	2.0	1.00	
1,1,1-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.00	
Trichloroethene	ND	2.0	1.00	
Trichlorofluoromethane	ND	10	1.00	
1,2,3-Trichloropropane	ND	2.0	1.00	
1,2,4-Trimethylbenzene	ND	2.0	1.00	
1,3,5-Trimethylbenzene	ND	2.0	1.00	
Vinyl Acetate	ND	10	1.00	
Vinyl Chloride	ND	1.0	1.00	
p/m-Xylene	ND	2.0	1.00	
o-Xylene	ND	1.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.0	1.00	
Tert-Butyl Alcohol (TBA)	ND	20	1.00	
Diisopropyl Ether (DIPE)	ND	1.0	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.0	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.0	1.00	
Ethanol	ND	500	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	98	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/21/18
1920 Main Street, Suite 300	Work Order:	18-03-1780
Irvine, CA 92614-7279	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: Infineon / 0444392.002		Page 21 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	104	79-133	
1,2-Dichloroethane-d4	104	71-155	
Toluene-d8	100	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Quality Control - LCS/LCSD

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392.002

Date Received: 03/21/18
Work Order: 18-03-1780
Preparation: EPA 5030C
Method: EPA 8260B

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-14-001-25463	**LCS**	**Aqueous**	**GC/MS RR**	**03/21/18**	**03/21/18 15:59**	**180321L023**
099-14-001-25463	**LCSD**	**Aqueous**	**GC/MS RR**	**03/21/18**	**03/21/18 16:30**	**180321L023**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Acetone	50.00	43.68	87	48.99	98	53-137	39-151	11	0-21	
Benzene	50.00	51.55	103	49.63	99	79-121	72-128	4	0-20	
Bromobenzene	50.00	53.09	106	51.91	104	80-120	73-127	2	0-20	
Bromochloromethane	50.00	51.59	103	50.41	101	80-122	73-129	2	0-20	
Bromodichloromethane	50.00	53.73	107	52.68	105	80-124	73-131	2	0-20	
Bromoform	50.00	50.22	100	49.65	99	73-127	64-136	1	0-20	
Bromomethane	50.00	23.39	47	22.85	46	50-150	33-167	2	0-26	ME
2-Butanone	50.00	51.15	102	53.14	106	60-126	49-137	4	0-20	
n-Butylbenzene	50.00	54.46	109	52.85	106	72-138	61-149	3	0-20	
sec-Butylbenzene	50.00	54.07	108	51.91	104	77-131	68-140	4	0-20	
tert-Butylbenzene	50.00	53.09	106	51.36	103	80-125	72-132	3	0-20	
Carbon Disulfide	50.00	51.20	102	48.39	97	50-150	33-167	6	0-22	
Carbon Tetrachloride	50.00	55.47	111	53.60	107	65-143	52-156	3	0-20	
Chlorobenzene	50.00	51.66	103	49.84	100	80-120	73-127	4	0-20	
Chloroethane	50.00	53.90	108	51.09	102	62-128	51-139	5	0-20	
Chloroform	50.00	54.04	108	52.22	104	80-120	73-127	3	0-20	
Chloromethane	50.00	40.79	82	38.68	77	43-133	28-148	5	0-20	
2-Chlorotoluene	50.00	53.99	108	53.14	106	80-121	73-128	2	0-20	
4-Chlorotoluene	50.00	53.12	106	51.26	103	80-120	73-127	4	0-20	
Dibromochloromethane	50.00	51.89	104	51.04	102	80-123	73-130	2	0-20	
1,2-Dibromo-3-Chloropropane	50.00	50.29	101	50.38	101	66-126	56-136	0	0-20	
1,2-Dibromoethane	50.00	52.98	106	52.53	105	80-120	73-127	1	0-20	
Dibromomethane	50.00	53.18	106	52.18	104	80-120	73-127	2	0-20	
1,2-Dichlorobenzene	50.00	52.11	104	50.90	102	80-120	73-127	2	0-20	
1,3-Dichlorobenzene	50.00	52.13	104	50.93	102	80-120	73-127	2	0-20	
1,4-Dichlorobenzene	50.00	50.90	102	49.68	99	80-120	73-127	2	0-20	
Dichlorodifluoromethane	50.00	50.81	102	49.49	99	50-150	33-167	3	0-30	
1,1-Dichloroethane	50.00	54.26	109	52.03	104	72-126	63-135	4	0-20	
1,2-Dichloroethane	50.00	52.46	105	51.47	103	76-120	69-127	2	0-20	
1,1-Dichloroethene	50.00	52.09	104	50.44	101	66-132	55-143	3	0-20	
c-1,2-Dichloroethene	50.00	52.29	105	50.42	101	78-120	71-127	4	0-20	
t-1,2-Dichloroethene	50.00	52.48	105	49.88	100	66-132	55-143	5	0-20	
1,2-Dichloropropane	50.00	53.54	107	52.15	104	80-120	73-127	3	0-20	
1,3-Dichloropropane	50.00	51.95	104	50.68	101	80-120	73-127	2	0-20	
2,2-Dichloropropane	50.00	54.20	108	49.96	100	50-150	33-167	8	0-20	
1,1-Dichloropropene	50.00	52.67	105	50.22	100	75-123	67-131	5	0-20	

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS/LCSD

ERM-WEST		Date Received:	03/21/18
1920 Main Street, Suite 300		Work Order:	18-03-1780
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
Project: Infineon / 0444392.002			Page 2 of 4

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
c-1,3-Dichloropropene	50.00	53.45	107	51.84	104	77-131	68-140	3	0-20	
t-1,3-Dichloropropene	50.00	52.10	104	51.22	102	76-136	66-146	2	0-20	
Ethylbenzene	50.00	54.55	109	52.47	105	80-120	73-127	4	0-20	
2-Hexanone	50.00	50.24	100	50.90	102	63-123	53-133	1	0-20	
Isopropylbenzene	50.00	54.14	108	52.32	105	80-128	72-136	3	0-20	
p-Isopropyltoluene	50.00	54.29	109	52.43	105	73-133	63-143	3	0-20	
Methylene Chloride	50.00	53.80	108	52.49	105	61-133	49-145	2	0-27	
4-Methyl-2-Pentanone	50.00	52.24	104	51.79	104	65-125	55-135	1	0-20	
Naphthalene	50.00	52.74	105	52.26	105	69-129	59-139	1	0-20	
n-Propylbenzene	50.00	54.80	110	53.29	107	80-128	72-136	3	0-20	
Styrene	50.00	55.12	110	53.74	107	80-126	72-134	3	0-20	
1,1,1,2-Tetrachloroethane	50.00	51.95	104	50.69	101	80-129	72-137	2	0-20	
1,1,2,2-Tetrachloroethane	50.00	51.32	103	50.63	101	74-122	66-130	1	0-20	
Tetrachloroethene	50.00	47.66	95	50.01	100	55-139	41-153	5	0-23	
Toluene	50.00	53.27	107	51.30	103	80-120	73-127	4	0-20	
1,2,3-Trichlorobenzene	50.00	52.58	105	51.58	103	72-132	62-142	2	0-20	
1,2,4-Trichlorobenzene	50.00	50.38	101	49.47	99	74-134	64-144	2	0-20	
1,1,1-Trichloroethane	50.00	53.06	106	50.93	102	76-124	68-132	4	0-20	
1,1,2-Trichloro-1,2,2-Trifluoroethane	50.00	53.11	106	51.23	102	54-150	38-166	4	0-30	
1,1,2-Trichloroethane	50.00	52.12	104	51.42	103	80-120	73-127	1	0-20	
Trichloroethene	50.00	53.57	107	51.28	103	79-121	72-128	4	0-20	
Trichlorofluoromethane	50.00	53.10	106	51.65	103	72-132	62-142	3	0-20	
1,2,3-Trichloropropane	50.00	51.90	104	51.61	103	75-123	67-131	1	0-20	
1,2,4-Trimethylbenzene	50.00	54.86	110	53.19	106	74-128	65-137	3	0-20	
1,3,5-Trimethylbenzene	50.00	55.14	110	53.47	107	77-131	68-140	3	0-20	
Vinyl Acetate	50.00	52.24	104	50.94	102	50-150	33-167	3	0-20	
Vinyl Chloride	50.00	51.73	103	50.11	100	63-129	52-140	3	0-20	
p/m-Xylene	100.0	110.3	110	106.5	106	80-122	73-129	4	0-20	
o-Xylene	50.00	55.89	112	53.87	108	80-128	72-136	4	0-20	
Methyl-t-Butyl Ether (MTBE)	50.00	51.96	104	51.66	103	69-123	60-132	1	0-20	
Tert-Butyl Alcohol (TBA)	250.0	256.6	103	256.2	102	80-124	73-131	0	0-20	
Diisopropyl Ether (DIPE)	50.00	54.43	109	53.35	107	79-121	72-128	2	0-20	
Ethyl-t-Butyl Ether (ETBE)	50.00	53.26	107	52.32	105	71-125	62-134	2	0-20	
Tert-Amyl-Methyl Ether (TAME)	50.00	53.43	107	52.58	105	70-124	61-133	2	0-20	
Ethanol	500.0	525.8	105	543.8	109	53-149	37-165	3	0-24	

Total number of LCS compounds: 71
Total number of ME compounds: 1

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS/LCSD

ERM-WEST	Date Received:	03/21/18
1920 Main Street, Suite 300	Work Order:	18-03-1780
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
Project: Infineon / 0444392.002		Page 3 of 4

Total number of ME compounds allowed: 4
LCS ME CL validation result: Pass

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS/LCSD

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392.002

Date Received: 03/21/18
Work Order: 18-03-1780
Preparation: EPA 5035
Method: EPA 8260B

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
095-01-025-29792	**LCS**	**Solid**	**GC/MS GGG**	**03/21/18**	**03/21/18 15:19**	**180321L019**
095-01-025-29792	**LCSD**	**Solid**	**GC/MS GGG**	**03/21/18**	**03/21/18 15:47**	**180321L019**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Benzene	50.00	46.21	92	47.06	94	80-120	73-127	2	0-20	
Carbon Tetrachloride	50.00	51.50	103	53.44	107	65-137	53-149	4	0-20	
Chlorobenzene	50.00	47.84	96	48.29	97	80-120	73-127	1	0-20	
1,2-Dibromoethane	50.00	48.18	96	47.30	95	80-120	73-127	2	0-20	
1,2-Dichlorobenzene	50.00	47.71	95	48.91	98	80-120	73-127	2	0-20	
1,2-Dichloroethane	50.00	50.68	101	50.84	102	80-120	73-127	0	0-20	
1,1-Dichloroethene	50.00	51.76	104	53.56	107	68-128	58-138	3	0-20	
Ethylbenzene	50.00	49.18	98	50.09	100	80-120	73-127	2	0-20	
Toluene	50.00	47.52	95	48.86	98	80-120	73-127	3	0-20	
Trichloroethene	50.00	50.01	100	50.53	101	80-120	73-127	1	0-20	
Vinyl Chloride	50.00	67.37	135	72.10	144	67-127	57-137	7	0-20	ME,X
p/m-Xylene	100.0	98.05	98	100.7	101	75-125	67-133	3	0-25	
o-Xylene	50.00	49.83	100	50.19	100	75-125	67-133	1	0-25	
Methyl-t-Butyl Ether (MTBE)	50.00	52.19	104	52.10	104	70-124	61-133	0	0-20	
Tert-Butyl Alcohol (TBA)	250.0	237.9	95	243.7	97	73-121	65-129	2	0-20	
Diisopropyl Ether (DIPE)	50.00	52.92	106	53.48	107	69-129	59-139	1	0-20	
Ethyl-t-Butyl Ether (ETBE)	50.00	53.58	107	53.46	107	70-124	61-133	0	0-20	
Tert-Amyl-Methyl Ether (TAME)	50.00	49.66	99	49.20	98	74-122	66-130	1	0-20	
Ethanol	500.0	431.7	86	434.4	87	51-135	37-149	1	0-27	

Total number of LCS compounds: 19
Total number of ME compounds: 1
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

RPD: Relative Percent Difference. CL: Control Limits

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Sample Analysis Summary Report

Work Order: 18-03-1780 Page 1 of 1

Method	Extraction	Chemist ID	Instrument	Analytical Location
EPA 8260B	EPA 5035	1126	GC/MS GGG	2
EPA 8260B	EPA 5030C	1126	GC/MS RR	2

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Glossary of Terms and Qualifiers

Work Order: 18-03-1780 Page 1 of 1

Qualifiers	Definition
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
CI	See case narrative.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.
	Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.
	Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.
	A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

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For courier service / sample drop off information, contact us26_sales@eurofinsus.com or call us.

CHAIN-OF-CUSTODY RECORD

Date 03/21/2018
Page 1 of 1

WO NO. / LAB USE ONLY
18-03-1780

LABORATORY CLIENT: ERM
ADDRESS: 1920 Main Street - Suite 300
CITY: Irvine STATE: CA ZIP: 92614
TEL: 949-623-4700 E-MAIL: See special Instructions

CLIENT PROJECT NAME / NO.: INFINEON
P.O. NO.: 0444392-002
PROJECT CONTACT: Maggie Tymkow
LAB CONTACT OR QUOTE NO: Virendra Patel
GLOBAL ID:
LOG CODE:
SAMPLER(S): (PRINT) Manuel Leon

TURNAROUND TIME (Rush surcharges may apply to any TAT not "STANDARD"):
☐ SAME DAY ☒ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAYS ☐ STANDARD

EDD
☐ COELT EDF ☐ OTHER

SPECIAL INSTRUCTIONS: EQUIS

Email to = maggie.tymkow@erm.com
= Stewart.emhof@erm.com
= Brad.cross@erm.com
= Tony.Parenteau@erm.com

REQUESTED ANALYSES
Please check box or fill in blank as needed.

LAB USE ONLY	SAMPLE ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.
1	B1-3-4	3/21/18	0747	Soil	1 Kit
2	B1-3-17	3/21/18	0857	Soil	1 Kit
3	B1-3-29	3/21/18	0906	Soil	1 Kit
4	B1-3-54	3/21/18	0917	Soil	1 Kit
5	~~B1-3-80~~ ML 3/21/18 1305				
6	B1-3-80	3/21/18	1005	Soil	1 Kit
7	B1-13-54	3/21/18	—	Soil	1 Kit
8	Trip Blk			Water	2
3/21/18		ML 3/21/18	- 1205		

Unpreserved / Preserved / Field Filtered

VOCs (8260) ✓ | Oxygenates (8260) | Prep (5035) ☐ En Core ☒ Terra Core | SVOCs (8270) | Pesticides (8081) | PCBs (8082) | PAHs ☐ 8270 ☐ 8270 SIM | T22 Metals ☐ 6010/747X ☐ 6020/747X | Cr(VI) ☐ 7196 ☐ 7199 ☐ 218.6

TPH(g) ☐ GRO | TPH(d) ☐ DRO | TPH ☐ C6-C36 ☐ C6-C44 | TPH ____ | BTEX / MTBE ☐ 8260 ☐ ____

Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
Manuel Leon 3/21/18 - 1410			
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date: 3/21/18	Time: 1415
Jeff Chandler	tc		
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date: 3/21/18	Time: 1655
		Date:	Time:

2016-04-01-Revision

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WORK ORDER NUMBER: 18-03-1980

SAMPLE RECEIPT CHECKLIST

COOLER 1 OF 1

CLIENT: ERM

DATE: 03/21/2018

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)

Thermometer ID: SC6 (CF: +0.2°C); Temperature (w/o CF): 2.0 °C (w/ CF): 2.2 °C; ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____)

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling

☐ Sample(s) received at ambient temperature; placed on ice for transport by courier

Ambient Temperature: ☐ Air ☐ Filter Checked by: 1091

CUSTODY SEAL:

Cooler ☐ Present and Intact ☐ Present but Not Intact ☑ Not Present ☐ N/A Checked by: 1091

Sample(s) ☐ Present and Intact ☐ Present but Not Intact ☑ Not Present ☐ N/A Checked by: 802

SAMPLE CONDITION:	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☑	☐
☑ Sampling date (-7) ☑ Sampling time ☐ Matrix ☐ Number of containers	350 3/22/18		
☐ No analysis requested ☐ Not relinquished ☐ No relinquished date ☐ No relinquished time			
Sampler's name indicated on COC	☑	☐	☐
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and in good condition	☑	☐	☐
Proper containers for analyses requested	☑	☐	☐
Sufficient volume/mass for analyses requested	☑	☐	☐
Samples received within holding time	☑	☐	☐
Aqueous samples for certain analyses received within 15-minute holding time			
☐ pH ☐ Residual Chlorine ☐ Dissolved Sulfide ☐ Dissolved Oxygen	☐	☐	☑
Proper preservation chemical(s) noted on COC and/or sample container	☑	☐	☐
Unpreserved aqueous sample(s) received for certain analyses			
☐ Volatile Organics ☐ Total Metals ☐ Dissolved Metals			
Acid/base preserved samples - pH within acceptable range	☐	☐	☑
Container(s) for certain analysis free of headspace	☑	☐	☑ 3/21/18
☑ Volatile Organics ☐ Dissolved Gases (RSK-175) ☐ Dissolved Oxygen (SM 4500)			
☐ Carbon Dioxide (SM 4500) ☐ Ferrous Iron (SM 3500) ☐ Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE: (Trip Blank Lot Number: 180219C)

Aqueous: ☐ VOA (2) ☑ VOAh ☐ VOA**na$_2$** ☐ 100PJ ☐ 100PJ**na$_2$** ☐ 125AGB ☐ 125AGBh ☐ 125AGB**p** ☐ 125PB ☐ 125PB**znna** (pH__9)

☐ 250AGB ☐ 250CGB ☐ 250CGB**s** (pH__2) ☐ 250PB ☐ 250PB**n** (pH__2) ☐ 500AGB ☐ 500AGJ ☐ 500AGJ**s** (pH__2) ☐ 500PB

☐ 1AGB ☐ 1AGB**na$_2$** ☐ 1AGB**s** (pH__2) ☐ 1AGB**s** (O&G) ☐ 1PB ☐ 1PB**na** (pH__12) ☐ _____ ☐ _____ ☐ _____

Solid: ☐ 4ozCGJ ☐ 8ozCGJ ☐ 16ozCGJ ☐ Sleeve (___) ☐ EnCores® (___) ☑ TerraCores® (3) 2oz PJ ☐ _____ ☐ _____

Air: ☐ Tedlar™ ☐ Canister ☐ Sorbent Tube ☐ PUF ☐ _____ **Other Matrix** (_____): ☐ _____ ☐ _____ ☐ _____

Container: **A** = Amber, **B** = Bottle, **C** = Clear, **E** = Envelope, **G** = Glass, **J** = Jar, **P** = Plastic, and **Z** = Ziploc/Resealable Bag

Preservative: **b** = buffered, **f** = filtered, **h** = HCl, **n** = HNO_3, **na** = NaOH, **na$_2$** = $Na_2S_2O_3$, **p** = H_3PO_4, **s** = H_2SO_4, **u** = ultra-pure, **x** = Na_2SO_3+$NaHSO_4.H_2O$, **znna** = Zn $(CH_3CO_2)_2$ + NaOH

Labeled/Checked by: SR

Reviewed by: 350

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WORK ORDER NUMBER: 18-03-1986

The difference is service

AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: ERM-WEST

Client Project Name: Infineon / 0444392.002

Attention: Maggie Tymkow
1920 Main Street
Suite 300
Irvine, CA 92614-7279

Approved for release on 03/23/2018 by:
Virendra Patel
Project Manager

ResultLink

Email your PM

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Client Project Name: Infineon / 0444392.002
Work Order Number: 18-03-1986

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Work Order Narrative

Work Order: 18-03-1986 Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 03/22/18. They were assigned to Work Order 18-03-1986.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

DoD Projects:

The test results contained in this report are accredited under the laboratory's ISO/IEC 17025:2005 and DoD-ELAP accreditation issued by the ANSI-ASQ National Accreditation Board. Refer to certificate and scope of accreditation ADE-1864.

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Sample Summary

Client:	ERM-WEST	Work Order:	18-03-1986
	1920 Main Street, Suite 300	Project Name:	Infineon / 0444392.002
	Irvine, CA 92614-7279	PO Number:	0444392.002
		Date/Time Received:	03/22/18 17:10
		Number of Containers:	22
Attn:	Maggie Tymkow		

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
B1-4-13	18-03-1986-1	03/22/18 08:20	4	Solid
B1-4-22	18-03-1986-2	03/22/18 08:28	4	Solid
B1-4-32	18-03-1986-3	03/22/18 08:37	4	Solid
B1-4-48	18-03-1986-4	03/22/18 08:50	4	Solid
B1-4-80	18-03-1986-5	03/22/18 10:05	4	Solid
Trip Blk	18-03-1986-6	03/22/18 00:00	2	Aqueous

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/22/18
Work Order: 18-03-1986
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

Project: Infineon / 0444392.002

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Trip Blk	**18-03-1986-6-A**	**03/22/18 00:00**	**Aqueous**	**GC/MS V V**	**03/22/18**	**03/22/18 19:38**	**180322L022**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	20	1.00	
Benzene	ND	0.50	1.00	
Bromobenzene	ND	1.0	1.00	
Bromochloromethane	ND	1.0	1.00	
Bromodichloromethane	ND	1.0	1.00	
Bromoform	ND	1.0	1.00	
Bromomethane	ND	10	1.00	
2-Butanone	ND	10	1.00	
n-Butylbenzene	ND	1.0	1.00	
sec-Butylbenzene	ND	1.0	1.00	
tert-Butylbenzene	ND	1.0	1.00	
Carbon Disulfide	ND	10	1.00	
Carbon Tetrachloride	ND	0.50	1.00	
Chlorobenzene	ND	1.0	1.00	
Chloroethane	ND	5.0	1.00	
Chloroform	ND	1.0	1.00	
Chloromethane	ND	10	1.00	
2-Chlorotoluene	ND	1.0	1.00	
4-Chlorotoluene	ND	1.0	1.00	
Dibromochloromethane	ND	1.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.0	1.00	
1,2-Dibromoethane	ND	1.0	1.00	
Dibromomethane	ND	1.0	1.00	
1,2-Dichlorobenzene	ND	1.0	1.00	
1,3-Dichlorobenzene	ND	1.0	1.00	
1,4-Dichlorobenzene	ND	1.0	1.00	
Dichlorodifluoromethane	ND	1.0	1.00	
1,1-Dichloroethane	ND	1.0	1.00	
1,2-Dichloroethane	ND	0.50	1.00	
1,1-Dichloroethene	ND	1.0	1.00	
c-1,2-Dichloroethene	ND	1.0	1.00	
t-1,2-Dichloroethene	ND	1.0	1.00	
1,2-Dichloropropane	ND	1.0	1.00	
1,3-Dichloropropane	ND	1.0	1.00	
2,2-Dichloropropane	ND	1.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392.002

Date Received: 03/22/18
Work Order: 18-03-1986
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	1.0	1.00	
c-1,3-Dichloropropene	ND	0.50	1.00	
t-1,3-Dichloropropene	ND	0.50	1.00	
Ethylbenzene	ND	1.0	1.00	
2-Hexanone	ND	10	1.00	
Isopropylbenzene	ND	1.0	1.00	
p-Isopropyltoluene	ND	1.0	1.00	
Methylene Chloride	ND	10	1.00	
4-Methyl-2-Pentanone	ND	10	1.00	
Naphthalene	ND	10	1.00	
n-Propylbenzene	ND	1.0	1.00	
Styrene	ND	1.0	1.00	
1,1,1,2-Tetrachloroethane	ND	1.0	1.00	
1,1,2,2-Tetrachloroethane	ND	1.0	1.00	
Tetrachloroethene	ND	1.0	1.00	
Toluene	ND	1.0	1.00	
1,2,3-Trichlorobenzene	ND	1.0	1.00	
1,2,4-Trichlorobenzene	ND	1.0	1.00	
1,1,1-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.00	
1,1,2-Trichloroethane	ND	1.0	1.00	
Trichloroethene	ND	1.0	1.00	
Trichlorofluoromethane	ND	10	1.00	
1,2,3-Trichloropropane	ND	5.0	1.00	
1,2,4-Trimethylbenzene	ND	1.0	1.00	
1,3,5-Trimethylbenzene	ND	1.0	1.00	
Vinyl Acetate	ND	10	1.00	
Vinyl Chloride	ND	0.50	1.00	
p/m-Xylene	ND	1.0	1.00	
o-Xylene	ND	1.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	1.0	1.00	
Tert-Butyl Alcohol (TBA)	ND	10	1.00	
Diisopropyl Ether (DIPE)	ND	2.0	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	2.0	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	2.0	1.00	
Ethanol	ND	100	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	92	77-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/22/18
1920 Main Street, Suite 300	Work Order:	18-03-1986
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/L
Project: Infineon / 0444392.002		Page 3 of 6

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	104	80-128	
1,2-Dichloroethane-d4	103	80-129	
Toluene-d8	96	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/22/18
Work Order: 18-03-1986
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

Project: Infineon / 0444392.002

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-14-001-25471**	**N/A**	**Aqueous**	**GC/MS V V**	**03/22/18**	**03/22/18 16:46**	**180322L022**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	20	1.00	
Benzene	ND	0.50	1.00	
Bromobenzene	ND	1.0	1.00	
Bromochloromethane	ND	1.0	1.00	
Bromodichloromethane	ND	1.0	1.00	
Bromoform	ND	1.0	1.00	
Bromomethane	ND	10	1.00	
2-Butanone	ND	10	1.00	
n-Butylbenzene	ND	1.0	1.00	
sec-Butylbenzene	ND	1.0	1.00	
tert-Butylbenzene	ND	1.0	1.00	
Carbon Disulfide	ND	10	1.00	
Carbon Tetrachloride	ND	0.50	1.00	
Chlorobenzene	ND	1.0	1.00	
Chloroethane	ND	5.0	1.00	
Chloroform	ND	1.0	1.00	
Chloromethane	ND	10	1.00	
2-Chlorotoluene	ND	1.0	1.00	
4-Chlorotoluene	ND	1.0	1.00	
Dibromochloromethane	ND	1.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.0	1.00	
1,2-Dibromoethane	ND	1.0	1.00	
Dibromomethane	ND	1.0	1.00	
1,2-Dichlorobenzene	ND	1.0	1.00	
1,3-Dichlorobenzene	ND	1.0	1.00	
1,4-Dichlorobenzene	ND	1.0	1.00	
Dichlorodifluoromethane	ND	1.0	1.00	
1,1-Dichloroethane	ND	1.0	1.00	
1,2-Dichloroethane	ND	0.50	1.00	
1,1-Dichloroethene	ND	1.0	1.00	
c-1,2-Dichloroethene	ND	1.0	1.00	
t-1,2-Dichloroethene	ND	1.0	1.00	
1,2-Dichloropropane	ND	1.0	1.00	
1,3-Dichloropropane	ND	1.0	1.00	
2,2-Dichloropropane	ND	1.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/22/18
1920 Main Street, Suite 300	Work Order:	18-03-1986
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/L
Project: Infineon / 0444392.002		Page 5 of 6

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	1.0	1.00	
c-1,3-Dichloropropene	ND	0.50	1.00	
t-1,3-Dichloropropene	ND	0.50	1.00	
Ethylbenzene	ND	1.0	1.00	
2-Hexanone	ND	10	1.00	
Isopropylbenzene	ND	1.0	1.00	
p-Isopropyltoluene	ND	1.0	1.00	
Methylene Chloride	ND	10	1.00	
4-Methyl-2-Pentanone	ND	10	1.00	
Naphthalene	ND	10	1.00	
n-Propylbenzene	ND	1.0	1.00	
Styrene	ND	1.0	1.00	
1,1,1,2-Tetrachloroethane	ND	1.0	1.00	
1,1,2,2-Tetrachloroethane	ND	1.0	1.00	
Tetrachloroethene	ND	1.0	1.00	
Toluene	ND	1.0	1.00	
1,2,3-Trichlorobenzene	ND	1.0	1.00	
1,2,4-Trichlorobenzene	ND	1.0	1.00	
1,1,1-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.00	
1,1,2-Trichloroethane	ND	1.0	1.00	
Trichloroethene	ND	1.0	1.00	
Trichlorofluoromethane	ND	10	1.00	
1,2,3-Trichloropropane	ND	5.0	1.00	
1,2,4-Trimethylbenzene	ND	1.0	1.00	
1,3,5-Trimethylbenzene	ND	1.0	1.00	
Vinyl Acetate	ND	10	1.00	
Vinyl Chloride	ND	0.50	1.00	
p/m-Xylene	ND	1.0	1.00	
o-Xylene	ND	1.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	1.0	1.00	
Tert-Butyl Alcohol (TBA)	ND	10	1.00	
Diisopropyl Ether (DIPE)	ND	2.0	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	2.0	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	2.0	1.00	
Ethanol	ND	100	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	93	77-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/22/18
1920 Main Street, Suite 300	Work Order:	18-03-1986
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/L
Project: Infineon / 0444392.002		Page 6 of 6

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	103	80-128	
1,2-Dichloroethane-d4	103	80-129	
Toluene-d8	97	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392.002

Date Received: 03/22/18
Work Order: 18-03-1986
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B1-4-13	**18-03-1986-1-C**	**03/22/18 08:20**	**Solid**	**GC/MS OO**	**03/22/18**	**03/22/18 19:17**	**180322L028**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	48	1.00	
Benzene	ND	0.96	1.00	
Bromobenzene	ND	0.96	1.00	
Bromochloromethane	ND	1.9	1.00	
Bromodichloromethane	ND	0.96	1.00	
Bromoform	ND	4.8	1.00	
Bromomethane	ND	19	1.00	
2-Butanone	ND	19	1.00	
n-Butylbenzene	ND	0.96	1.00	
sec-Butylbenzene	ND	0.96	1.00	
tert-Butylbenzene	ND	0.96	1.00	
Carbon Disulfide	ND	9.6	1.00	
Carbon Tetrachloride	ND	0.96	1.00	
Chlorobenzene	ND	0.96	1.00	
Chloroethane	ND	1.9	1.00	
Chloroform	ND	0.96	1.00	
Chloromethane	ND	19	1.00	
2-Chlorotoluene	ND	0.96	1.00	
4-Chlorotoluene	ND	0.96	1.00	
Dibromochloromethane	ND	1.9	1.00	
1,2-Dibromo-3-Chloropropane	ND	4.8	1.00	
1,2-Dibromoethane	ND	0.96	1.00	
Dibromomethane	ND	0.96	1.00	
1,2-Dichlorobenzene	ND	0.96	1.00	
1,3-Dichlorobenzene	ND	0.96	1.00	
1,4-Dichlorobenzene	ND	0.96	1.00	
Dichlorodifluoromethane	ND	1.9	1.00	
1,1-Dichloroethane	ND	0.96	1.00	
1,2-Dichloroethane	ND	0.96	1.00	
1,1-Dichloroethene	ND	0.96	1.00	
c-1,2-Dichloroethene	ND	0.96	1.00	
t-1,2-Dichloroethene	ND	0.96	1.00	
1,2-Dichloropropane	ND	0.96	1.00	
1,3-Dichloropropane	ND	0.96	1.00	
2,2-Dichloropropane	ND	4.8	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392.002

Date Received: 03/22/18
Work Order: 18-03-1986
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	1.9	1.00	
c-1,3-Dichloropropene	ND	0.96	1.00	
t-1,3-Dichloropropene	ND	1.9	1.00	
Ethylbenzene	ND	0.96	1.00	
2-Hexanone	ND	19	1.00	
Isopropylbenzene	ND	0.96	1.00	
p-Isopropyltoluene	ND	0.96	1.00	
Methylene Chloride	ND	9.6	1.00	
4-Methyl-2-Pentanone	ND	19	1.00	
Naphthalene	ND	9.6	1.00	
n-Propylbenzene	ND	1.9	1.00	
Styrene	ND	0.96	1.00	
1,1,1,2-Tetrachloroethane	ND	0.96	1.00	
1,1,2,2-Tetrachloroethane	ND	1.9	1.00	
Tetrachloroethene	ND	0.96	1.00	
Toluene	ND	0.96	1.00	
1,2,3-Trichlorobenzene	ND	1.9	1.00	
1,2,4-Trichlorobenzene	ND	1.9	1.00	
1,1,1-Trichloroethane	ND	0.96	1.00	
1,1,2-Trichloroethane	ND	0.96	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	9.6	1.00	
Trichloroethene	ND	1.9	1.00	
Trichlorofluoromethane	ND	9.6	1.00	
1,2,3-Trichloropropane	ND	1.9	1.00	
1,2,4-Trimethylbenzene	ND	1.9	1.00	
1,3,5-Trimethylbenzene	ND	1.9	1.00	
Vinyl Acetate	ND	9.6	1.00	
Vinyl Chloride	ND	0.96	1.00	
p/m-Xylene	ND	1.9	1.00	
o-Xylene	ND	0.96	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	1.9	1.00	
Tert-Butyl Alcohol (TBA)	ND	19	1.00	
Diisopropyl Ether (DIPE)	ND	0.96	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.96	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.96	1.00	
Ethanol	ND	480	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	99	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/22/18
1920 Main Street, Suite 300	Work Order:	18-03-1986
Irvine, CA 92614-7279	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: Infineon / 0444392.002		Page 3 of 18

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	103	79-133	
1,2-Dichloroethane-d4	110	71-155	
Toluene-d8	99	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392.002

Date Received: 03/22/18
Work Order: 18-03-1986
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B1-4-22	**18-03-1986-2-C**	**03/22/18 08:28**	**Solid**	**GC/MS OO**	**03/22/18**	**03/22/18 19:46**	**180322L028**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	48	1.00	
Benzene	ND	0.97	1.00	
Bromobenzene	ND	0.97	1.00	
Bromochloromethane	ND	1.9	1.00	
Bromodichloromethane	ND	0.97	1.00	
Bromoform	ND	4.8	1.00	
Bromomethane	ND	19	1.00	
2-Butanone	ND	19	1.00	
n-Butylbenzene	ND	0.97	1.00	
sec-Butylbenzene	ND	0.97	1.00	
tert-Butylbenzene	ND	0.97	1.00	
Carbon Disulfide	ND	9.7	1.00	
Carbon Tetrachloride	ND	0.97	1.00	
Chlorobenzene	ND	0.97	1.00	
Chloroethane	ND	1.9	1.00	
Chloroform	ND	0.97	1.00	
Chloromethane	ND	19	1.00	
2-Chlorotoluene	ND	0.97	1.00	
4-Chlorotoluene	ND	0.97	1.00	
Dibromochloromethane	ND	1.9	1.00	
1,2-Dibromo-3-Chloropropane	ND	4.8	1.00	
1,2-Dibromoethane	ND	0.97	1.00	
Dibromomethane	ND	0.97	1.00	
1,2-Dichlorobenzene	ND	0.97	1.00	
1,3-Dichlorobenzene	ND	0.97	1.00	
1,4-Dichlorobenzene	ND	0.97	1.00	
Dichlorodifluoromethane	ND	1.9	1.00	
1,1-Dichloroethane	ND	0.97	1.00	
1,2-Dichloroethane	ND	0.97	1.00	
1,1-Dichloroethene	ND	0.97	1.00	
c-1,2-Dichloroethene	ND	0.97	1.00	
t-1,2-Dichloroethene	ND	0.97	1.00	
1,2-Dichloropropane	ND	0.97	1.00	
1,3-Dichloropropane	ND	0.97	1.00	
2,2-Dichloropropane	ND	4.8	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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ERM-WEST	Date Received:	03/22/18
1920 Main Street, Suite 300	Work Order:	18-03-1986
Irvine, CA 92614-7279	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: Infineon / 0444392.002		Page 5 of 18

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	1.9	1.00	
c-1,3-Dichloropropene	ND	0.97	1.00	
t-1,3-Dichloropropene	ND	1.9	1.00	
Ethylbenzene	ND	0.97	1.00	
2-Hexanone	ND	19	1.00	
Isopropylbenzene	ND	0.97	1.00	
p-Isopropyltoluene	ND	0.97	1.00	
Methylene Chloride	ND	9.7	1.00	
4-Methyl-2-Pentanone	ND	19	1.00	
Naphthalene	ND	9.7	1.00	
n-Propylbenzene	ND	1.9	1.00	
Styrene	ND	0.97	1.00	
1,1,1,2-Tetrachloroethane	ND	0.97	1.00	
1,1,2,2-Tetrachloroethane	ND	1.9	1.00	
Tetrachloroethene	ND	0.97	1.00	
Toluene	ND	0.97	1.00	
1,2,3-Trichlorobenzene	ND	1.9	1.00	
1,2,4-Trichlorobenzene	ND	1.9	1.00	
1,1,1-Trichloroethane	ND	0.97	1.00	
1,1,2-Trichloroethane	ND	0.97	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	9.7	1.00	
Trichloroethene	ND	1.9	1.00	
Trichlorofluoromethane	ND	9.7	1.00	
1,2,3-Trichloropropane	ND	1.9	1.00	
1,2,4-Trimethylbenzene	ND	1.9	1.00	
1,3,5-Trimethylbenzene	ND	1.9	1.00	
Vinyl Acetate	ND	9.7	1.00	
Vinyl Chloride	ND	0.97	1.00	
p/m-Xylene	ND	1.9	1.00	
o-Xylene	ND	0.97	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	1.9	1.00	
Tert-Butyl Alcohol (TBA)	ND	19	1.00	
Diisopropyl Ether (DIPE)	ND	0.97	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.97	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.97	1.00	
Ethanol	ND	480	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	99	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/22/18
1920 Main Street, Suite 300	Work Order:	18-03-1986
Irvine, CA 92614-7279	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: Infineon / 0444392.002		Page 6 of 18

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	102	79-133	
1,2-Dichloroethane-d4	109	71-155	
Toluene-d8	99	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392.002

Date Received:	03/22/18
Work Order:	18-03-1986
Preparation:	EPA 5035
Method:	EPA 8260B
Units:	ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B1-4-32	**18-03-1986-3-C**	**03/22/18 08:37**	**Solid**	**GC/MS OO**	**03/22/18**	**03/22/18 20:14**	**180322L028**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	52	1.00	
Benzene	ND	1.0	1.00	
Bromobenzene	ND	1.0	1.00	
Bromochloromethane	ND	2.1	1.00	
Bromodichloromethane	ND	1.0	1.00	
Bromoform	ND	5.2	1.00	
Bromomethane	ND	21	1.00	
2-Butanone	ND	21	1.00	
n-Butylbenzene	ND	1.0	1.00	
sec-Butylbenzene	ND	1.0	1.00	
tert-Butylbenzene	ND	1.0	1.00	
Carbon Disulfide	ND	10	1.00	
Carbon Tetrachloride	ND	1.0	1.00	
Chlorobenzene	ND	1.0	1.00	
Chloroethane	ND	2.1	1.00	
Chloroform	ND	1.0	1.00	
Chloromethane	ND	21	1.00	
2-Chlorotoluene	ND	1.0	1.00	
4-Chlorotoluene	ND	1.0	1.00	
Dibromochloromethane	ND	2.1	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.2	1.00	
1,2-Dibromoethane	ND	1.0	1.00	
Dibromomethane	ND	1.0	1.00	
1,2-Dichlorobenzene	ND	1.0	1.00	
1,3-Dichlorobenzene	ND	1.0	1.00	
1,4-Dichlorobenzene	ND	1.0	1.00	
Dichlorodifluoromethane	ND	2.1	1.00	
1,1-Dichloroethane	ND	1.0	1.00	
1,2-Dichloroethane	ND	1.0	1.00	
1,1-Dichloroethene	ND	1.0	1.00	
c-1,2-Dichloroethene	ND	1.0	1.00	
t-1,2-Dichloroethene	ND	1.0	1.00	
1,2-Dichloropropane	ND	1.0	1.00	
1,3-Dichloropropane	ND	1.0	1.00	
2,2-Dichloropropane	ND	5.2	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/22/18
1920 Main Street, Suite 300	Work Order:	18-03-1986
Irvine, CA 92614-7279	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: Infineon / 0444392.002		Page 8 of 18

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.1	1.00	
c-1,3-Dichloropropene	ND	1.0	1.00	
t-1,3-Dichloropropene	ND	2.1	1.00	
Ethylbenzene	ND	1.0	1.00	
2-Hexanone	ND	21	1.00	
Isopropylbenzene	ND	1.0	1.00	
p-Isopropyltoluene	ND	1.0	1.00	
Methylene Chloride	ND	10	1.00	
4-Methyl-2-Pentanone	ND	21	1.00	
Naphthalene	ND	10	1.00	
n-Propylbenzene	ND	2.1	1.00	
Styrene	ND	1.0	1.00	
1,1,1,2-Tetrachloroethane	ND	1.0	1.00	
1,1,2,2-Tetrachloroethane	ND	2.1	1.00	
Tetrachloroethene	ND	1.0	1.00	
Toluene	ND	1.0	1.00	
1,2,3-Trichlorobenzene	ND	2.1	1.00	
1,2,4-Trichlorobenzene	ND	2.1	1.00	
1,1,1-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.00	
Trichloroethene	ND	2.1	1.00	
Trichlorofluoromethane	ND	10	1.00	
1,2,3-Trichloropropane	ND	2.1	1.00	
1,2,4-Trimethylbenzene	ND	2.1	1.00	
1,3,5-Trimethylbenzene	ND	2.1	1.00	
Vinyl Acetate	ND	10	1.00	
Vinyl Chloride	ND	1.0	1.00	
p/m-Xylene	ND	2.1	1.00	
o-Xylene	ND	1.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.1	1.00	
Tert-Butyl Alcohol (TBA)	ND	21	1.00	
Diisopropyl Ether (DIPE)	ND	1.0	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.0	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.0	1.00	
Ethanol	ND	520	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	100	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/22/18
1920 Main Street, Suite 300	Work Order:	18-03-1986
Irvine, CA 92614-7279	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: Infineon / 0444392.002		Page 9 of 18

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	103	79-133	
1,2-Dichloroethane-d4	111	71-155	
Toluene-d8	99	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392.002

Date Received: 03/22/18
Work Order: 18-03-1986
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B1-4-48	**18-03-1986-4-C**	**03/22/18 08:50**	**Solid**	**GC/MS OO**	**03/22/18**	**03/22/18 20:43**	**180322L028**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	56	1.00	
Benzene	ND	1.1	1.00	
Bromobenzene	ND	1.1	1.00	
Bromochloromethane	ND	2.2	1.00	
Bromodichloromethane	ND	1.1	1.00	
Bromoform	ND	5.6	1.00	
Bromomethane	ND	22	1.00	
2-Butanone	ND	22	1.00	
n-Butylbenzene	ND	1.1	1.00	
sec-Butylbenzene	ND	1.1	1.00	
tert-Butylbenzene	ND	1.1	1.00	
Carbon Disulfide	ND	11	1.00	
Carbon Tetrachloride	ND	1.1	1.00	
Chlorobenzene	ND	1.1	1.00	
Chloroethane	ND	2.2	1.00	
Chloroform	ND	1.1	1.00	
Chloromethane	ND	22	1.00	
2-Chlorotoluene	ND	1.1	1.00	
4-Chlorotoluene	ND	1.1	1.00	
Dibromochloromethane	ND	2.2	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.6	1.00	
1,2-Dibromoethane	ND	1.1	1.00	
Dibromomethane	ND	1.1	1.00	
1,2-Dichlorobenzene	ND	1.1	1.00	
1,3-Dichlorobenzene	ND	1.1	1.00	
1,4-Dichlorobenzene	ND	1.1	1.00	
Dichlorodifluoromethane	ND	2.2	1.00	
1,1-Dichloroethane	ND	1.1	1.00	
1,2-Dichloroethane	ND	1.1	1.00	
1,1-Dichloroethene	ND	1.1	1.00	
c-1,2-Dichloroethene	ND	1.1	1.00	
t-1,2-Dichloroethene	ND	1.1	1.00	
1,2-Dichloropropane	ND	1.1	1.00	
1,3-Dichloropropane	ND	1.1	1.00	
2,2-Dichloropropane	ND	5.6	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/22/18
1920 Main Street, Suite 300	Work Order:	18-03-1986
Irvine, CA 92614-7279	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: Infineon / 0444392.002		Page 11 of 18

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.2	1.00	
c-1,3-Dichloropropene	ND	1.1	1.00	
t-1,3-Dichloropropene	ND	2.2	1.00	
Ethylbenzene	ND	1.1	1.00	
2-Hexanone	ND	22	1.00	
Isopropylbenzene	ND	1.1	1.00	
p-Isopropyltoluene	ND	1.1	1.00	
Methylene Chloride	ND	11	1.00	
4-Methyl-2-Pentanone	ND	22	1.00	
Naphthalene	ND	11	1.00	
n-Propylbenzene	ND	2.2	1.00	
Styrene	ND	1.1	1.00	
1,1,1,2-Tetrachloroethane	ND	1.1	1.00	
1,1,2,2-Tetrachloroethane	ND	2.2	1.00	
Tetrachloroethene	ND	1.1	1.00	
Toluene	ND	1.1	1.00	
1,2,3-Trichlorobenzene	ND	2.2	1.00	
1,2,4-Trichlorobenzene	ND	2.2	1.00	
1,1,1-Trichloroethane	ND	1.1	1.00	
1,1,2-Trichloroethane	ND	1.1	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	11	1.00	
Trichloroethene	ND	2.2	1.00	
Trichlorofluoromethane	ND	11	1.00	
1,2,3-Trichloropropane	ND	2.2	1.00	
1,2,4-Trimethylbenzene	ND	2.2	1.00	
1,3,5-Trimethylbenzene	ND	2.2	1.00	
Vinyl Acetate	ND	11	1.00	
Vinyl Chloride	ND	1.1	1.00	
p/m-Xylene	ND	2.2	1.00	
o-Xylene	ND	1.1	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.2	1.00	
Tert-Butyl Alcohol (TBA)	ND	22	1.00	
Diisopropyl Ether (DIPE)	ND	1.1	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.1	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.1	1.00	
Ethanol	ND	560	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	99	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/22/18
1920 Main Street, Suite 300	Work Order:	18-03-1986
Irvine, CA 92614-7279	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: Infineon / 0444392.002		Page 12 of 18

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	100	79-133	
1,2-Dichloroethane-d4	109	71-155	
Toluene-d8	100	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392.002

Date Received: 03/22/18
Work Order: 18-03-1986
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B1-4-80	**18-03-1986-5-C**	**03/22/18 10:05**	**Solid**	**GC/MS OO**	**03/22/18**	**03/22/18 21:12**	**180322L028**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	54	1.00	
Benzene	ND	1.1	1.00	
Bromobenzene	ND	1.1	1.00	
Bromochloromethane	ND	2.2	1.00	
Bromodichloromethane	ND	1.1	1.00	
Bromoform	ND	5.4	1.00	
Bromomethane	ND	22	1.00	
2-Butanone	ND	22	1.00	
n-Butylbenzene	ND	1.1	1.00	
sec-Butylbenzene	ND	1.1	1.00	
tert-Butylbenzene	ND	1.1	1.00	
Carbon Disulfide	ND	11	1.00	
Carbon Tetrachloride	ND	1.1	1.00	
Chlorobenzene	ND	1.1	1.00	
Chloroethane	ND	2.2	1.00	
Chloroform	ND	1.1	1.00	
Chloromethane	ND	22	1.00	
2-Chlorotoluene	ND	1.1	1.00	
4-Chlorotoluene	ND	1.1	1.00	
Dibromochloromethane	ND	2.2	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.4	1.00	
1,2-Dibromoethane	ND	1.1	1.00	
Dibromomethane	ND	1.1	1.00	
1,2-Dichlorobenzene	ND	1.1	1.00	
1,3-Dichlorobenzene	ND	1.1	1.00	
1,4-Dichlorobenzene	ND	1.1	1.00	
Dichlorodifluoromethane	ND	2.2	1.00	
1,1-Dichloroethane	ND	1.1	1.00	
1,2-Dichloroethane	ND	1.1	1.00	
1,1-Dichloroethene	ND	1.1	1.00	
c-1,2-Dichloroethene	ND	1.1	1.00	
t-1,2-Dichloroethene	ND	1.1	1.00	
1,2-Dichloropropane	ND	1.1	1.00	
1,3-Dichloropropane	ND	1.1	1.00	
2,2-Dichloropropane	ND	5.4	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/22/18
1920 Main Street, Suite 300	Work Order:	18-03-1986
Irvine, CA 92614-7279	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: Infineon / 0444392.002		Page 14 of 18

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.2	1.00	
c-1,3-Dichloropropene	ND	1.1	1.00	
t-1,3-Dichloropropene	ND	2.2	1.00	
Ethylbenzene	ND	1.1	1.00	
2-Hexanone	ND	22	1.00	
Isopropylbenzene	ND	1.1	1.00	
p-Isopropyltoluene	ND	1.1	1.00	
Methylene Chloride	ND	11	1.00	
4-Methyl-2-Pentanone	ND	22	1.00	
Naphthalene	ND	11	1.00	
n-Propylbenzene	ND	2.2	1.00	
Styrene	ND	1.1	1.00	
1,1,1,2-Tetrachloroethane	ND	1.1	1.00	
1,1,2,2-Tetrachloroethane	ND	2.2	1.00	
Tetrachloroethene	ND	1.1	1.00	
Toluene	ND	1.1	1.00	
1,2,3-Trichlorobenzene	ND	2.2	1.00	
1,2,4-Trichlorobenzene	ND	2.2	1.00	
1,1,1-Trichloroethane	ND	1.1	1.00	
1,1,2-Trichloroethane	ND	1.1	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	11	1.00	
Trichloroethene	ND	2.2	1.00	
Trichlorofluoromethane	ND	11	1.00	
1,2,3-Trichloropropane	ND	2.2	1.00	
1,2,4-Trimethylbenzene	ND	2.2	1.00	
1,3,5-Trimethylbenzene	ND	2.2	1.00	
Vinyl Acetate	ND	11	1.00	
Vinyl Chloride	ND	1.1	1.00	
p/m-Xylene	ND	2.2	1.00	
o-Xylene	ND	1.1	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.2	1.00	
Tert-Butyl Alcohol (TBA)	ND	22	1.00	
Diisopropyl Ether (DIPE)	ND	1.1	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.1	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.1	1.00	
Ethanol	ND	540	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	98	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/22/18
1920 Main Street, Suite 300	Work Order:	18-03-1986
Irvine, CA 92614-7279	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: Infineon / 0444392.002		Page 15 of 18

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	98	79-133	
1,2-Dichloroethane-d4	106	71-155	
Toluene-d8	99	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392.002

Date Received: 03/22/18
Work Order: 18-03-1986
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**095-01-025-29795**	**N/A**	**Solid**	**GC/MS OO**	**03/22/18**	**03/22/18 18:03**	**180322L028**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	50	1.00	
Benzene	ND	1.0	1.00	
Bromobenzene	ND	1.0	1.00	
Bromochloromethane	ND	2.0	1.00	
Bromodichloromethane	ND	1.0	1.00	
Bromoform	ND	5.0	1.00	
Bromomethane	ND	20	1.00	
2-Butanone	ND	20	1.00	
n-Butylbenzene	ND	1.0	1.00	
sec-Butylbenzene	ND	1.0	1.00	
tert-Butylbenzene	ND	1.0	1.00	
Carbon Disulfide	ND	10	1.00	
Carbon Tetrachloride	ND	1.0	1.00	
Chlorobenzene	ND	1.0	1.00	
Chloroethane	ND	2.0	1.00	
Chloroform	ND	1.0	1.00	
Chloromethane	ND	20	1.00	
2-Chlorotoluene	ND	1.0	1.00	
4-Chlorotoluene	ND	1.0	1.00	
Dibromochloromethane	ND	2.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.0	1.00	
1,2-Dibromoethane	ND	1.0	1.00	
Dibromomethane	ND	1.0	1.00	
1,2-Dichlorobenzene	ND	1.0	1.00	
1,3-Dichlorobenzene	ND	1.0	1.00	
1,4-Dichlorobenzene	ND	1.0	1.00	
Dichlorodifluoromethane	ND	2.0	1.00	
1,1-Dichloroethane	ND	1.0	1.00	
1,2-Dichloroethane	ND	1.0	1.00	
1,1-Dichloroethene	ND	1.0	1.00	
c-1,2-Dichloroethene	ND	1.0	1.00	
t-1,2-Dichloroethene	ND	1.0	1.00	
1,2-Dichloropropane	ND	1.0	1.00	
1,3-Dichloropropane	ND	1.0	1.00	
2,2-Dichloropropane	ND	5.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392.002

Date Received: 03/22/18
Work Order: 18-03-1986
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.0	1.00	
c-1,3-Dichloropropene	ND	1.0	1.00	
t-1,3-Dichloropropene	ND	2.0	1.00	
Ethylbenzene	ND	1.0	1.00	
2-Hexanone	ND	20	1.00	
Isopropylbenzene	ND	1.0	1.00	
p-Isopropyltoluene	ND	1.0	1.00	
Methylene Chloride	ND	10	1.00	
4-Methyl-2-Pentanone	ND	20	1.00	
Naphthalene	ND	10	1.00	
n-Propylbenzene	ND	2.0	1.00	
Styrene	ND	1.0	1.00	
1,1,1,2-Tetrachloroethane	ND	1.0	1.00	
1,1,2,2-Tetrachloroethane	ND	2.0	1.00	
Tetrachloroethene	ND	1.0	1.00	
Toluene	ND	1.0	1.00	
1,2,3-Trichlorobenzene	ND	2.0	1.00	
1,2,4-Trichlorobenzene	ND	2.0	1.00	
1,1,1-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.00	
Trichloroethene	ND	2.0	1.00	
Trichlorofluoromethane	ND	10	1.00	
1,2,3-Trichloropropane	ND	2.0	1.00	
1,2,4-Trimethylbenzene	ND	2.0	1.00	
1,3,5-Trimethylbenzene	ND	2.0	1.00	
Vinyl Acetate	ND	10	1.00	
Vinyl Chloride	ND	1.0	1.00	
p/m-Xylene	ND	2.0	1.00	
o-Xylene	ND	1.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.0	1.00	
Tert-Butyl Alcohol (TBA)	ND	20	1.00	
Diisopropyl Ether (DIPE)	ND	1.0	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.0	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.0	1.00	
Ethanol	ND	500	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	99	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/22/18
1920 Main Street, Suite 300		Work Order:	18-03-1986
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392.002			Page 18 of 18

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	98	79-133	
1,2-Dichloroethane-d4	99	71-155	
Toluene-d8	99	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Quality Control - Spike/Spike Duplicate

ERM-WEST		Date Received:	03/22/18
1920 Main Street, Suite 300		Work Order:	18-03-1986
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
Project: Infineon / 0444392.002			Page 1 of 2

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
18-03-1435-2	**Sample**	**Aqueous**	**GC/MS V V**	**03/22/18**	**03/22/18 17:14**	**180322S008**
18-03-1435-2	**Matrix Spike**	**Aqueous**	**GC/MS V V**	**03/22/18**	**03/22/18 17:43**	**180322S008**
18-03-1435-2	**Matrix Spike Duplicate**	**Aqueous**	**GC/MS V V**	**03/22/18**	**03/22/18 18:12**	**180322S008**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Acetone	ND	50.00	122.1	244	129.0	258	34-166	5	0-33	3
Benzene	0.5499	50.00	47.46	94	47.29	93	75-125	0	0-20	
Bromobenzene	ND	50.00	49.55	99	50.36	101	75-125	2	0-20	
Bromochloromethane	ND	50.00	51.85	104	53.66	107	75-125	3	0-20	
Bromodichloromethane	ND	50.00	47.56	95	47.65	95	75-134	0	0-20	
Bromoform	ND	50.00	46.21	92	48.64	97	74-134	5	0-20	
Bromomethane	ND	50.00	44.72	89	44.05	88	20-168	2	0-40	
2-Butanone	ND	50.00	80.55	161	83.17	166	37-157	3	0-20	3
n-Butylbenzene	ND	50.00	53.86	108	54.74	109	73-145	2	0-20	
sec-Butylbenzene	ND	50.00	51.68	103	51.79	104	75-135	0	0-20	
tert-Butylbenzene	ND	50.00	40.93	82	40.56	81	75-136	1	0-20	
Carbon Disulfide	ND	50.00	49.43	99	48.17	96	50-152	3	0-27	
Carbon Tetrachloride	ND	50.00	53.93	108	51.66	103	70-154	4	0-20	
Chlorobenzene	ND	50.00	48.66	97	49.17	98	75-125	1	0-20	
Chloroethane	ND	50.00	54.43	109	53.54	107	41-167	2	0-26	
Chloroform	ND	50.00	46.22	92	47.11	94	75-127	2	0-20	
Chloromethane	ND	50.00	44.34	89	47.51	95	41-149	7	0-20	
2-Chlorotoluene	ND	50.00	49.30	99	49.54	99	75-128	0	0-20	
4-Chlorotoluene	ND	50.00	47.63	95	48.51	97	75-125	2	0-20	
Dibromochloromethane	ND	50.00	48.76	98	49.87	100	75-131	2	0-20	
1,2-Dibromo-3-Chloropropane	ND	50.00	48.55	97	50.73	101	64-142	4	0-20	
1,2-Dibromoethane	ND	50.00	48.70	97	49.56	99	75-129	2	0-20	
Dibromomethane	ND	50.00	49.19	98	49.63	99	75-125	1	0-20	
1,2-Dichlorobenzene	ND	50.00	49.01	98	51.13	102	75-125	4	0-20	
1,3-Dichlorobenzene	ND	50.00	48.07	96	49.96	100	75-125	4	0-20	
1,4-Dichlorobenzene	ND	50.00	47.61	95	49.37	99	75-125	4	0-20	
Dichlorodifluoromethane	ND	50.00	56.64	113	40.37	81	25-157	34	0-26	4
1,1-Dichloroethane	ND	50.00	47.16	94	47.74	95	73-139	1	0-20	
1,2-Dichloroethane	ND	50.00	47.70	95	48.18	96	75-125	1	0-20	
1,1-Dichloroethene	ND	50.00	51.59	103	48.87	98	61-145	5	0-20	
c-1,2-Dichloroethene	ND	50.00	45.80	92	46.94	94	75-125	2	0-20	
t-1,2-Dichloroethene	ND	50.00	47.46	95	47.22	94	64-142	1	0-20	
1,2-Dichloropropane	ND	50.00	46.87	94	46.60	93	75-127	1	0-20	
1,3-Dichloropropane	ND	50.00	45.83	92	47.13	94	75-125	3	0-20	
2,2-Dichloropropane	ND	50.00	52.92	106	52.55	105	24-180	1	0-20	

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - Spike/Spike Duplicate

ERM-WEST	Date Received:	03/22/18
1920 Main Street, Suite 300	Work Order:	18-03-1986
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
Project: Infineon / 0444392.002		Page 2 of 2

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
1,1-Dichloropropene	ND	50.00	50.14	100	47.43	95	75-135	6	0-20	
c-1,3-Dichloropropene	ND	50.00	46.76	94	47.34	95	75-137	1	0-20	
t-1,3-Dichloropropene	ND	50.00	47.90	96	49.03	98	74-146	2	0-20	
Ethylbenzene	ND	50.00	50.29	101	50.51	101	75-129	0	0-20	
2-Hexanone	ND	50.00	67.75	136	71.89	144	47-161	6	0-20	
Isopropylbenzene	ND	50.00	50.95	102	50.75	101	75-135	0	0-20	
p-Isopropyltoluene	ND	50.00	51.09	102	51.96	104	75-136	2	0-20	
Methylene Chloride	ND	50.00	46.46	93	46.93	94	63-141	1	0-20	
4-Methyl-2-Pentanone	ND	50.00	47.05	94	48.28	97	66-138	3	0-20	
Naphthalene	ND	50.00	46.82	94	51.94	104	59-143	10	0-20	
n-Propylbenzene	ND	50.00	51.80	104	51.42	103	75-133	1	0-20	
Styrene	ND	50.00	49.92	100	50.81	102	70-142	2	0-28	
1,1,1,2-Tetrachloroethane	ND	50.00	48.59	97	49.69	99	75-139	2	0-20	
1,1,2,2-Tetrachloroethane	ND	50.00	41.47	83	36.16	72	61-145	14	0-20	
Tetrachloroethene	ND	50.00	76.98	154	81.75	163	47-143	6	0-20	3
Toluene	ND	50.00	48.01	96	47.36	95	75-125	1	0-20	
1,2,3-Trichlorobenzene	ND	50.00	49.14	98	53.12	106	73-133	8	0-20	
1,2,4-Trichlorobenzene	ND	50.00	49.97	100	53.64	107	71-137	7	0-20	
1,1,1-Trichloroethane	ND	50.00	48.52	97	47.75	95	75-136	2	0-20	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	50.00	57.01	114	47.53	95	42-168	18	0-22	
1,1,2-Trichloroethane	ND	50.00	46.20	92	48.42	97	75-125	5	0-20	
Trichloroethene	ND	50.00	52.66	105	57.37	115	67-139	9	0-20	
Trichlorofluoromethane	ND	50.00	60.04	120	49.76	100	59-155	19	0-20	
1,2,3-Trichloropropane	ND	50.00	48.26	97	49.62	99	75-127	3	0-20	
1,2,4-Trimethylbenzene	ND	50.00	48.94	98	50.20	100	75-133	3	0-20	
1,3,5-Trimethylbenzene	ND	50.00	51.05	102	51.50	103	75-135	1	0-20	
Vinyl Acetate	ND	50.00	35.01	70	25.53	51	54-180	31	0-25	3,4
Vinyl Chloride	ND	50.00	64.03	128	60.89	122	51-153	5	0-20	
p/m-Xylene	ND	100.0	101.5	101	102.1	102	75-133	1	0-20	
o-Xylene	ND	50.00	49.89	100	50.65	101	75-134	2	0-20	
Methyl-t-Butyl Ether (MTBE)	ND	50.00	43.28	87	45.88	92	64-136	6	0-20	
Tert-Butyl Alcohol (TBA)	ND	250.0	231.9	93	249.2	100	75-136	7	0-20	
Diisopropyl Ether (DIPE)	ND	50.00	44.31	89	45.76	92	73-139	3	0-20	
Ethyl-t-Butyl Ether (ETBE)	ND	50.00	42.37	85	44.93	90	69-135	6	0-20	
Tert-Amyl-Methyl Ether (TAME)	ND	50.00	43.73	87	45.43	91	69-135	4	0-20	
Ethanol	ND	500.0	418.1	84	416.2	83	29-179	0	0-25	

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS

ERM-WEST		Date Received:	03/22/18
1920 Main Street, Suite 300		Work Order:	18-03-1986
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
Project: Infineon / 0444392.002			Page 1 of 3

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-14-001-25471	**LCS**	**Aqueous**	**GC/MS V V**	**03/22/18**	**03/22/18 15:37**	**180322L022**

Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	ME CL	Qualifiers
Acetone	50.00	57.87	116	53-137	39-151	
Benzene	50.00	46.94	94	79-121	72-128	
Bromobenzene	50.00	50.88	102	80-120	73-127	
Bromochloromethane	50.00	52.69	105	80-122	73-129	
Bromodichloromethane	50.00	48.74	97	80-124	73-131	
Bromoform	50.00	48.61	97	73-127	64-136	
Bromomethane	50.00	46.80	94	50-150	33-167	
2-Butanone	50.00	52.53	105	60-126	49-137	
n-Butylbenzene	50.00	51.32	103	72-138	61-149	
sec-Butylbenzene	50.00	51.12	102	77-131	68-140	
tert-Butylbenzene	50.00	50.01	100	80-125	72-132	
Carbon Disulfide	50.00	48.50	97	50-150	33-167	
Carbon Tetrachloride	50.00	51.84	104	65-143	52-156	
Chlorobenzene	50.00	49.69	99	80-120	73-127	
Chloroethane	50.00	49.12	98	62-128	51-139	
Chloroform	50.00	47.14	94	80-120	73-127	
Chloromethane	50.00	45.10	90	43-133	28-148	
2-Chlorotoluene	50.00	49.92	100	80-121	73-128	
4-Chlorotoluene	50.00	48.45	97	80-120	73-127	
Dibromochloromethane	50.00	50.12	100	80-123	73-130	
1,2-Dibromo-3-Chloropropane	50.00	48.24	96	66-126	56-136	
1,2-Dibromoethane	50.00	50.10	100	80-120	73-127	
Dibromomethane	50.00	49.68	99	80-120	73-127	
1,2-Dichlorobenzene	50.00	50.57	101	80-120	73-127	
1,3-Dichlorobenzene	50.00	49.94	100	80-120	73-127	
1,4-Dichlorobenzene	50.00	49.57	99	80-120	73-127	
Dichlorodifluoromethane	50.00	39.78	80	50-150	33-167	
1,1-Dichloroethane	50.00	47.65	95	72-126	63-135	
1,2-Dichloroethane	50.00	49.31	99	76-120	69-127	
1,1-Dichloroethene	50.00	49.96	100	66-132	55-143	
c-1,2-Dichloroethene	50.00	47.24	94	78-120	71-127	
t-1,2-Dichloroethene	50.00	47.38	95	66-132	55-143	
1,2-Dichloropropane	50.00	47.46	95	80-120	73-127	
1,3-Dichloropropane	50.00	48.29	97	80-120	73-127	
2,2-Dichloropropane	50.00	51.37	103	50-150	33-167	
1,1-Dichloropropene	50.00	48.43	97	75-123	67-131	
c-1,3-Dichloropropene	50.00	47.88	96	77-131	68-140	
t-1,3-Dichloropropene	50.00	49.59	99	76-136	66-146	

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS

ERM-WEST	Date Received:	03/22/18
1920 Main Street, Suite 300	Work Order:	18-03-1986
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
Project: Infineon / 0444392.002		Page 2 of 3

Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	ME CL	Qualifiers
Ethylbenzene	50.00	50.22	100	80-120	73-127	
2-Hexanone	50.00	43.67	87	63-123	53-133	
Isopropylbenzene	50.00	50.65	101	80-128	72-136	
p-Isopropyltoluene	50.00	51.09	102	73-133	63-143	
Methylene Chloride	50.00	47.60	95	61-133	49-145	
4-Methyl-2-Pentanone	50.00	42.99	86	65-125	55-135	
Naphthalene	50.00	48.49	97	69-129	59-139	
n-Propylbenzene	50.00	51.20	102	80-128	72-136	
Styrene	50.00	51.32	103	80-126	72-134	
1,1,1,2-Tetrachloroethane	50.00	50.36	101	80-129	72-137	
1,1,2,2-Tetrachloroethane	50.00	46.70	93	74-122	66-130	
Tetrachloroethene	50.00	51.95	104	55-139	41-153	
Toluene	50.00	47.53	95	80-120	73-127	
1,2,3-Trichlorobenzene	50.00	51.80	104	72-132	62-142	
1,2,4-Trichlorobenzene	50.00	51.58	103	74-134	64-144	
1,1,1-Trichloroethane	50.00	48.11	96	76-124	68-132	
1,1,2-Trichloro-1,2,2-Trifluoroethane	50.00	52.77	106	54-150	38-166	
1,1,2-Trichloroethane	50.00	48.67	97	80-120	73-127	
Trichloroethene	50.00	48.25	97	79-121	72-128	
Trichlorofluoromethane	50.00	47.05	94	72-132	62-142	
1,2,3-Trichloropropane	50.00	49.00	98	75-123	67-131	
1,2,4-Trimethylbenzene	50.00	49.73	99	74-128	65-137	
1,3,5-Trimethylbenzene	50.00	50.79	102	77-131	68-140	
Vinyl Acetate	50.00	45.01	90	50-150	33-167	
Vinyl Chloride	50.00	53.98	108	63-129	52-140	
p/m-Xylene	100.0	101.8	102	80-122	73-129	
o-Xylene	50.00	50.62	101	80-128	72-136	
Methyl-t-Butyl Ether (MTBE)	50.00	45.82	92	69-123	60-132	
Tert-Butyl Alcohol (TBA)	250.0	259.8	104	80-124	73-131	
Diisopropyl Ether (DIPE)	50.00	46.41	93	79-121	72-128	
Ethyl-t-Butyl Ether (ETBE)	50.00	44.90	90	71-125	62-134	
Tert-Amyl-Methyl Ether (TAME)	50.00	45.89	92	70-124	61-133	
Ethanol	500.0	526.7	105	53-149	37-165	

Total number of LCS compounds: 71
Total number of ME compounds: 0
Total number of ME compounds allowed: 4
LCS ME CL validation result: Pass

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS/LCSD

ERM-WEST		Date Received:	03/22/18
1920 Main Street, Suite 300		Work Order:	18-03-1986
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
Project: Infineon / 0444392.002			Page 3 of 3

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
095-01-025-29795	**LCS**	**Solid**	**GC/MS OO**	**03/22/18**	**03/22/18 16:37**	**180322L028**
095-01-025-29795	**LCSD**	**Solid**	**GC/MS OO**	**03/22/18**	**03/22/18 17:05**	**180322L028**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Benzene	50.00	47.16	94	42.12	84	80-120	73-127	11	0-20	
Carbon Tetrachloride	50.00	49.63	99	43.28	87	65-137	53-149	14	0-20	
Chlorobenzene	50.00	49.71	99	44.14	88	80-120	73-127	12	0-20	
1,2-Dibromoethane	50.00	49.17	98	44.07	88	80-120	73-127	11	0-20	
1,2-Dichlorobenzene	50.00	50.14	100	44.22	88	80-120	73-127	13	0-20	
1,2-Dichloroethane	50.00	48.61	97	43.65	87	80-120	73-127	11	0-20	
1,1-Dichloroethene	50.00	53.00	106	46.44	93	68-128	58-138	13	0-20	
Ethylbenzene	50.00	50.28	101	44.34	89	80-120	73-127	13	0-20	
Toluene	50.00	48.49	97	43.36	87	80-120	73-127	11	0-20	
Trichloroethene	50.00	49.10	98	43.85	88	80-120	73-127	11	0-20	
Vinyl Chloride	50.00	61.50	123	59.74	119	67-127	57-137	3	0-20	
p/m-Xylene	100.0	99.34	99	87.60	88	75-125	67-133	13	0-25	
o-Xylene	50.00	48.47	97	42.95	86	75-125	67-133	12	0-25	
Methyl-t-Butyl Ether (MTBE)	50.00	46.29	93	41.26	83	70-124	61-133	11	0-20	
Tert-Butyl Alcohol (TBA)	250.0	213.7	85	214.8	86	73-121	65-129	1	0-20	
Diisopropyl Ether (DIPE)	50.00	46.91	94	41.47	83	69-129	59-139	12	0-20	
Ethyl-t-Butyl Ether (ETBE)	50.00	47.57	95	42.32	85	70-124	61-133	12	0-20	
Tert-Amyl-Methyl Ether (TAME)	50.00	47.55	95	43.45	87	74-122	66-130	9	0-20	
Ethanol	500.0	425.1	85	445.7	89	51-135	37-149	5	0-27	

Total number of LCS compounds: 19
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

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RPD: Relative Percent Difference. CL: Control Limits

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Sample Analysis Summary Report

Work Order: 18-03-1986 Page 1 of 1

Method	Extraction	Chemist ID	Instrument	Analytical Location
EPA 8260B	EPA 5035	849	GC/MS OO	2
EPA 8260B	EPA 5030C	1120	GC/MS V V	2

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Glossary of Terms and Qualifiers

Work Order: 18-03-1986 Page 1 of 1

Qualifiers	Definition
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
CI	See case narrative.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.
	Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.
	Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.
	A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

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7440 Lincoln Way, Garden Grove, CA 92841-1427 • (714) 895-5494
For courier service / sample drop off information, contact us26_sales@eurofinsus.com or call us.

CHAIN-OF-CUSTODY RECORD

Date 03/22/2018
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WO NO. / LAB USE ONLY
18-03-1986

LABORATORY CLIENT: ERM
ADDRESS: 1920 Main Street - Suite 300
CITY: Irvine STATE: CA ZIP: 92614
TEL: 949-623-4700 E-MAIL:

CLIENT PROJECT NAME / NO.: Infineon
P.O. NO.: 0444392-002
PROJECT CONTACT: Maggie Tymkow
LAB CONTACT OR QUOTE NO: Virendra Patel
GLOBAL ID: LOG CODE:
SAMPLER(S): (PRINT) Manuel Leon

TURNAROUND TIME (Rush surcharges may apply to any TAT not "STANDARD"):
☐ SAME DAY ☒ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAYS ☐ STANDARD

EDD
☐ COELT EDF ☐ OTHER

SPECIAL INSTRUCTIONS: EQUIS

Email to: maggie.tymkow@erm.com
Stewart.em40f@erm.com
Brad.cross@erm.com
Tony.Parenteau@erm.com

REQUESTED ANALYSES
Please check box or fill in blank as needed.

LAB USE ONLY	SAMPLE ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	Unpreserved	Preserved	Field Filtered	TPH(g) ☐ GRO	TPH(d) ☐ DRO	TPH ☐ C6-C36 ☐ C6-C44	TPH ____	BTEX / MTBE ☐ 8260 ☐ ____	VOCs (8260)	Oxygenates (8260)	Prep (5035) ☐ En Core ☒ Terra Core	SVOCs (8270)	Pesticides (8081)	PCBs (8082)	PAHs ☐ 8270 ☐ 8270 SIM	T22 Metals ☐ 6010/747X ☐ 6020/747X	Cr(VI) ☐ 7196 ☐ 7199 ☐ 218.6				
1	B1-4-13	3/22/18	0820	Soil	1 Kit									✓												
2	B1-4-22	3/22/18	0828	Soil	1 Kit									✓												
3	B1-4-32	3/22/18	0837	Soil	1 Kit									✓												
4	B1-4-48	3/22/18	0850	Soil	1 Kit									✓												
5	B1-4-80	3/22/18	1005	Soil	1 Kit									✓												
6	Trip Blk	—		Water	2									✓												

3/22/2018 - 1120

Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date	Time
Manuel Leon 3/22/2018 — 1355			
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date: 3/22/18	Time: 1355
		Date: 3/22/18	Time: 1710
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:

2016-04-01-Revision

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WORK ORDER NUMBER: 18-03-1986

SAMPLE RECEIPT CHECKLIST

COOLER 1 OF 1

CLIENT: ERM

DATE: 03/22/2018

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)

Thermometer ID: SC6 (CF: +0.2°C); Temperature (w/o CF): 2.0 °C (w/ CF): 2.2 °C; ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____)

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling

☐ Sample(s) received at ambient temperature; placed on ice for transport by courier

Ambient Temperature: ☐ Air ☐ Filter Checked by: 1091

CUSTODY SEAL:

Cooler ☐ Present and Intact ☐ Present but Not Intact ☑ Not Present ☐ N/A Checked by: 1091

Sample(s) ☐ Present and Intact ☐ Present but Not Intact ☑ Not Present ☐ N/A Checked by: SR

SAMPLE CONDITION:	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ Sampling date ☐ Sampling time ☐ Matrix ☐ Number of containers			
☐ No analysis requested ☐ Not relinquished ☐ No relinquished date ☐ No relinquished time			
Sampler's name indicated on COC	☑	☐	☐
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and in good condition	☑	☐	☐
Proper containers for analyses requested	☑	☐	☐
Sufficient volume/mass for analyses requested	☑	☐	☐
Samples received within holding time	☑	☐	☐
Aqueous samples for certain analyses received within 15-minute holding time			
☐ pH ☐ Residual Chlorine ☐ Dissolved Sulfide ☐ Dissolved Oxygen	☐	☐	☑
Proper preservation chemical(s) noted on COC and/or sample container	☑	☐	☐
Unpreserved aqueous sample(s) received for certain analyses			
☐ Volatile Organics ☐ Total Metals ☐ Dissolved Metals			
Acid/base preserved samples - pH within acceptable range	☐	☐	☑
Container(s) for certain analysis free of headspace	☑	☐	☑ VC 3/4/18
☑ Volatile Organics ☐ Dissolved Gases (RSK-175) ☐ Dissolved Oxygen (SM 4500)			
☐ Carbon Dioxide (SM 4500) ☐ Ferrous Iron (SM 3500) ☐ Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE: (Trip Blank Lot Number: 180313A)

Aqueous: ☐ VOA ☑ VOAh ☐ VOA**na$_2$** ☐ 100PJ ☐ 100PJ**na$_2$** ☐ 125AGB ☐ 125AGB**h** ☐ 125AGB**p** ☐ 125PB ☐ 125PB**znna** (pH__9)

☐ 250AGB ☐ 250CGB ☐ 250CGB**s** (pH__2) ☐ 250PB ☐ 250PB**n** (pH__2) ☐ 500AGB ☐ 500AGJ ☐ 500AGJ**s** (pH__2) ☐ 500PB

☐ 1AGB ☐ 1AGB**na$_2$** ☐ 1AGB**s** (pH__2) ☐ 1AGB**s** (O&G) ☐ 1PB ☐ 1PB**na** (pH__12) ☐ _____ ☐ _____ ☐ _____

Solid: ☐ 4ozCGJ ☐ 8ozCGJ ☐ 16ozCGJ ☐ Sleeve (___) ☐ EnCores® (___) ☑ TerraCores® (3) ☑ 2oz PJ ☐ _____ ☐ _____

Air: ☐ Tedlar™ ☐ Canister ☐ Sorbent Tube ☐ PUF ☐ _____ **Other Matrix** (_____): ☐ _____ ☐ _____ ☐ _____

Container: **A** = Amber, **B** = Bottle, **C** = Clear, **E** = Envelope, **G** = Glass, **J** = Jar, **P** = Plastic, and **Z** = Ziploc/Resealable Bag

Preservative: **b** = buffered, **f** = filtered, **h** = HCl, **n** = HNO_3, **na** = NaOH, **na$_2$** = $Na_2S_2O_3$, **p** = H_3PO_4, **s** = H_2SO_4, **u** = ultra-pure, **x** = Na_2SO_3+$NaHSO_4.H_2O$, **znna** = Zn $(CH_3CO_2)_2$ + NaOH

Labeled/Checked by: SR

Reviewed by: SR

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WORK ORDER NUMBER: 18-03-2132

The difference is service

AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: ERM-WEST

Client Project Name: Infineon / 0444392.002

Attention: Maggie Tymkow
1920 Main Street
Suite 300
Irvine, CA 92614-7279

Approved for release on 03/26/2018 by:
Virendra Patel
Project Manager

ResultLink

Email your PM

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Work Order Number: 18-03-2132

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Work Order Narrative

Work Order: 18-03-2132 Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 03/23/18. They were assigned to Work Order 18-03-2132.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

DoD Projects:

The test results contained in this report are accredited under the laboratory's ISO/IEC 17025:2005 and DoD-ELAP accreditation issued by the ANSI-ASQ National Accreditation Board. Refer to certificate and scope of accreditation ADE-1864.

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Sample Summary

Client:	ERM-WEST	Work Order:	18-03-2132
	1920 Main Street, Suite 300	Project Name:	Infineon / 0444392.002
	Irvine, CA 92614-7279	PO Number:	
		Date/Time Received:	03/23/18 18:00
		Number of Containers:	26
Attn:	Maggie Tymkow		

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
B1-2-6	18-03-2132-1	03/23/18 08:07	4	Solid
B1-2-25	18-03-2132-2	03/23/18 09:06	4	Solid
B1-2-32	18-03-2132-3	03/23/18 09:11	4	Solid
B1-2-49	18-03-2132-4	03/23/18 09:32	4	Solid
B1-2-80	18-03-2132-5	03/23/18 10:21	4	Solid
B1-12-80	18-03-2132-6	03/23/18 00:00	4	Solid
Trip Blk	18-03-2132-7	03/23/18 00:00	2	Aqueous

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Detections Summary

Client:	ERM-WEST	Work Order:	18-03-2132
	1920 Main Street, Suite 300	Project Name:	Infineon / 0444392.002
	Irvine, CA 92614-7279	Received:	03/23/18
Attn:	Maggie Tymkow		Page 1 of 1

Client SampleID

Analyte	Result	Qualifiers	RL	Units	Method	Extraction
B1-2-25 (18-03-2132-2)						
Tetrachloroethene	1.9		0.89	ug/kg	EPA 8260B	EPA 5035
B1-12-80 (18-03-2132-6)						
Tetrachloroethene	1.5		1.0	ug/kg	EPA 8260B	EPA 5035

Subcontracted analyses, if any, are not included in this summary.

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* MDL is shown

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/23/18
Work Order: 18-03-2132
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

Project: Infineon / 0444392.002

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Trip Blk	**18-03-2132-7-A**	**03/23/18 00:00**	**Aqueous**	**GC/MS RR**	**03/23/18**	**03/23/18 19:56**	**180323L041**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	20	1.00	
Benzene	ND	0.50	1.00	
Bromobenzene	ND	1.0	1.00	
Bromochloromethane	ND	1.0	1.00	
Bromodichloromethane	ND	1.0	1.00	
Bromoform	ND	1.0	1.00	
Bromomethane	ND	10	1.00	
2-Butanone	ND	10	1.00	
n-Butylbenzene	ND	1.0	1.00	
sec-Butylbenzene	ND	1.0	1.00	
tert-Butylbenzene	ND	1.0	1.00	
Carbon Disulfide	ND	10	1.00	
Carbon Tetrachloride	ND	0.50	1.00	
Chlorobenzene	ND	1.0	1.00	
Chloroethane	ND	5.0	1.00	
Chloroform	ND	1.0	1.00	
Chloromethane	ND	10	1.00	
2-Chlorotoluene	ND	1.0	1.00	
4-Chlorotoluene	ND	1.0	1.00	
Dibromochloromethane	ND	1.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.0	1.00	
1,2-Dibromoethane	ND	1.0	1.00	
Dibromomethane	ND	1.0	1.00	
1,2-Dichlorobenzene	ND	1.0	1.00	
1,3-Dichlorobenzene	ND	1.0	1.00	
1,4-Dichlorobenzene	ND	1.0	1.00	
Dichlorodifluoromethane	ND	1.0	1.00	
1,1-Dichloroethane	ND	1.0	1.00	
1,2-Dichloroethane	ND	0.50	1.00	
1,1-Dichloroethene	ND	1.0	1.00	
c-1,2-Dichloroethene	ND	1.0	1.00	
t-1,2-Dichloroethene	ND	1.0	1.00	
1,2-Dichloropropane	ND	1.0	1.00	
1,3-Dichloropropane	ND	1.0	1.00	
2,2-Dichloropropane	ND	1.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/23/18
1920 Main Street, Suite 300	Work Order:	18-03-2132
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/L
Project: Infineon / 0444392.002		Page 2 of 6

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	1.0	1.00	
c-1,3-Dichloropropene	ND	0.50	1.00	
t-1,3-Dichloropropene	ND	0.50	1.00	
Ethylbenzene	ND	1.0	1.00	
2-Hexanone	ND	10	1.00	
Isopropylbenzene	ND	1.0	1.00	
p-Isopropyltoluene	ND	1.0	1.00	
Methylene Chloride	ND	10	1.00	
4-Methyl-2-Pentanone	ND	10	1.00	
Naphthalene	ND	10	1.00	
n-Propylbenzene	ND	1.0	1.00	
Styrene	ND	1.0	1.00	
1,1,1,2-Tetrachloroethane	ND	1.0	1.00	
1,1,2,2-Tetrachloroethane	ND	1.0	1.00	
Tetrachloroethene	ND	1.0	1.00	
Toluene	ND	1.0	1.00	
1,2,3-Trichlorobenzene	ND	1.0	1.00	
1,2,4-Trichlorobenzene	ND	1.0	1.00	
1,1,1-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.00	
1,1,2-Trichloroethane	ND	1.0	1.00	
Trichloroethene	ND	1.0	1.00	
Trichlorofluoromethane	ND	10	1.00	
1,2,3-Trichloropropane	ND	5.0	1.00	
1,2,4-Trimethylbenzene	ND	1.0	1.00	
1,3,5-Trimethylbenzene	ND	1.0	1.00	
Vinyl Acetate	ND	10	1.00	
Vinyl Chloride	ND	0.50	1.00	
p/m-Xylene	ND	1.0	1.00	
o-Xylene	ND	1.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	1.0	1.00	
Tert-Butyl Alcohol (TBA)	ND	10	1.00	
Diisopropyl Ether (DIPE)	ND	2.0	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	2.0	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	2.0	1.00	
Ethanol	ND	100	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	85	77-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/23/18
1920 Main Street, Suite 300	Work Order:	18-03-2132
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/L
Project: Infineon / 0444392.002		Page 3 of 6

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	117	80-128	
1,2-Dichloroethane-d4	117	80-129	
Toluene-d8	99	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/23/18
Work Order: 18-03-2132
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

Project: Infineon / 0444392.002

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-14-001-25487**	**N/A**	**Aqueous**	**GC/MS RR**	**03/23/18**	**03/23/18 19:25**	**180323L041**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	20	1.00	
Benzene	ND	0.50	1.00	
Bromobenzene	ND	1.0	1.00	
Bromochloromethane	ND	1.0	1.00	
Bromodichloromethane	ND	1.0	1.00	
Bromoform	ND	1.0	1.00	
Bromomethane	ND	10	1.00	
2-Butanone	ND	10	1.00	
n-Butylbenzene	ND	1.0	1.00	
sec-Butylbenzene	ND	1.0	1.00	
tert-Butylbenzene	ND	1.0	1.00	
Carbon Disulfide	ND	10	1.00	
Carbon Tetrachloride	ND	0.50	1.00	
Chlorobenzene	ND	1.0	1.00	
Chloroethane	ND	5.0	1.00	
Chloroform	ND	1.0	1.00	
Chloromethane	ND	10	1.00	
2-Chlorotoluene	ND	1.0	1.00	
4-Chlorotoluene	ND	1.0	1.00	
Dibromochloromethane	ND	1.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.0	1.00	
1,2-Dibromoethane	ND	1.0	1.00	
Dibromomethane	ND	1.0	1.00	
1,2-Dichlorobenzene	ND	1.0	1.00	
1,3-Dichlorobenzene	ND	1.0	1.00	
1,4-Dichlorobenzene	ND	1.0	1.00	
Dichlorodifluoromethane	ND	1.0	1.00	
1,1-Dichloroethane	ND	1.0	1.00	
1,2-Dichloroethane	ND	0.50	1.00	
1,1-Dichloroethene	ND	1.0	1.00	
c-1,2-Dichloroethene	ND	1.0	1.00	
t-1,2-Dichloroethene	ND	1.0	1.00	
1,2-Dichloropropane	ND	1.0	1.00	
1,3-Dichloropropane	ND	1.0	1.00	
2,2-Dichloropropane	ND	1.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/23/18
1920 Main Street, Suite 300	Work Order:	18-03-2132
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/L
Project: Infineon / 0444392.002		Page 5 of 6

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	1.0	1.00	
c-1,3-Dichloropropene	ND	0.50	1.00	
t-1,3-Dichloropropene	ND	0.50	1.00	
Ethylbenzene	ND	1.0	1.00	
2-Hexanone	ND	10	1.00	
Isopropylbenzene	ND	1.0	1.00	
p-Isopropyltoluene	ND	1.0	1.00	
Methylene Chloride	ND	10	1.00	
4-Methyl-2-Pentanone	ND	10	1.00	
Naphthalene	ND	10	1.00	
n-Propylbenzene	ND	1.0	1.00	
Styrene	ND	1.0	1.00	
1,1,1,2-Tetrachloroethane	ND	1.0	1.00	
1,1,2,2-Tetrachloroethane	ND	1.0	1.00	
Tetrachloroethene	ND	1.0	1.00	
Toluene	ND	1.0	1.00	
1,2,3-Trichlorobenzene	ND	1.0	1.00	
1,2,4-Trichlorobenzene	ND	1.0	1.00	
1,1,1-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.00	
1,1,2-Trichloroethane	ND	1.0	1.00	
Trichloroethene	ND	1.0	1.00	
Trichlorofluoromethane	ND	10	1.00	
1,2,3-Trichloropropane	ND	5.0	1.00	
1,2,4-Trimethylbenzene	ND	1.0	1.00	
1,3,5-Trimethylbenzene	ND	1.0	1.00	
Vinyl Acetate	ND	10	1.00	
Vinyl Chloride	ND	0.50	1.00	
p/m-Xylene	ND	1.0	1.00	
o-Xylene	ND	1.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	1.0	1.00	
Tert-Butyl Alcohol (TBA)	ND	10	1.00	
Diisopropyl Ether (DIPE)	ND	2.0	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	2.0	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	2.0	1.00	
Ethanol	ND	100	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	86	77-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/23/18
1920 Main Street, Suite 300	Work Order:	18-03-2132
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/L
Project: Infineon / 0444392.002		Page 6 of 6

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	115	80-128	
1,2-Dichloroethane-d4	115	80-129	
Toluene-d8	99	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392.002

Date Received: 03/23/18
Work Order: 18-03-2132
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B1-2-6	**18-03-2132-1-C**	**03/23/18 08:07**	**Solid**	**GC/MS GGG**	**03/23/18**	**03/23/18 19:50**	**180323L032**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	49	1.00	
Benzene	ND	0.97	1.00	
Bromobenzene	ND	0.97	1.00	
Bromochloromethane	ND	1.9	1.00	
Bromodichloromethane	ND	0.97	1.00	
Bromoform	ND	4.9	1.00	
Bromomethane	ND	19	1.00	
2-Butanone	ND	19	1.00	
n-Butylbenzene	ND	0.97	1.00	
sec-Butylbenzene	ND	0.97	1.00	
tert-Butylbenzene	ND	0.97	1.00	
Carbon Disulfide	ND	9.7	1.00	
Carbon Tetrachloride	ND	0.97	1.00	
Chlorobenzene	ND	0.97	1.00	
Chloroethane	ND	1.9	1.00	
Chloroform	ND	0.97	1.00	
Chloromethane	ND	19	1.00	
2-Chlorotoluene	ND	0.97	1.00	
4-Chlorotoluene	ND	0.97	1.00	
Dibromochloromethane	ND	1.9	1.00	
1,2-Dibromo-3-Chloropropane	ND	4.9	1.00	
1,2-Dibromoethane	ND	0.97	1.00	
Dibromomethane	ND	0.97	1.00	
1,2-Dichlorobenzene	ND	0.97	1.00	
1,3-Dichlorobenzene	ND	0.97	1.00	
1,4-Dichlorobenzene	ND	0.97	1.00	
Dichlorodifluoromethane	ND	1.9	1.00	
1,1-Dichloroethane	ND	0.97	1.00	
1,2-Dichloroethane	ND	0.97	1.00	
1,1-Dichloroethene	ND	0.97	1.00	
c-1,2-Dichloroethene	ND	0.97	1.00	
t-1,2-Dichloroethene	ND	0.97	1.00	
1,2-Dichloropropane	ND	0.97	1.00	
1,3-Dichloropropane	ND	0.97	1.00	
2,2-Dichloropropane	ND	4.9	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/23/18
1920 Main Street, Suite 300	Work Order:	18-03-2132
Irvine, CA 92614-7279	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: Infineon / 0444392.002		Page 2 of 21

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	1.9	1.00	
c-1,3-Dichloropropene	ND	0.97	1.00	
t-1,3-Dichloropropene	ND	1.9	1.00	
Ethylbenzene	ND	0.97	1.00	
2-Hexanone	ND	19	1.00	
Isopropylbenzene	ND	0.97	1.00	
p-Isopropyltoluene	ND	0.97	1.00	
Methylene Chloride	ND	9.7	1.00	
4-Methyl-2-Pentanone	ND	19	1.00	
Naphthalene	ND	9.7	1.00	
n-Propylbenzene	ND	1.9	1.00	
Styrene	ND	0.97	1.00	
1,1,1,2-Tetrachloroethane	ND	0.97	1.00	
1,1,2,2-Tetrachloroethane	ND	1.9	1.00	
Tetrachloroethene	ND	0.97	1.00	
Toluene	ND	0.97	1.00	
1,2,3-Trichlorobenzene	ND	1.9	1.00	
1,2,4-Trichlorobenzene	ND	1.9	1.00	
1,1,1-Trichloroethane	ND	0.97	1.00	
1,1,2-Trichloroethane	ND	0.97	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	9.7	1.00	
Trichloroethene	ND	1.9	1.00	
Trichlorofluoromethane	ND	9.7	1.00	
1,2,3-Trichloropropane	ND	1.9	1.00	
1,2,4-Trimethylbenzene	ND	1.9	1.00	
1,3,5-Trimethylbenzene	ND	1.9	1.00	
Vinyl Acetate	ND	9.7	1.00	
Vinyl Chloride	ND	0.97	1.00	
p/m-Xylene	ND	1.9	1.00	
o-Xylene	ND	0.97	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	1.9	1.00	
Tert-Butyl Alcohol (TBA)	ND	19	1.00	
Diisopropyl Ether (DIPE)	ND	0.97	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.97	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.97	1.00	
Ethanol	ND	490	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	97	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/23/18
1920 Main Street, Suite 300	Work Order:	18-03-2132
Irvine, CA 92614-7279	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: Infineon / 0444392.002		Page 3 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	102	79-133	
1,2-Dichloroethane-d4	110	71-155	
Toluene-d8	100	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/23/18
Work Order: 18-03-2132
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Project: Infineon / 0444392.002

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B1-2-25	**18-03-2132-2-C**	**03/23/18 09:06**	**Solid**	**GC/MS GGG**	**03/23/18**	**03/23/18 20:19**	**180323L032**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	45	1.00	
Benzene	ND	0.89	1.00	
Bromobenzene	ND	0.89	1.00	
Bromochloromethane	ND	1.8	1.00	
Bromodichloromethane	ND	0.89	1.00	
Bromoform	ND	4.5	1.00	
Bromomethane	ND	18	1.00	
2-Butanone	ND	18	1.00	
n-Butylbenzene	ND	0.89	1.00	
sec-Butylbenzene	ND	0.89	1.00	
tert-Butylbenzene	ND	0.89	1.00	
Carbon Disulfide	ND	8.9	1.00	
Carbon Tetrachloride	ND	0.89	1.00	
Chlorobenzene	ND	0.89	1.00	
Chloroethane	ND	1.8	1.00	
Chloroform	ND	0.89	1.00	
Chloromethane	ND	18	1.00	
2-Chlorotoluene	ND	0.89	1.00	
4-Chlorotoluene	ND	0.89	1.00	
Dibromochloromethane	ND	1.8	1.00	
1,2-Dibromo-3-Chloropropane	ND	4.5	1.00	
1,2-Dibromoethane	ND	0.89	1.00	
Dibromomethane	ND	0.89	1.00	
1,2-Dichlorobenzene	ND	0.89	1.00	
1,3-Dichlorobenzene	ND	0.89	1.00	
1,4-Dichlorobenzene	ND	0.89	1.00	
Dichlorodifluoromethane	ND	1.8	1.00	
1,1-Dichloroethane	ND	0.89	1.00	
1,2-Dichloroethane	ND	0.89	1.00	
1,1-Dichloroethene	ND	0.89	1.00	
c-1,2-Dichloroethene	ND	0.89	1.00	
t-1,2-Dichloroethene	ND	0.89	1.00	
1,2-Dichloropropane	ND	0.89	1.00	
1,3-Dichloropropane	ND	0.89	1.00	
2,2-Dichloropropane	ND	4.5	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/23/18
1920 Main Street, Suite 300	Work Order:	18-03-2132
Irvine, CA 92614-7279	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: Infineon / 0444392.002		Page 5 of 21

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	1.8	1.00	
c-1,3-Dichloropropene	ND	0.89	1.00	
t-1,3-Dichloropropene	ND	1.8	1.00	
Ethylbenzene	ND	0.89	1.00	
2-Hexanone	ND	18	1.00	
Isopropylbenzene	ND	0.89	1.00	
p-Isopropyltoluene	ND	0.89	1.00	
Methylene Chloride	ND	8.9	1.00	
4-Methyl-2-Pentanone	ND	18	1.00	
Naphthalene	ND	8.9	1.00	
n-Propylbenzene	ND	1.8	1.00	
Styrene	ND	0.89	1.00	
1,1,1,2-Tetrachloroethane	ND	0.89	1.00	
1,1,2,2-Tetrachloroethane	ND	1.8	1.00	
Tetrachloroethene	1.9	0.89	1.00	
Toluene	ND	0.89	1.00	
1,2,3-Trichlorobenzene	ND	1.8	1.00	
1,2,4-Trichlorobenzene	ND	1.8	1.00	
1,1,1-Trichloroethane	ND	0.89	1.00	
1,1,2-Trichloroethane	ND	0.89	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	8.9	1.00	
Trichloroethene	ND	1.8	1.00	
Trichlorofluoromethane	ND	8.9	1.00	
1,2,3-Trichloropropane	ND	1.8	1.00	
1,2,4-Trimethylbenzene	ND	1.8	1.00	
1,3,5-Trimethylbenzene	ND	1.8	1.00	
Vinyl Acetate	ND	8.9	1.00	
Vinyl Chloride	ND	0.89	1.00	
p/m-Xylene	ND	1.8	1.00	
o-Xylene	ND	0.89	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	1.8	1.00	
Tert-Butyl Alcohol (TBA)	ND	18	1.00	
Diisopropyl Ether (DIPE)	ND	0.89	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.89	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.89	1.00	
Ethanol	ND	450	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	95	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/23/18
1920 Main Street, Suite 300	Work Order:	18-03-2132
Irvine, CA 92614-7279	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: Infineon / 0444392.002		Page 6 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	101	79-133	
1,2-Dichloroethane-d4	111	71-155	
Toluene-d8	101	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392.002

Date Received: 03/23/18
Work Order: 18-03-2132
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B1-2-32	**18-03-2132-3-C**	**03/23/18 09:11**	**Solid**	**GC/MS GGG**	**03/23/18**	**03/23/18 20:47**	**180323L032**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	55	1.00	
Benzene	ND	1.1	1.00	
Bromobenzene	ND	1.1	1.00	
Bromochloromethane	ND	2.2	1.00	
Bromodichloromethane	ND	1.1	1.00	
Bromoform	ND	5.5	1.00	
Bromomethane	ND	22	1.00	
2-Butanone	ND	22	1.00	
n-Butylbenzene	ND	1.1	1.00	
sec-Butylbenzene	ND	1.1	1.00	
tert-Butylbenzene	ND	1.1	1.00	
Carbon Disulfide	ND	11	1.00	
Carbon Tetrachloride	ND	1.1	1.00	
Chlorobenzene	ND	1.1	1.00	
Chloroethane	ND	2.2	1.00	
Chloroform	ND	1.1	1.00	
Chloromethane	ND	22	1.00	
2-Chlorotoluene	ND	1.1	1.00	
4-Chlorotoluene	ND	1.1	1.00	
Dibromochloromethane	ND	2.2	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.5	1.00	
1,2-Dibromoethane	ND	1.1	1.00	
Dibromomethane	ND	1.1	1.00	
1,2-Dichlorobenzene	ND	1.1	1.00	
1,3-Dichlorobenzene	ND	1.1	1.00	
1,4-Dichlorobenzene	ND	1.1	1.00	
Dichlorodifluoromethane	ND	2.2	1.00	
1,1-Dichloroethane	ND	1.1	1.00	
1,2-Dichloroethane	ND	1.1	1.00	
1,1-Dichloroethene	ND	1.1	1.00	
c-1,2-Dichloroethene	ND	1.1	1.00	
t-1,2-Dichloroethene	ND	1.1	1.00	
1,2-Dichloropropane	ND	1.1	1.00	
1,3-Dichloropropane	ND	1.1	1.00	
2,2-Dichloropropane	ND	5.5	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/23/18
1920 Main Street, Suite 300	Work Order:	18-03-2132
Irvine, CA 92614-7279	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: Infineon / 0444392.002		Page 8 of 21

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.2	1.00	
c-1,3-Dichloropropene	ND	1.1	1.00	
t-1,3-Dichloropropene	ND	2.2	1.00	
Ethylbenzene	ND	1.1	1.00	
2-Hexanone	ND	22	1.00	
Isopropylbenzene	ND	1.1	1.00	
p-Isopropyltoluene	ND	1.1	1.00	
Methylene Chloride	ND	11	1.00	
4-Methyl-2-Pentanone	ND	22	1.00	
Naphthalene	ND	11	1.00	
n-Propylbenzene	ND	2.2	1.00	
Styrene	ND	1.1	1.00	
1,1,1,2-Tetrachloroethane	ND	1.1	1.00	
1,1,2,2-Tetrachloroethane	ND	2.2	1.00	
Tetrachloroethene	ND	1.1	1.00	
Toluene	ND	1.1	1.00	
1,2,3-Trichlorobenzene	ND	2.2	1.00	
1,2,4-Trichlorobenzene	ND	2.2	1.00	
1,1,1-Trichloroethane	ND	1.1	1.00	
1,1,2-Trichloroethane	ND	1.1	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	11	1.00	
Trichloroethene	ND	2.2	1.00	
Trichlorofluoromethane	ND	11	1.00	
1,2,3-Trichloropropane	ND	2.2	1.00	
1,2,4-Trimethylbenzene	ND	2.2	1.00	
1,3,5-Trimethylbenzene	ND	2.2	1.00	
Vinyl Acetate	ND	11	1.00	
Vinyl Chloride	ND	1.1	1.00	
p/m-Xylene	ND	2.2	1.00	
o-Xylene	ND	1.1	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.2	1.00	
Tert-Butyl Alcohol (TBA)	ND	22	1.00	
Diisopropyl Ether (DIPE)	ND	1.1	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.1	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.1	1.00	
Ethanol	ND	550	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	96	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/23/18
1920 Main Street, Suite 300	Work Order:	18-03-2132
Irvine, CA 92614-7279	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: Infineon / 0444392.002		Page 9 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	100	79-133	
1,2-Dichloroethane-d4	110	71-155	
Toluene-d8	100	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392.002

Date Received: 03/23/18
Work Order: 18-03-2132
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B1-2-49	**18-03-2132-4-C**	**03/23/18 09:32**	**Solid**	**GC/MS GGG**	**03/23/18**	**03/23/18 21:15**	**180323L032**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	54	1.00	
Benzene	ND	1.1	1.00	
Bromobenzene	ND	1.1	1.00	
Bromochloromethane	ND	2.2	1.00	
Bromodichloromethane	ND	1.1	1.00	
Bromoform	ND	5.4	1.00	
Bromomethane	ND	22	1.00	
2-Butanone	ND	22	1.00	
n-Butylbenzene	ND	1.1	1.00	
sec-Butylbenzene	ND	1.1	1.00	
tert-Butylbenzene	ND	1.1	1.00	
Carbon Disulfide	ND	11	1.00	
Carbon Tetrachloride	ND	1.1	1.00	
Chlorobenzene	ND	1.1	1.00	
Chloroethane	ND	2.2	1.00	
Chloroform	ND	1.1	1.00	
Chloromethane	ND	22	1.00	
2-Chlorotoluene	ND	1.1	1.00	
4-Chlorotoluene	ND	1.1	1.00	
Dibromochloromethane	ND	2.2	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.4	1.00	
1,2-Dibromoethane	ND	1.1	1.00	
Dibromomethane	ND	1.1	1.00	
1,2-Dichlorobenzene	ND	1.1	1.00	
1,3-Dichlorobenzene	ND	1.1	1.00	
1,4-Dichlorobenzene	ND	1.1	1.00	
Dichlorodifluoromethane	ND	2.2	1.00	
1,1-Dichloroethane	ND	1.1	1.00	
1,2-Dichloroethane	ND	1.1	1.00	
1,1-Dichloroethene	ND	1.1	1.00	
c-1,2-Dichloroethene	ND	1.1	1.00	
t-1,2-Dichloroethene	ND	1.1	1.00	
1,2-Dichloropropane	ND	1.1	1.00	
1,3-Dichloropropane	ND	1.1	1.00	
2,2-Dichloropropane	ND	5.4	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392.002

Date Received: 03/23/18
Work Order: 18-03-2132
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.2	1.00	
c-1,3-Dichloropropene	ND	1.1	1.00	
t-1,3-Dichloropropene	ND	2.2	1.00	
Ethylbenzene	ND	1.1	1.00	
2-Hexanone	ND	22	1.00	
Isopropylbenzene	ND	1.1	1.00	
p-Isopropyltoluene	ND	1.1	1.00	
Methylene Chloride	ND	11	1.00	
4-Methyl-2-Pentanone	ND	22	1.00	
Naphthalene	ND	11	1.00	
n-Propylbenzene	ND	2.2	1.00	
Styrene	ND	1.1	1.00	
1,1,1,2-Tetrachloroethane	ND	1.1	1.00	
1,1,2,2-Tetrachloroethane	ND	2.2	1.00	
Tetrachloroethene	ND	1.1	1.00	
Toluene	ND	1.1	1.00	
1,2,3-Trichlorobenzene	ND	2.2	1.00	
1,2,4-Trichlorobenzene	ND	2.2	1.00	
1,1,1-Trichloroethane	ND	1.1	1.00	
1,1,2-Trichloroethane	ND	1.1	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	11	1.00	
Trichloroethene	ND	2.2	1.00	
Trichlorofluoromethane	ND	11	1.00	
1,2,3-Trichloropropane	ND	2.2	1.00	
1,2,4-Trimethylbenzene	ND	2.2	1.00	
1,3,5-Trimethylbenzene	ND	2.2	1.00	
Vinyl Acetate	ND	11	1.00	
Vinyl Chloride	ND	1.1	1.00	
p/m-Xylene	ND	2.2	1.00	
o-Xylene	ND	1.1	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.2	1.00	
Tert-Butyl Alcohol (TBA)	ND	22	1.00	
Diisopropyl Ether (DIPE)	ND	1.1	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.1	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.1	1.00	
Ethanol	ND	540	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	95	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/23/18
1920 Main Street, Suite 300	Work Order:	18-03-2132
Irvine, CA 92614-7279	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: Infineon / 0444392.002		Page 12 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	100	79-133	
1,2-Dichloroethane-d4	110	71-155	
Toluene-d8	100	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392.002

Date Received: 03/23/18
Work Order: 18-03-2132
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B1-2-80	**18-03-2132-5-C**	**03/23/18 10:21**	**Solid**	**GC/MS GGG**	**03/23/18**	**03/23/18 21:44**	**180323L032**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	57	1.00	
Benzene	ND	1.1	1.00	
Bromobenzene	ND	1.1	1.00	
Bromochloromethane	ND	2.3	1.00	
Bromodichloromethane	ND	1.1	1.00	
Bromoform	ND	5.7	1.00	
Bromomethane	ND	23	1.00	
2-Butanone	ND	23	1.00	
n-Butylbenzene	ND	1.1	1.00	
sec-Butylbenzene	ND	1.1	1.00	
tert-Butylbenzene	ND	1.1	1.00	
Carbon Disulfide	ND	11	1.00	
Carbon Tetrachloride	ND	1.1	1.00	
Chlorobenzene	ND	1.1	1.00	
Chloroethane	ND	2.3	1.00	
Chloroform	ND	1.1	1.00	
Chloromethane	ND	23	1.00	
2-Chlorotoluene	ND	1.1	1.00	
4-Chlorotoluene	ND	1.1	1.00	
Dibromochloromethane	ND	2.3	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.7	1.00	
1,2-Dibromoethane	ND	1.1	1.00	
Dibromomethane	ND	1.1	1.00	
1,2-Dichlorobenzene	ND	1.1	1.00	
1,3-Dichlorobenzene	ND	1.1	1.00	
1,4-Dichlorobenzene	ND	1.1	1.00	
Dichlorodifluoromethane	ND	2.3	1.00	
1,1-Dichloroethane	ND	1.1	1.00	
1,2-Dichloroethane	ND	1.1	1.00	
1,1-Dichloroethene	ND	1.1	1.00	
c-1,2-Dichloroethene	ND	1.1	1.00	
t-1,2-Dichloroethene	ND	1.1	1.00	
1,2-Dichloropropane	ND	1.1	1.00	
1,3-Dichloropropane	ND	1.1	1.00	
2,2-Dichloropropane	ND	5.7	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392.002

Date Received: 03/23/18
Work Order: 18-03-2132
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.3	1.00	
c-1,3-Dichloropropene	ND	1.1	1.00	
t-1,3-Dichloropropene	ND	2.3	1.00	
Ethylbenzene	ND	1.1	1.00	
2-Hexanone	ND	23	1.00	
Isopropylbenzene	ND	1.1	1.00	
p-Isopropyltoluene	ND	1.1	1.00	
Methylene Chloride	ND	11	1.00	
4-Methyl-2-Pentanone	ND	23	1.00	
Naphthalene	ND	11	1.00	
n-Propylbenzene	ND	2.3	1.00	
Styrene	ND	1.1	1.00	
1,1,1,2-Tetrachloroethane	ND	1.1	1.00	
1,1,2,2-Tetrachloroethane	ND	2.3	1.00	
Tetrachloroethene	ND	1.1	1.00	
Toluene	ND	1.1	1.00	
1,2,3-Trichlorobenzene	ND	2.3	1.00	
1,2,4-Trichlorobenzene	ND	2.3	1.00	
1,1,1-Trichloroethane	ND	1.1	1.00	
1,1,2-Trichloroethane	ND	1.1	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	11	1.00	
Trichloroethene	ND	2.3	1.00	
Trichlorofluoromethane	ND	11	1.00	
1,2,3-Trichloropropane	ND	2.3	1.00	
1,2,4-Trimethylbenzene	ND	2.3	1.00	
1,3,5-Trimethylbenzene	ND	2.3	1.00	
Vinyl Acetate	ND	11	1.00	
Vinyl Chloride	ND	1.1	1.00	
p/m-Xylene	ND	2.3	1.00	
o-Xylene	ND	1.1	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.3	1.00	
Tert-Butyl Alcohol (TBA)	ND	23	1.00	
Diisopropyl Ether (DIPE)	ND	1.1	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.1	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.1	1.00	
Ethanol	ND	570	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	97	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/23/18
1920 Main Street, Suite 300	Work Order:	18-03-2132
Irvine, CA 92614-7279	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: Infineon / 0444392.002		Page 15 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	101	79-133	
1,2-Dichloroethane-d4	112	71-155	
Toluene-d8	101	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392.002

Date Received: 03/23/18
Work Order: 18-03-2132
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B1-12-80	**18-03-2132-6-C**	**03/23/18 00:00**	**Solid**	**GC/MS GGG**	**03/23/18**	**03/23/18 22:12**	**180323L032**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	52	1.00	
Benzene	ND	1.0	1.00	
Bromobenzene	ND	1.0	1.00	
Bromochloromethane	ND	2.1	1.00	
Bromodichloromethane	ND	1.0	1.00	
Bromoform	ND	5.2	1.00	
Bromomethane	ND	21	1.00	
2-Butanone	ND	21	1.00	
n-Butylbenzene	ND	1.0	1.00	
sec-Butylbenzene	ND	1.0	1.00	
tert-Butylbenzene	ND	1.0	1.00	
Carbon Disulfide	ND	10	1.00	
Carbon Tetrachloride	ND	1.0	1.00	
Chlorobenzene	ND	1.0	1.00	
Chloroethane	ND	2.1	1.00	
Chloroform	ND	1.0	1.00	
Chloromethane	ND	21	1.00	
2-Chlorotoluene	ND	1.0	1.00	
4-Chlorotoluene	ND	1.0	1.00	
Dibromochloromethane	ND	2.1	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.2	1.00	
1,2-Dibromoethane	ND	1.0	1.00	
Dibromomethane	ND	1.0	1.00	
1,2-Dichlorobenzene	ND	1.0	1.00	
1,3-Dichlorobenzene	ND	1.0	1.00	
1,4-Dichlorobenzene	ND	1.0	1.00	
Dichlorodifluoromethane	ND	2.1	1.00	
1,1-Dichloroethane	ND	1.0	1.00	
1,2-Dichloroethane	ND	1.0	1.00	
1,1-Dichloroethene	ND	1.0	1.00	
c-1,2-Dichloroethene	ND	1.0	1.00	
t-1,2-Dichloroethene	ND	1.0	1.00	
1,2-Dichloropropane	ND	1.0	1.00	
1,3-Dichloropropane	ND	1.0	1.00	
2,2-Dichloropropane	ND	5.2	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392.002

Date Received: 03/23/18
Work Order: 18-03-2132
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.1	1.00	
c-1,3-Dichloropropene	ND	1.0	1.00	
t-1,3-Dichloropropene	ND	2.1	1.00	
Ethylbenzene	ND	1.0	1.00	
2-Hexanone	ND	21	1.00	
Isopropylbenzene	ND	1.0	1.00	
p-Isopropyltoluene	ND	1.0	1.00	
Methylene Chloride	ND	10	1.00	
4-Methyl-2-Pentanone	ND	21	1.00	
Naphthalene	ND	10	1.00	
n-Propylbenzene	ND	2.1	1.00	
Styrene	ND	1.0	1.00	
1,1,1,2-Tetrachloroethane	ND	1.0	1.00	
1,1,2,2-Tetrachloroethane	ND	2.1	1.00	
Tetrachloroethene	1.5	1.0	1.00	
Toluene	ND	1.0	1.00	
1,2,3-Trichlorobenzene	ND	2.1	1.00	
1,2,4-Trichlorobenzene	ND	2.1	1.00	
1,1,1-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.00	
Trichloroethene	ND	2.1	1.00	
Trichlorofluoromethane	ND	10	1.00	
1,2,3-Trichloropropane	ND	2.1	1.00	
1,2,4-Trimethylbenzene	ND	2.1	1.00	
1,3,5-Trimethylbenzene	ND	2.1	1.00	
Vinyl Acetate	ND	10	1.00	
Vinyl Chloride	ND	1.0	1.00	
p/m-Xylene	ND	2.1	1.00	
o-Xylene	ND	1.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.1	1.00	
Tert-Butyl Alcohol (TBA)	ND	21	1.00	
Diisopropyl Ether (DIPE)	ND	1.0	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.0	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.0	1.00	
Ethanol	ND	520	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	95	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/23/18
1920 Main Street, Suite 300	Work Order:	18-03-2132
Irvine, CA 92614-7279	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: Infineon / 0444392.002		Page 18 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	99	79-133	
1,2-Dichloroethane-d4	109	71-155	
Toluene-d8	100	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392.002

Date Received: 03/23/18
Work Order: 18-03-2132
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**095-01-025-29797**	**N/A**	**Solid**	**GC/MS GGG**	**03/23/18**	**03/23/18 18:54**	**180323L032**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	50	1.00	
Benzene	ND	1.0	1.00	
Bromobenzene	ND	1.0	1.00	
Bromochloromethane	ND	2.0	1.00	
Bromodichloromethane	ND	1.0	1.00	
Bromoform	ND	5.0	1.00	
Bromomethane	ND	20	1.00	
2-Butanone	ND	20	1.00	
n-Butylbenzene	ND	1.0	1.00	
sec-Butylbenzene	ND	1.0	1.00	
tert-Butylbenzene	ND	1.0	1.00	
Carbon Disulfide	ND	10	1.00	
Carbon Tetrachloride	ND	1.0	1.00	
Chlorobenzene	ND	1.0	1.00	
Chloroethane	ND	2.0	1.00	
Chloroform	ND	1.0	1.00	
Chloromethane	ND	20	1.00	
2-Chlorotoluene	ND	1.0	1.00	
4-Chlorotoluene	ND	1.0	1.00	
Dibromochloromethane	ND	2.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.0	1.00	
1,2-Dibromoethane	ND	1.0	1.00	
Dibromomethane	ND	1.0	1.00	
1,2-Dichlorobenzene	ND	1.0	1.00	
1,3-Dichlorobenzene	ND	1.0	1.00	
1,4-Dichlorobenzene	ND	1.0	1.00	
Dichlorodifluoromethane	ND	2.0	1.00	
1,1-Dichloroethane	ND	1.0	1.00	
1,2-Dichloroethane	ND	1.0	1.00	
1,1-Dichloroethene	ND	1.0	1.00	
c-1,2-Dichloroethene	ND	1.0	1.00	
t-1,2-Dichloroethene	ND	1.0	1.00	
1,2-Dichloropropane	ND	1.0	1.00	
1,3-Dichloropropane	ND	1.0	1.00	
2,2-Dichloropropane	ND	5.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/23/18
1920 Main Street, Suite 300		Work Order:	18-03-2132
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392.002			Page 20 of 21

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.0	1.00	
c-1,3-Dichloropropene	ND	1.0	1.00	
t-1,3-Dichloropropene	ND	2.0	1.00	
Ethylbenzene	ND	1.0	1.00	
2-Hexanone	ND	20	1.00	
Isopropylbenzene	ND	1.0	1.00	
p-Isopropyltoluene	ND	1.0	1.00	
Methylene Chloride	ND	10	1.00	
4-Methyl-2-Pentanone	ND	20	1.00	
Naphthalene	ND	10	1.00	
n-Propylbenzene	ND	2.0	1.00	
Styrene	ND	1.0	1.00	
1,1,1,2-Tetrachloroethane	ND	1.0	1.00	
1,1,2,2-Tetrachloroethane	ND	2.0	1.00	
Tetrachloroethene	ND	1.0	1.00	
Toluene	ND	1.0	1.00	
1,2,3-Trichlorobenzene	ND	2.0	1.00	
1,2,4-Trichlorobenzene	ND	2.0	1.00	
1,1,1-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.00	
Trichloroethene	ND	2.0	1.00	
Trichlorofluoromethane	ND	10	1.00	
1,2,3-Trichloropropane	ND	2.0	1.00	
1,2,4-Trimethylbenzene	ND	2.0	1.00	
1,3,5-Trimethylbenzene	ND	2.0	1.00	
Vinyl Acetate	ND	10	1.00	
Vinyl Chloride	ND	1.0	1.00	
p/m-Xylene	ND	2.0	1.00	
o-Xylene	ND	1.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.0	1.00	
Tert-Butyl Alcohol (TBA)	ND	20	1.00	
Diisopropyl Ether (DIPE)	ND	1.0	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.0	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.0	1.00	
Ethanol	ND	500	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	96	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/23/18
1920 Main Street, Suite 300	Work Order:	18-03-2132
Irvine, CA 92614-7279	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: Infineon / 0444392.002		Page 21 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	96	79-133	
1,2-Dichloroethane-d4	102	71-155	
Toluene-d8	99	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Quality Control - LCS/LCSD

ERM-WEST		Date Received:	03/23/18
1920 Main Street, Suite 300		Work Order:	18-03-2132
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
Project: Infineon / 0444392.002			Page 1 of 4

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-14-001-25487	**LCS**	**Aqueous**	**GC/MS RR**	**03/23/18**	**03/23/18 16:21**	**180323L041**
099-14-001-25487	**LCSD**	**Aqueous**	**GC/MS RR**	**03/23/18**	**03/23/18 16:52**	**180323L041**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Acetone	50.00	40.64	81	41.71	83	53-137	39-151	3	0-21	
Benzene	50.00	46.99	94	49.85	100	79-121	72-128	6	0-20	
Bromobenzene	50.00	47.08	94	51.86	104	80-120	73-127	10	0-20	
Bromochloromethane	50.00	50.48	101	54.50	109	80-122	73-129	8	0-20	
Bromodichloromethane	50.00	49.32	99	53.50	107	80-124	73-131	8	0-20	
Bromoform	50.00	46.59	93	51.45	103	73-127	64-136	10	0-20	
Bromomethane	50.00	32.24	64	30.48	61	50-150	33-167	6	0-26	
2-Butanone	50.00	47.09	94	48.42	97	60-126	49-137	3	0-20	
n-Butylbenzene	50.00	48.35	97	50.81	102	72-138	61-149	5	0-20	
sec-Butylbenzene	50.00	50.00	100	51.59	103	77-131	68-140	3	0-20	
tert-Butylbenzene	50.00	48.80	98	50.63	101	80-125	72-132	4	0-20	
Carbon Disulfide	50.00	49.40	99	49.39	99	50-150	33-167	0	0-22	
Carbon Tetrachloride	50.00	54.18	108	53.29	107	65-143	52-156	2	0-20	
Chlorobenzene	50.00	47.45	95	50.85	102	80-120	73-127	7	0-20	
Chloroethane	50.00	57.56	115	58.54	117	62-128	51-139	2	0-20	
Chloroform	50.00	49.07	98	52.75	105	80-120	73-127	7	0-20	
Chloromethane	50.00	30.95	62	33.20	66	43-133	28-148	7	0-20	
2-Chlorotoluene	50.00	49.20	98	52.87	106	80-121	73-128	7	0-20	
4-Chlorotoluene	50.00	48.04	96	52.27	105	80-120	73-127	8	0-20	
Dibromochloromethane	50.00	47.34	95	52.39	105	80-123	73-130	10	0-20	
1,2-Dibromo-3-Chloropropane	50.00	47.03	94	49.97	100	66-126	56-136	6	0-20	
1,2-Dibromoethane	50.00	48.36	97	53.12	106	80-120	73-127	9	0-20	
Dibromomethane	50.00	49.21	98	53.92	108	80-120	73-127	9	0-20	
1,2-Dichlorobenzene	50.00	45.56	91	50.50	101	80-120	73-127	10	0-20	
1,3-Dichlorobenzene	50.00	46.03	92	50.87	102	80-120	73-127	10	0-20	
1,4-Dichlorobenzene	50.00	45.23	90	50.23	100	80-120	73-127	10	0-20	
Dichlorodifluoromethane	50.00	49.89	100	43.29	87	50-150	33-167	14	0-30	
1,1-Dichloroethane	50.00	48.76	98	51.54	103	72-126	63-135	6	0-20	
1,2-Dichloroethane	50.00	47.55	95	52.39	105	76-120	69-127	10	0-20	
1,1-Dichloroethene	50.00	50.41	101	49.57	99	66-132	55-143	2	0-20	
c-1,2-Dichloroethene	50.00	46.94	94	50.05	100	78-120	71-127	6	0-20	
t-1,2-Dichloroethene	50.00	48.29	97	49.82	100	66-132	55-143	3	0-20	
1,2-Dichloropropane	50.00	47.13	94	51.48	103	80-120	73-127	9	0-20	
1,3-Dichloropropane	50.00	46.88	94	51.31	103	80-120	73-127	9	0-20	
2,2-Dichloropropane	50.00	47.70	95	46.73	93	50-150	33-167	2	0-20	
1,1-Dichloropropene	50.00	49.65	99	48.95	98	75-123	67-131	1	0-20	

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS/LCSD

ERM-WEST		Date Received:	03/23/18
1920 Main Street, Suite 300		Work Order:	18-03-2132
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
Project: Infineon / 0444392.002			Page 2 of 4

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
c-1,3-Dichloropropene	50.00	46.07	92	51.07	102	77-131	68-140	10	0-20	
t-1,3-Dichloropropene	50.00	45.12	90	49.95	100	76-136	66-146	10	0-20	
Ethylbenzene	50.00	50.27	101	52.72	105	80-120	73-127	5	0-20	
2-Hexanone	50.00	47.78	96	49.61	99	63-123	53-133	4	0-20	
Isopropylbenzene	50.00	49.77	100	51.31	103	80-128	72-136	3	0-20	
p-Isopropyltoluene	50.00	48.99	98	51.47	103	73-133	63-143	5	0-20	
Methylene Chloride	50.00	48.85	98	52.38	105	61-133	49-145	7	0-27	
4-Methyl-2-Pentanone	50.00	47.62	95	50.88	102	65-125	55-135	7	0-20	
Naphthalene	50.00	42.05	84	48.14	96	69-129	59-139	14	0-20	
n-Propylbenzene	50.00	51.92	104	53.73	107	80-128	72-136	3	0-20	
Styrene	50.00	50.32	101	54.41	109	80-126	72-134	8	0-20	
1,1,1,2-Tetrachloroethane	50.00	47.76	96	51.46	103	80-129	72-137	7	0-20	
1,1,2,2-Tetrachloroethane	50.00	48.57	97	52.91	106	74-122	66-130	9	0-20	
Tetrachloroethene	50.00	45.66	91	46.82	94	55-139	41-153	2	0-23	
Toluene	50.00	49.14	98	52.29	105	80-120	73-127	6	0-20	
1,2,3-Trichlorobenzene	50.00	41.50	83	48.71	97	72-132	62-142	16	0-20	
1,2,4-Trichlorobenzene	50.00	38.35	77	44.63	89	74-134	64-144	15	0-20	
1,1,1-Trichloroethane	50.00	49.66	99	50.09	100	76-124	68-132	1	0-20	
1,1,2-Trichloro-1,2,2-Trifluoroethane	50.00	54.63	109	48.87	98	54-150	38-166	11	0-30	
1,1,2-Trichloroethane	50.00	48.11	96	53.00	106	80-120	73-127	10	0-20	
Trichloroethene	50.00	48.43	97	50.78	102	79-121	72-128	5	0-20	
Trichlorofluoromethane	50.00	61.01	122	54.74	109	72-132	62-142	11	0-20	
1,2,3-Trichloropropane	50.00	49.48	99	53.48	107	75-123	67-131	8	0-20	
1,2,4-Trimethylbenzene	50.00	48.75	98	53.10	106	74-128	65-137	9	0-20	
1,3,5-Trimethylbenzene	50.00	49.92	100	52.92	106	77-131	68-140	6	0-20	
Vinyl Acetate	50.00	45.75	92	51.26	103	50-150	33-167	11	0-20	
Vinyl Chloride	50.00	57.55	115	55.09	110	63-129	52-140	4	0-20	
p/m-Xylene	100.0	102.7	103	108.1	108	80-122	73-129	5	0-20	
o-Xylene	50.00	49.59	99	53.52	107	80-128	72-136	8	0-20	
Methyl-t-Butyl Ether (MTBE)	50.00	43.33	87	48.61	97	69-123	60-132	11	0-20	
Tert-Butyl Alcohol (TBA)	250.0	231.2	92	260.6	104	80-124	73-131	12	0-20	
Diisopropyl Ether (DIPE)	50.00	47.28	95	51.39	103	79-121	72-128	8	0-20	
Ethyl-t-Butyl Ether (ETBE)	50.00	42.71	85	47.96	96	71-125	62-134	12	0-20	
Tert-Amyl-Methyl Ether (TAME)	50.00	44.25	88	49.13	98	70-124	61-133	10	0-20	
Ethanol	500.0	630.5	126	672.1	134	53-149	37-165	6	0-24	

Total number of LCS compounds: 71
Total number of ME compounds: 0

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS/LCSD

ERM-WEST	Date Received:	03/23/18
1920 Main Street, Suite 300	Work Order:	18-03-2132
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
Project: Infineon / 0444392.002		Page 3 of 4

Total number of ME compounds allowed: 4
LCS ME CL validation result: Pass

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS/LCSD

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392.002

Date Received: 03/23/18
Work Order: 18-03-2132
Preparation: EPA 5035
Method: EPA 8260B

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
095-01-025-29797	**LCS**	**Solid**	**GC/MS GGG**	**03/23/18**	**03/23/18 15:38**	**180323L032**
095-01-025-29797	**LCSD**	**Solid**	**GC/MS GGG**	**03/23/18**	**03/23/18 16:06**	**180323L032**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Benzene	50.00	47.97	96	46.81	94	80-120	73-127	2	0-20	
Carbon Tetrachloride	50.00	46.99	94	46.55	93	65-137	53-149	1	0-20	
Chlorobenzene	50.00	49.64	99	49.02	98	80-120	73-127	1	0-20	
1,2-Dibromoethane	50.00	48.42	97	48.23	96	80-120	73-127	0	0-20	
1,2-Dichlorobenzene	50.00	49.94	100	49.64	99	80-120	73-127	1	0-20	
1,2-Dichloroethane	50.00	50.73	101	50.72	101	80-120	73-127	0	0-20	
1,1-Dichloroethene	50.00	50.10	100	48.95	98	68-128	58-138	2	0-20	
Ethylbenzene	50.00	51.28	103	50.78	102	80-120	73-127	1	0-20	
Toluene	50.00	49.13	98	47.90	96	80-120	73-127	3	0-20	
Trichloroethene	50.00	51.12	102	49.18	98	80-120	73-127	4	0-20	
Vinyl Chloride	50.00	54.77	110	57.80	116	67-127	57-137	5	0-20	
p/m-Xylene	100.0	103.1	103	102.2	102	75-125	67-133	1	0-25	
o-Xylene	50.00	51.56	103	51.11	102	75-125	67-133	1	0-25	
Methyl-t-Butyl Ether (MTBE)	50.00	47.89	96	48.76	98	70-124	61-133	2	0-20	
Tert-Butyl Alcohol (TBA)	250.0	245.2	98	244.4	98	73-121	65-129	0	0-20	
Diisopropyl Ether (DIPE)	50.00	50.84	102	51.26	103	69-129	59-139	1	0-20	
Ethyl-t-Butyl Ether (ETBE)	50.00	49.04	98	50.12	100	70-124	61-133	2	0-20	
Tert-Amyl-Methyl Ether (TAME)	50.00	48.44	97	48.67	97	74-122	66-130	0	0-20	
Ethanol	500.0	452.7	91	452.7	91	51-135	37-149	0	0-27	

Total number of LCS compounds: 19
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

RPD: Relative Percent Difference. CL: Control Limits

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Sample Analysis Summary Report

Work Order: 18-03-2132 Page 1 of 1

Method	Extraction	Chemist ID	Instrument	Analytical Location
EPA 8260B	EPA 5035	1126	GC/MS GGG	2
EPA 8260B	EPA 5030C	1126	GC/MS RR	2

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Glossary of Terms and Qualifiers

Work Order: 18-03-2132 Page 1 of 1

Qualifiers	Definition
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
CI	See case narrative.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

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7440 Lincoln Way, Garden Grove, CA 92841-1427 • (714) 895-5494
For courier service / sample drop off information, contact us26_sales@eurofinsus.com or call us.

CHAIN-OF-CUSTODY RECORD

Date 03/23/2018
Page 1 of 1

WO NO. / LAB USE ONLY
18-03-2132

LABORATORY CLIENT: ERM
ADDRESS: 1920 Main Street - Suite 300
CITY: Irvine STATE: CA ZIP: 92614
TEL: 949-623-4700 E-MAIL: See Special Instructions

CLIENT PROJECT NAME / NO.: Infineon
P.O. NO.: 0444392-002
PROJECT CONTACT: Maggie Tymkow
LAB CONTACT OR QUOTE NO: Virendra Patel
GLOBAL ID:
LOG CODE:
SAMPLER(S): (PRINT) Manuel Leon

TURNAROUND TIME (Rush surcharges may apply to any TAT not "STANDARD"):
☐ SAME DAY ☒ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAYS ☐ STANDARD

EDD
☐ COELT EDF ☐ OTHER

SPECIAL INSTRUCTIONS:
EQUIS
Email to: Maggie.TymKow@erm.com
Stewart.EmHof@erm.com
Brad.Cross@erm.com
Tony.Parenteau@erm.com

REQUESTED ANALYSES
Please check box or fill in blank as needed.

LAB USE ONLY	SAMPLE ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	Unpreserved	Preserved	Field Filtered	TPH(g) ☐ GRO	TPH(d) ☐ DRO	TPH ☐ C6-C36 ☐ C6-C44	TPH	BTEX / MTBE ☐ 8260 ☐	VOCs (8260)	Oxygenates (8260)	Prep (5035) ☐ En Core ☒ Terra Core	SVOCs (8270)	Pesticides (8081)	PCBs (8082)	PAHs ☐ 8270 ☐ 8270 SIM	T22 Metals ☐ 6010/747X ☐ 6020/747X	Cr(VI) ☐ 7196 ☐ 7199 ☐ 218.6				
1	B1-2-6	3/23/18	08:07	Soil	1 Kit									✓												
2	B1-2-25	3/23/18	09:06	Soil	1 Kit									✓												
3	B1-2-32	3/23/18	09:11	Soil	1 Kit									✓												
4	B1-2-49	3/23/18	09:32	Soil	1 Kit									✓												
5	B1-2-80	3/23/18	10:21	Soil	1 Kit									✓												
6	B1-12-80	3/23/18	—	Soil	1 Kit									✓												
7	Trip BLK	—	—	Water	2									✓												

3/23/18 - 12 NOON

Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
Manuel Leon 03/23/2018 1430		3/23/18	1430
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
		3/23/18	1800
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:

2016-04-01-Revision

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WORK ORDER NUMBER: 18-03-2132

SAMPLE RECEIPT CHECKLIST

COOLER 1 OF 1

CLIENT: ERM

DATE: 03/23/2018

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)

Thermometer ID: SC6 (CF: +0.2°C); Temperature (w/o CF): 2.4 °C (w/ CF): 2.6 °C; ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____)

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling

☐ Sample(s) received at ambient temperature; placed on ice for transport by courier

Ambient Temperature: ☐ Air ☐ Filter Checked by: 1091

CUSTODY SEAL:

Cooler ☐ Present and Intact ☐ Present but Not Intact ☑ Not Present ☐ N/A Checked by: 1091

Sample(s) ☐ Present and Intact ☐ Present but Not Intact ☑ Not Present ☐ N/A Checked by: [illegible]

SAMPLE CONDITION:	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ Sampling date ☐ Sampling time ☐ Matrix ☐ Number of containers			
☐ No analysis requested ☐ Not relinquished ☐ No relinquished date ☐ No relinquished time			
Sampler's name indicated on COC	☑	☐	☐
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and in good condition	☑	☐	☐
Proper containers for analyses requested	☑	☐	☐
Sufficient volume/mass for analyses requested	☑	☐	☐
Samples received within holding time	☑	☐	☐
Aqueous samples for certain analyses received within 15-minute holding time			
☐ pH ☐ Residual Chlorine ☐ Dissolved Sulfide ☐ Dissolved Oxygen	☐	☐	☑
Proper preservation chemical(s) noted on COC and/or sample container	☑	☐	☐
Unpreserved aqueous sample(s) received for certain analyses			
☐ Volatile Organics ☐ Total Metals ☐ Dissolved Metals			
Acid/base preserved samples - pH within acceptable range	☐	☐	☑
Container(s) for certain analysis free of headspace	☑	☐	☐
☑ Volatile Organics ☐ Dissolved Gases (RSK-175) ☐ Dissolved Oxygen (SM 4500)			
☐ Carbon Dioxide (SM 4500) ☐ Ferrous Iron (SM 3500) ☐ Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE: (Trip Blank Lot Number: 180316A)

Aqueous: ☐ VOA ☑ VOA**h** ☐ VOA**na$_2$** ☐ 100PJ ☐ 100PJ**na$_2$** ☐ 125AGB ☐ 125AGB**h** ☐ 125AGB**p** ☐ 125PB ☐ 125PB**znna** (pH__9)

☐ 250AGB ☐ 250CGB ☐ 250CGB**s** (pH__2) ☐ 250PB ☐ 250PB**n** (pH__2) ☐ 500AGB ☐ 500AGJ ☐ 500AGJ**s** (pH__2) ☐ 500PB

☐ 1AGB ☐ 1AGB**na$_2$** ☐ 1AGB**s** (pH__2) ☐ 1AGB**s** (O&G) ☐ 1PB ☐ 1PB**na** (pH__12) ☐ _____ ☐ _____ ☐ _____

Solid: ☐ 4ozCGJ ☐ 8ozCGJ ☐ 16ozCGJ ☐ Sleeve (___) ☐ EnCores® (___) ☑ TerraCores® (3) ☑ 2ozPJ ☐ _____ ☐ _____

Air: ☐ Tedlar™ ☐ Canister ☐ Sorbent Tube ☐ PUF ☐ _____ **Other Matrix** (_____): ☐ _____ ☐ _____ ☐ _____

Container: **A** = Amber, **B** = Bottle, **C** = Clear, **E** = Envelope, **G** = Glass, **J** = Jar, **P** = Plastic, and **Z** = Ziploc/Resealable Bag

Preservative: **b** = buffered, **f** = filtered, **h** = HCl, **n** = HNO_3, **na** = NaOH, **na$_2$** = $Na_2S_2O_3$, **p** = H_3PO_4, **s** = H_2SO_4, **u** = ultra-pure, **x** = Na_2SO_3+$NaHSO_4.H_2O$, **znna** = Zn $(CH_3CO_2)_2$ + NaOH

Labeled/Checked by: [illegible]

Reviewed by: [illegible]

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APPENDIX H SOIL BORING LOGS - ERM 2018 PHASE II SITE INVESTIGATION - BLOCK 2

Final Data Package for Membrane Interface Probe Services

Site Location: 1521 East Grand Avenue, Infineon, El Segundo, California

Project Number: 304181021

Report Date: March 15, 2018

Prepared for:
ERM Group, Inc.
Maggie Tymkow
1920 Main Street, Suite 300
Irvine, California 92614
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E-Mail / Maggie.tymkow@erm.com

Prepared by:
Cascade Technical Services
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Littleton, Colorado 80127
Tel. / 303.423.2547
E-Mail /DCaputo@cascade-env.com

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Project Narrative

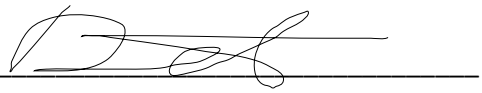
Cascade Technical Services (Cascade) is pleased to present this data report to ERM Group, Inc. for the membrane interface probe (MIP) services that were provided between the dates of March 1st and March 9th, 2018 at your site located at 1521 East Grand Avenue, Infineon, El Segundo, California.

The results associated with the data and plots presented in this report were generated in accordance to Cascade's and Geoprobe's Standard Operating Procedures (SOPs) for MIP services.

All field work and data management were completed by trained, scientific professionals and all quality assurance/quality control (QA/QC) measurements associated with these data were found to be within the tolerances set forth in the SOPs for these services. Response tests conducted previous to, and subsequent to the MIP borings were found to be within the tolerances set forth for this MIP survey and therefore the data are deemed acceptable for use. Exception/deviations regarding these response tests and the related data are noted on the MIP Summary Table that is part of this report.

This report contains two sets of plots for each of the MIP locations; one set is scaled to show the lower level responses based on the responses in each individual boring and the second set is scaled to show the higher level detector responses.

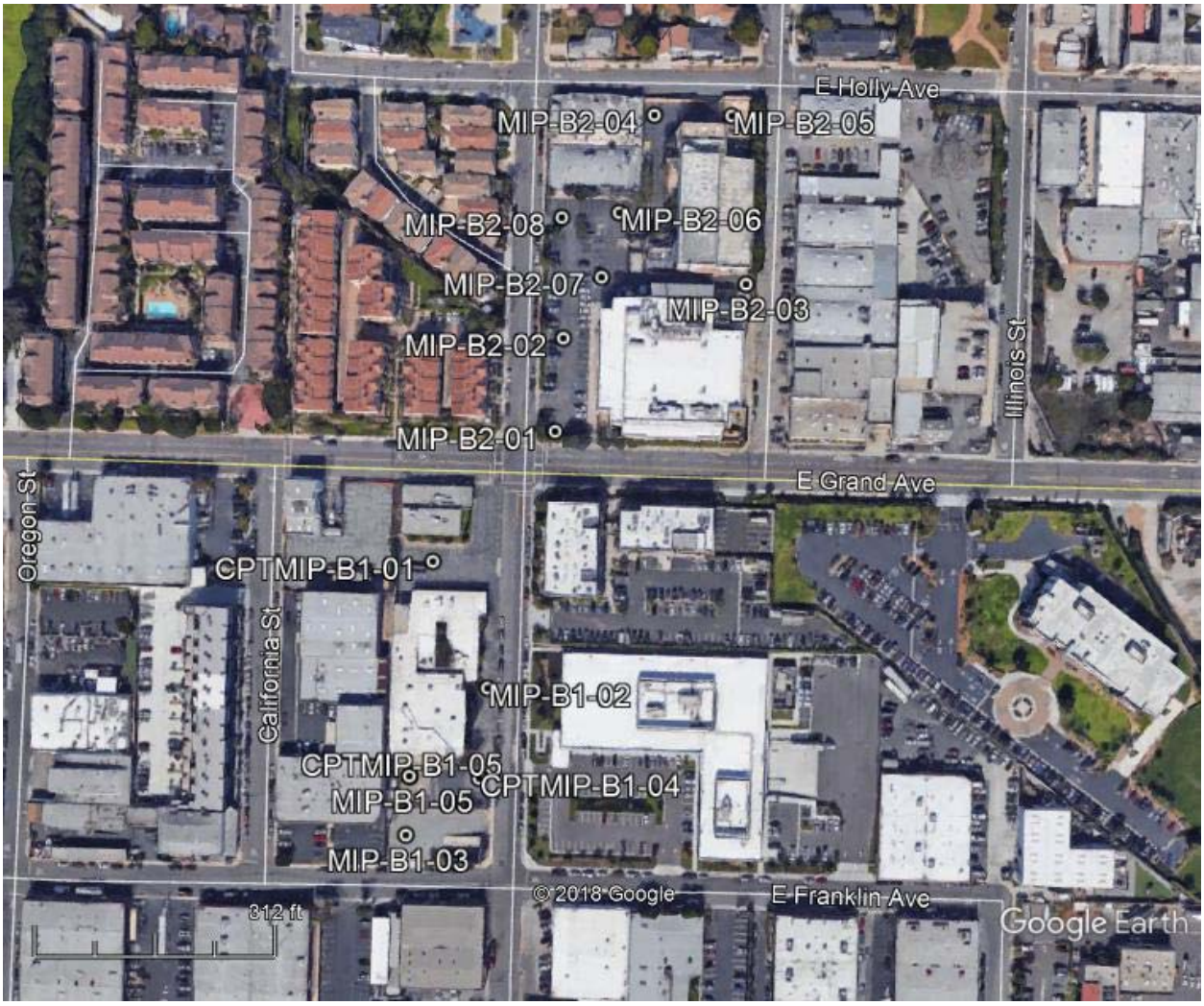
I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Signature: 

Daniel Caputo, Western Regional Manager of Site Characterization Services

Project Site Map and MIP Locations

Approximate boring locations are provided below. Field staff estimated boring locations using reference points observed on site in relation to the same reference points visible in Google Earth map software.



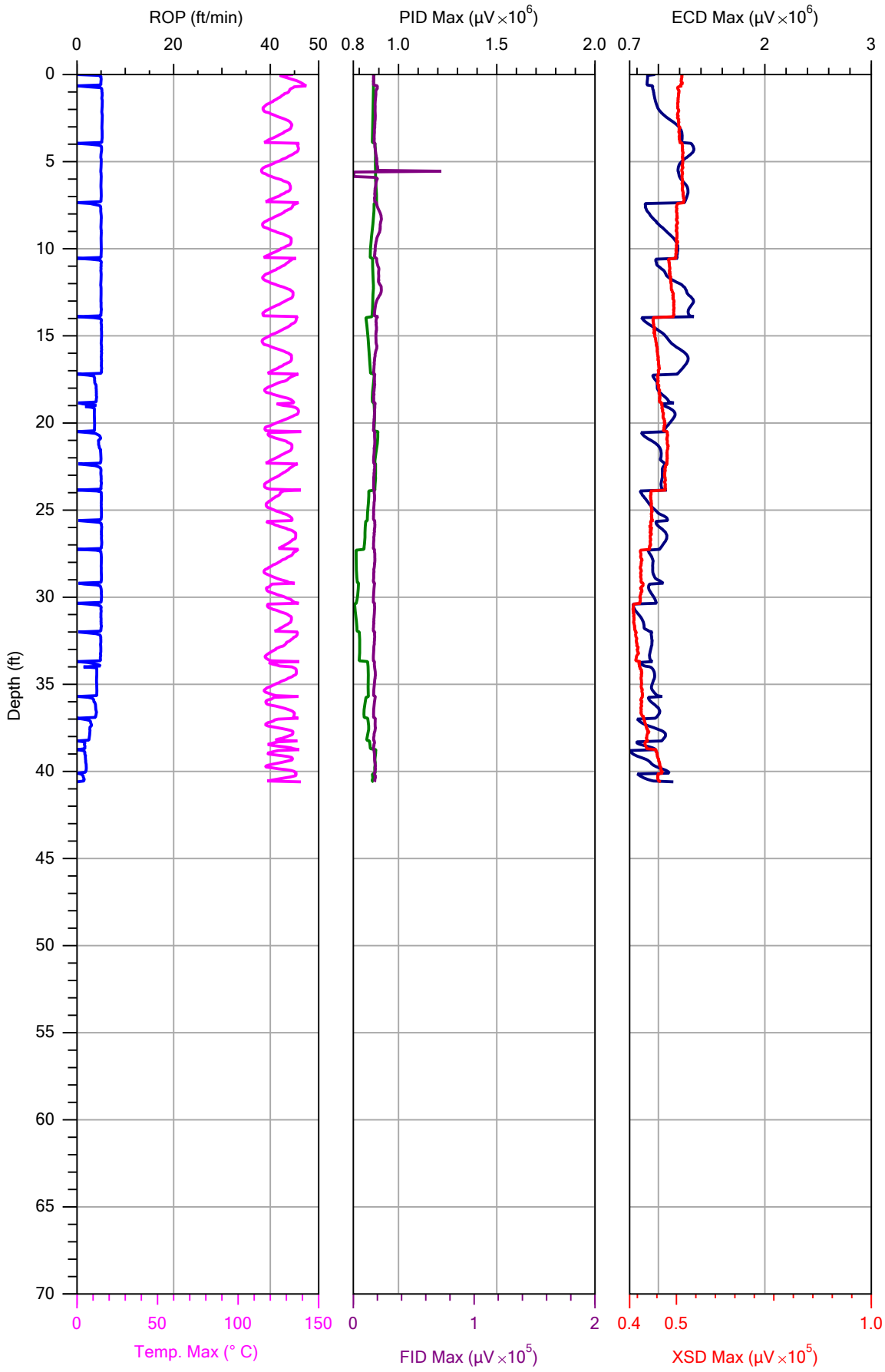
Membrane Interface Probe Data Summary Table

Provided below is a summary of MIP information, including response test acceptability and any deviations from the standard operating procedure that occurred during the field activities.

MIP Location	Total Depth (ft)	Response Test Results, ECD - (mV)			Response Test Results, PID - (mV)			Response Test Results, XSD - (mV)			Comments/Deviations
		Pre	Post	Acceptable*	Pre	Post	Acceptable*	Pre	Post	Acceptable*	
CPTMIP-B1-01	40.60	1549.8	1407.3	YES	173.3	118.5	YES	11.1	11.1	YES	
CPTMIP-B1-04	50.15	1407.3	7354.7	YES	118.5	244.7	YES	11.1	62.4	YES	
CPTMIP-B1-05	41.75	3153.5	825.3	YES	430.6	436.1	YES	64.5	459.0	YES	
MIP-B1-02	39.70	651.9	1153.1	YES	41.7	68.2	NO	5.3	8.7	YES	New membrane. Low response. Peak shape acceptable. Proceed.
MIP-B1-03	60.95	2030.2	2816.2	YES	200.8	208.8	YES	16.2	16.7	YES	
MIP-B1-05	57.70	2030.2	2000.9	YES	200.8	126.9	YES	16.2	12.8	YES	
MIP-B2-01	67.00	2562.1	1901.2	YES	264.4	133.8	YES	12.1	8.9	YES	
MIP-B2-02	48.40	1717.8	2030.0	YES	163.7	157.7	YES	12.9	14.6	YES	
MIP-B2-03	56.80	2030.0	1654.2	YES	157.7	143.3	YES	14.6	11.3	YES	
MIP-B2-04	24.80	2030.0	1398.1	YES	157.7	119.3	YES	14.6	13.3	YES	
MIP-B2-05	44.60	2220.3	2271.9	YES	198.0	214.3	YES	15.2	15.9	YES	
MIP-B2-06	38.95	2271.9	2255.3	YES	214.3	273.5	YES	15.9	15.8	YES	
MIP-B2-07	43.55	1955.5	1992.1	YES	200.9	231.6	YES	12.5	12.6	YES	
MIP-B2-08	40.85	2562.1	1901.2	YES	264.4	133.8	YES	12.1	8.9	YES	

*Acceptable values for ECD, PID, and XSD detectors are 200mV, 50mV, and 5mV, respectively.

Membrane Interface Probe Data Plots – Low Range Scales



CASCADE
DRILLING | TECHNICAL SERVICES

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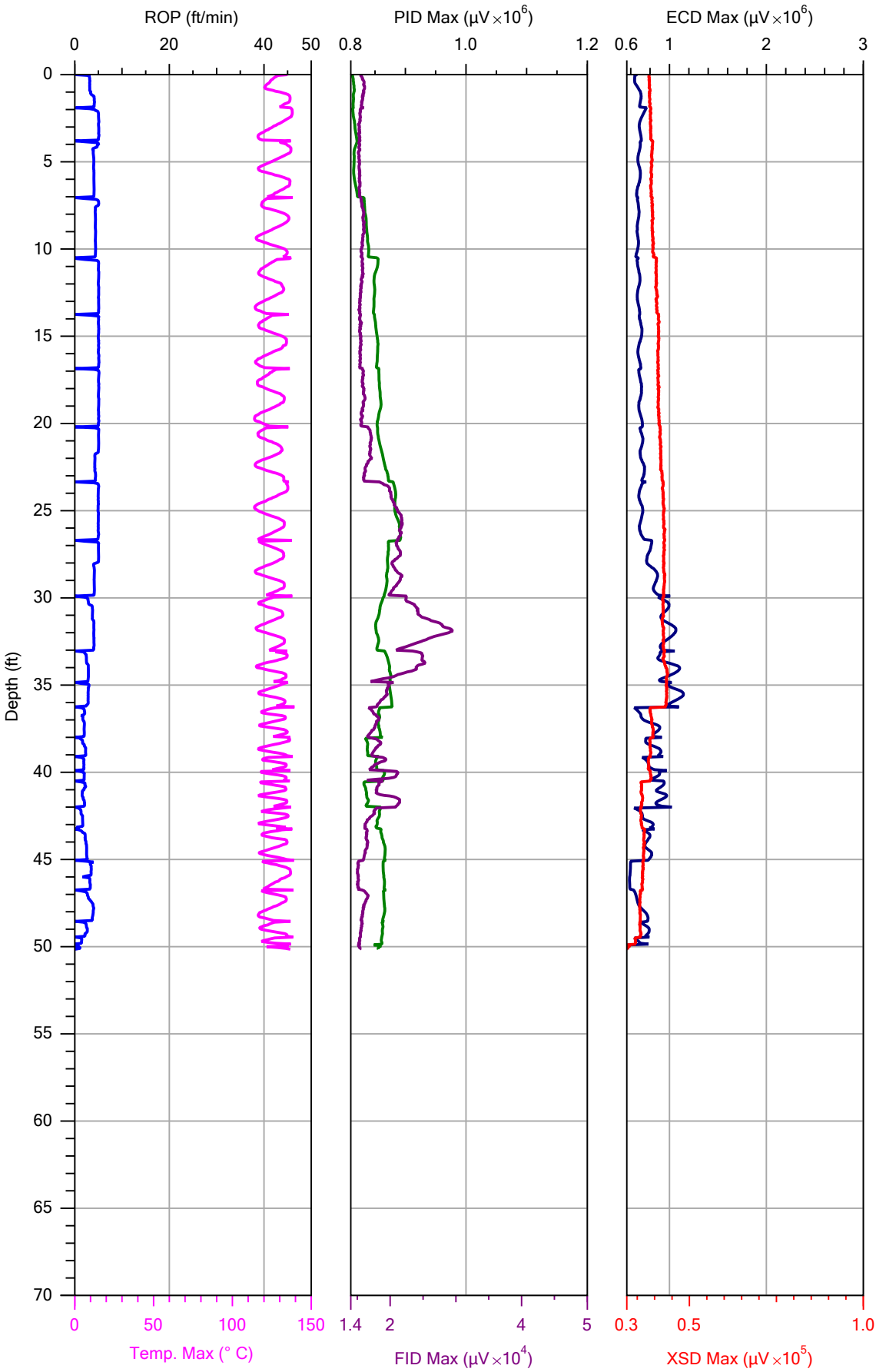
Company: Cascade	Operator: Horrell	Date: 3/1/2018
Project ID: Infineon	Client: ERM	Location: El Segundo



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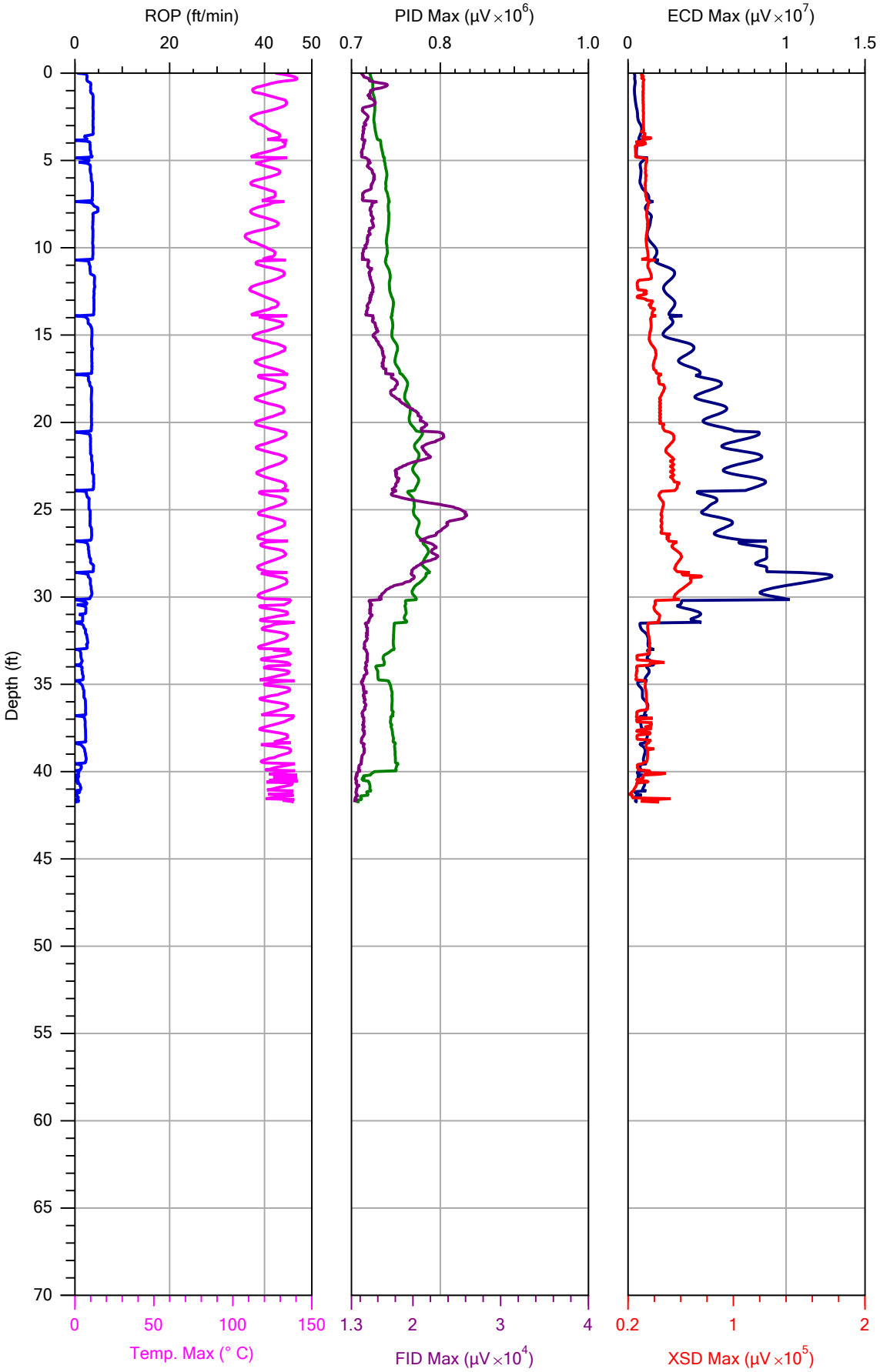
Project ID: Infineon	Client: ERM	Location: El Segundo



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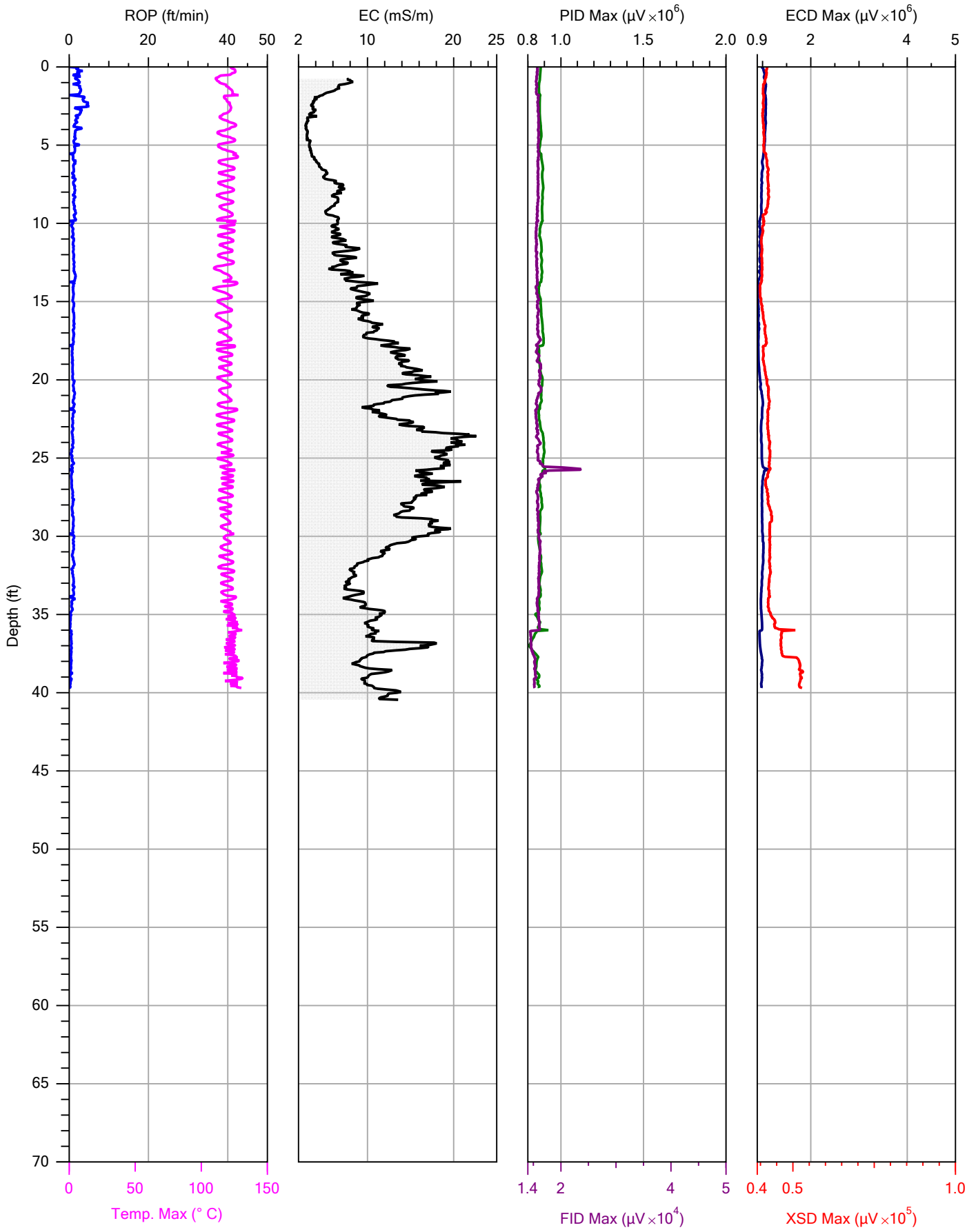

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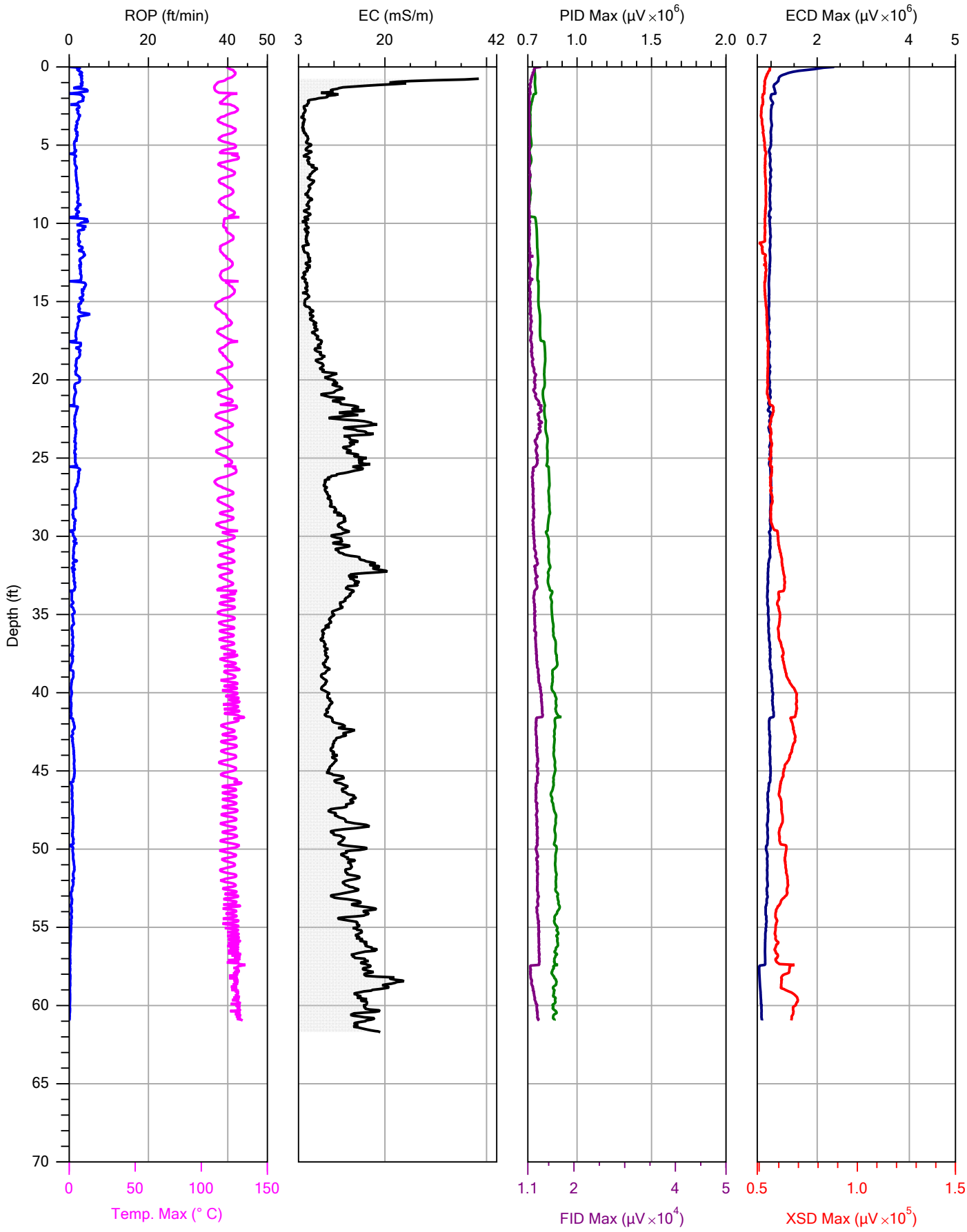

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DRILLING | TECHNICAL SERVICES

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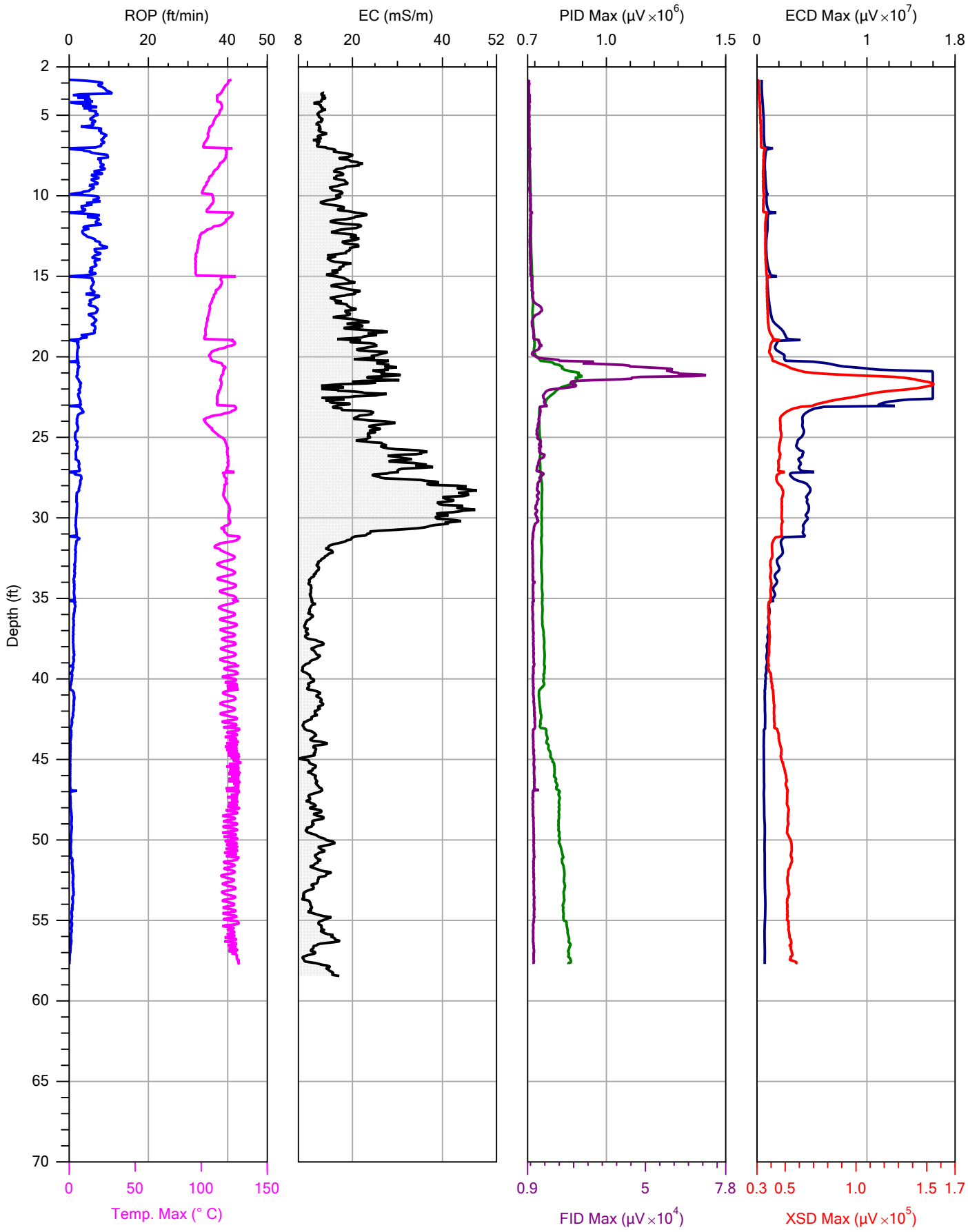
Project ID: Infineon	Client: ERM	Location: El Segundo



CASCADE
DRILLING | TECHNICAL SERVICES

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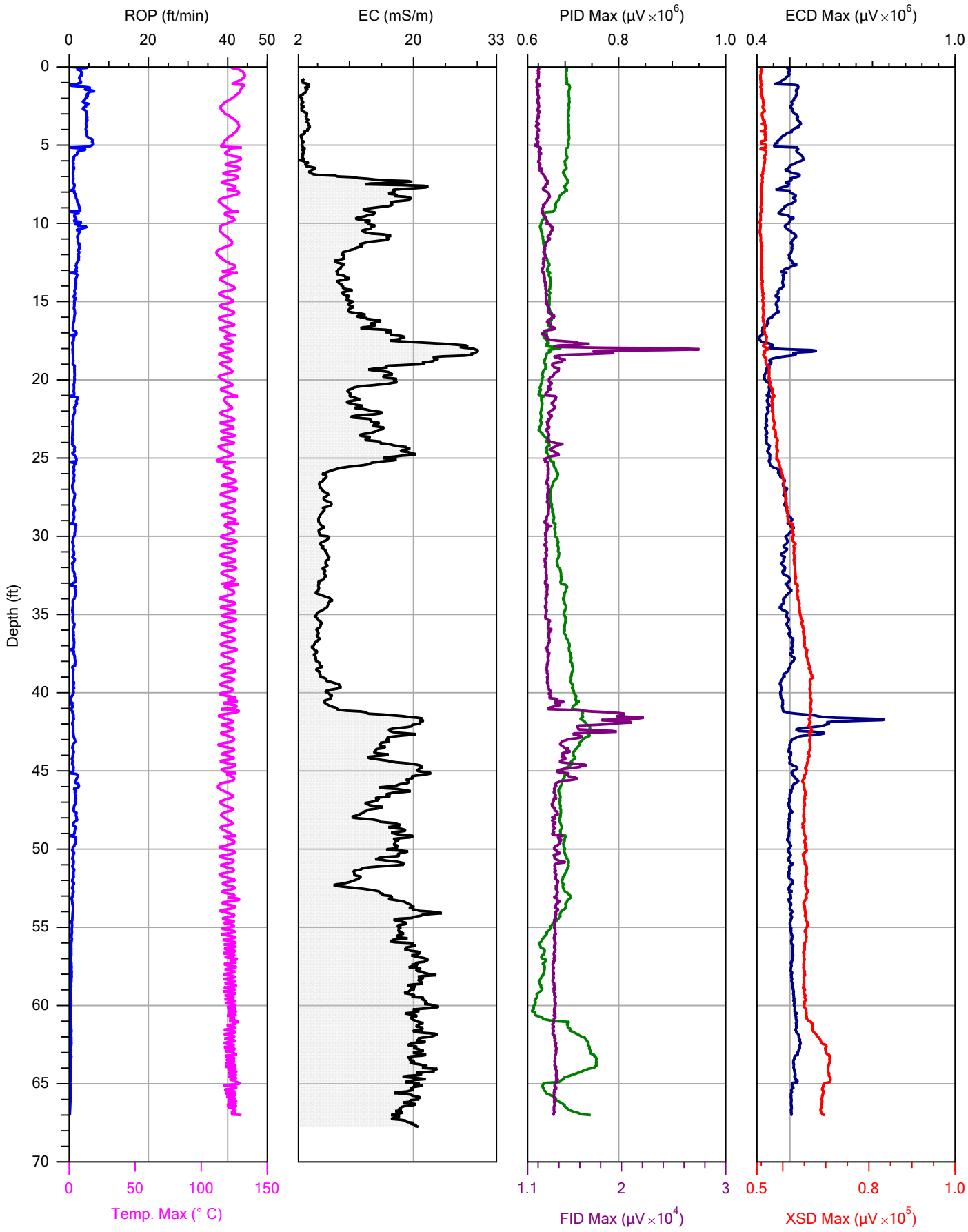
Project ID: Infineon	Client: ERM	Location: El Segundo



CASCADE
DRILLING | TECHNICAL SERVICES

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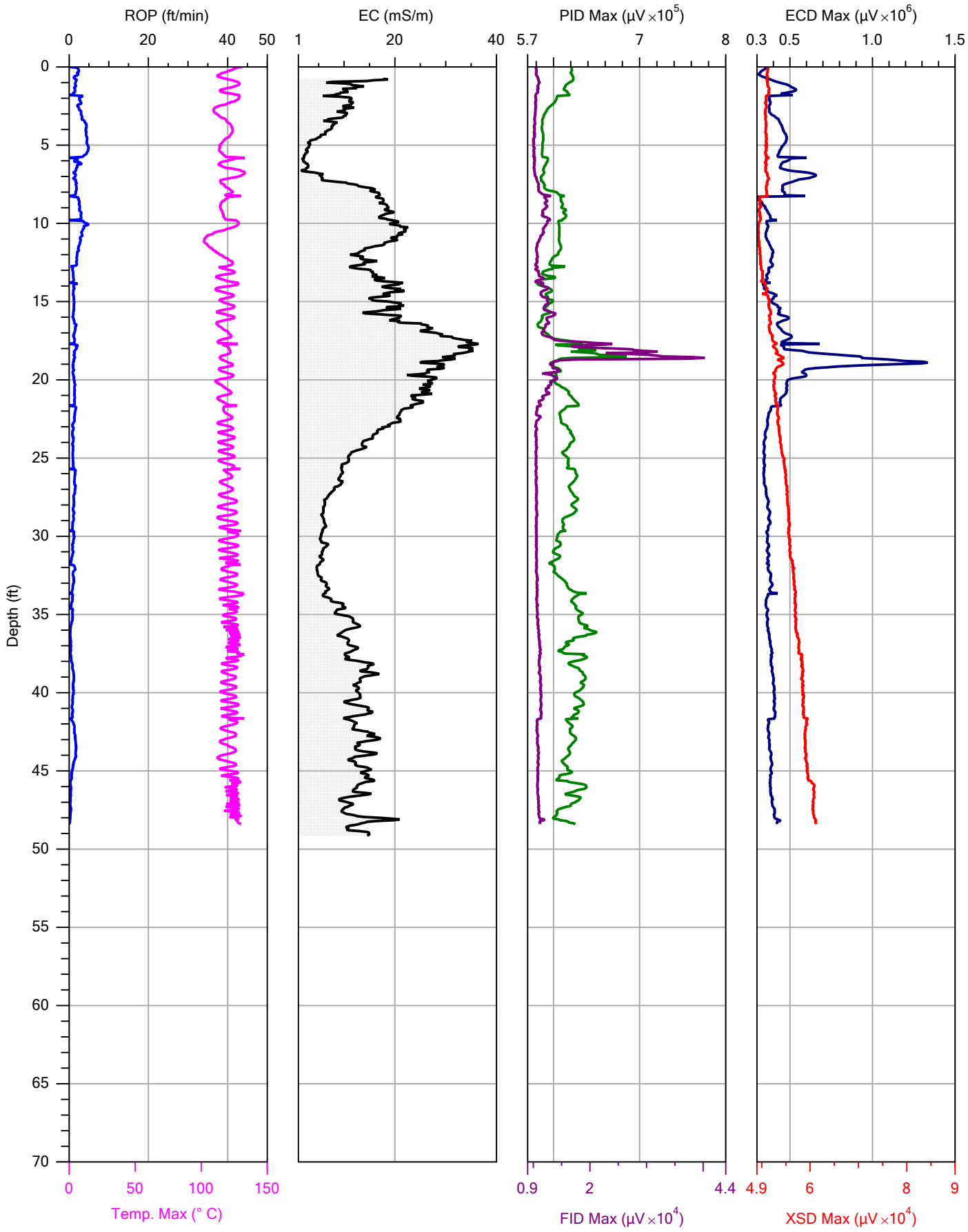
Project ID: Infineon	Client: ERM	Location: El Segundo



CASCADE
DRILLING | TECHNICAL SERVICES

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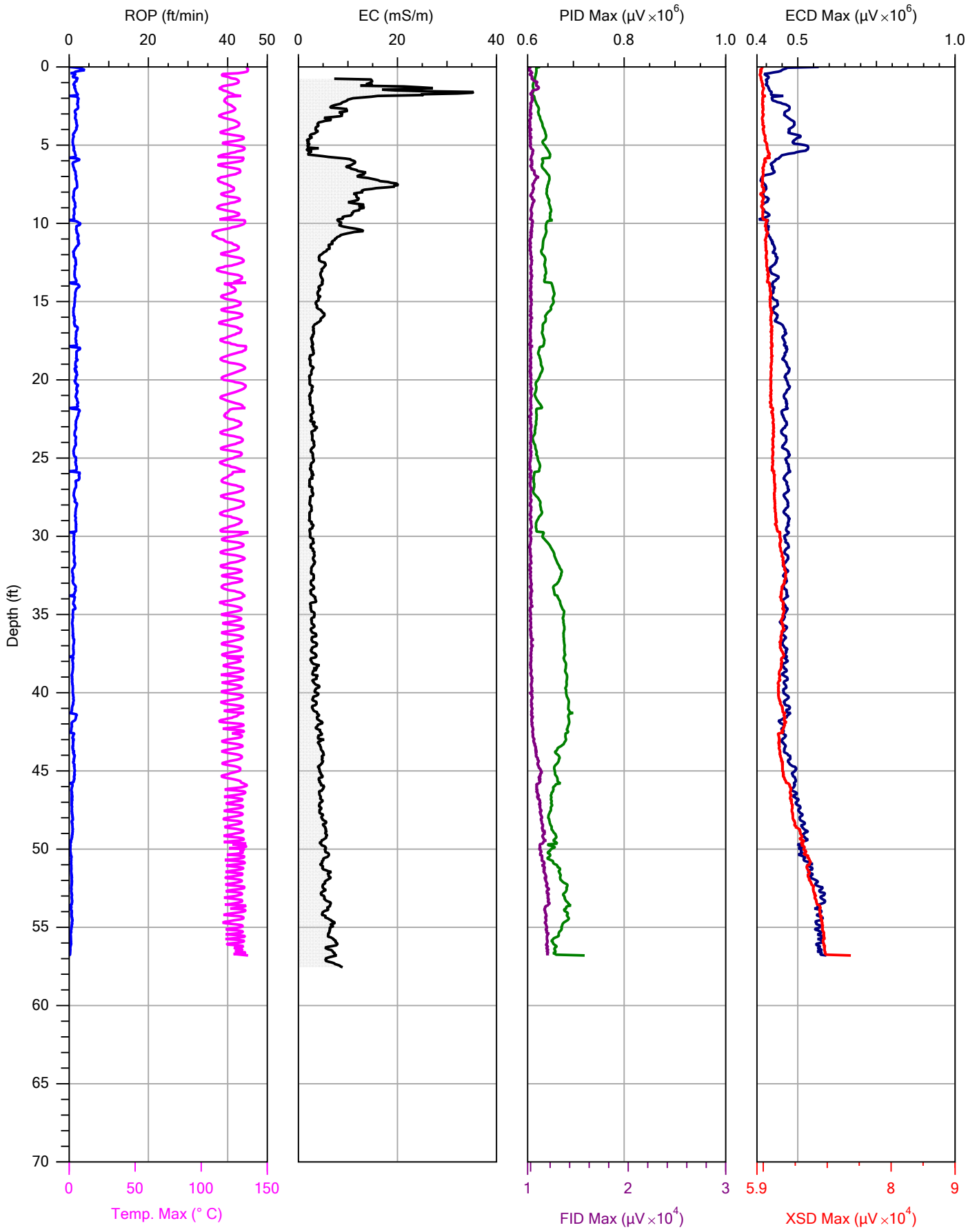

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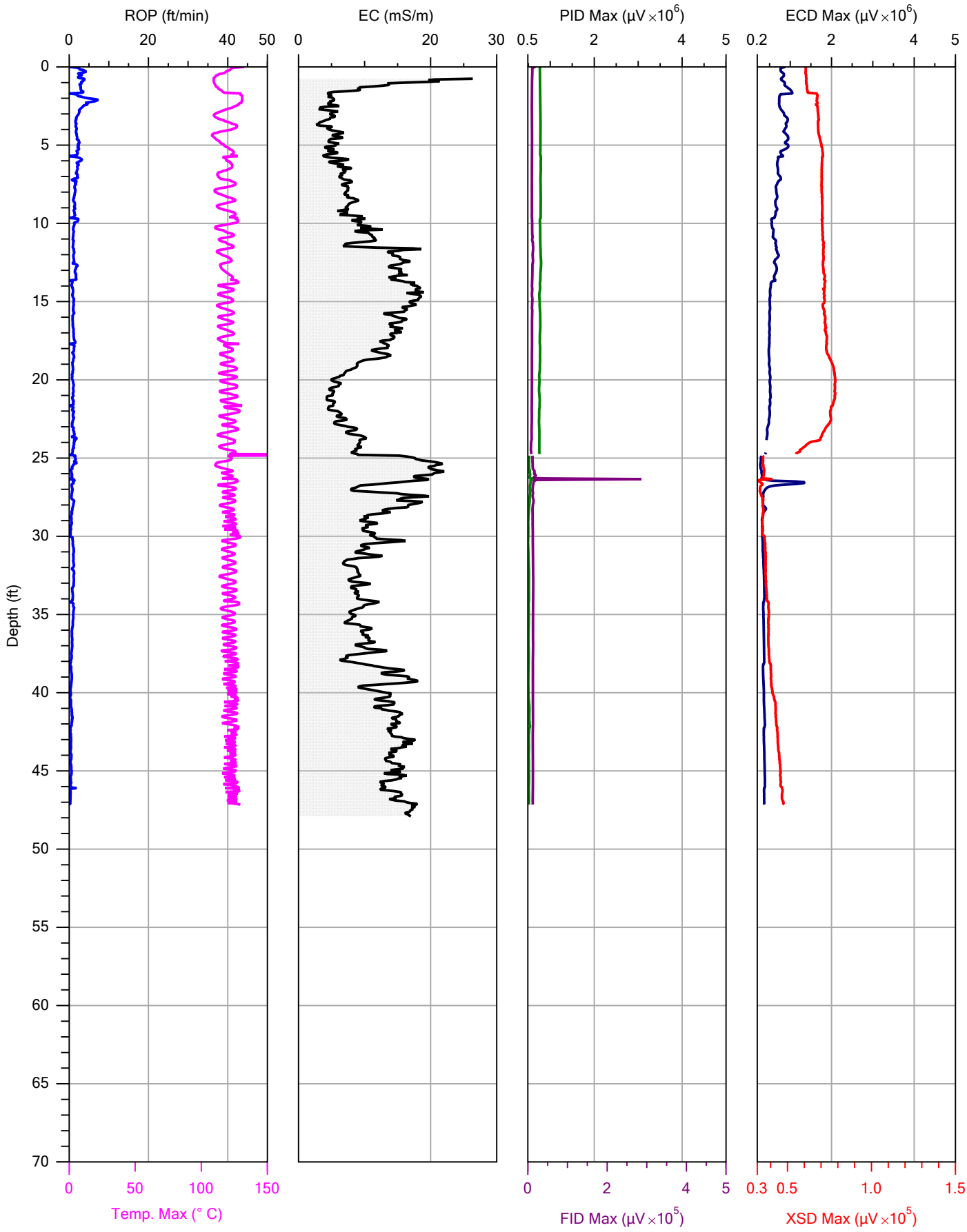

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DRILLING | TECHNICAL SERVICES

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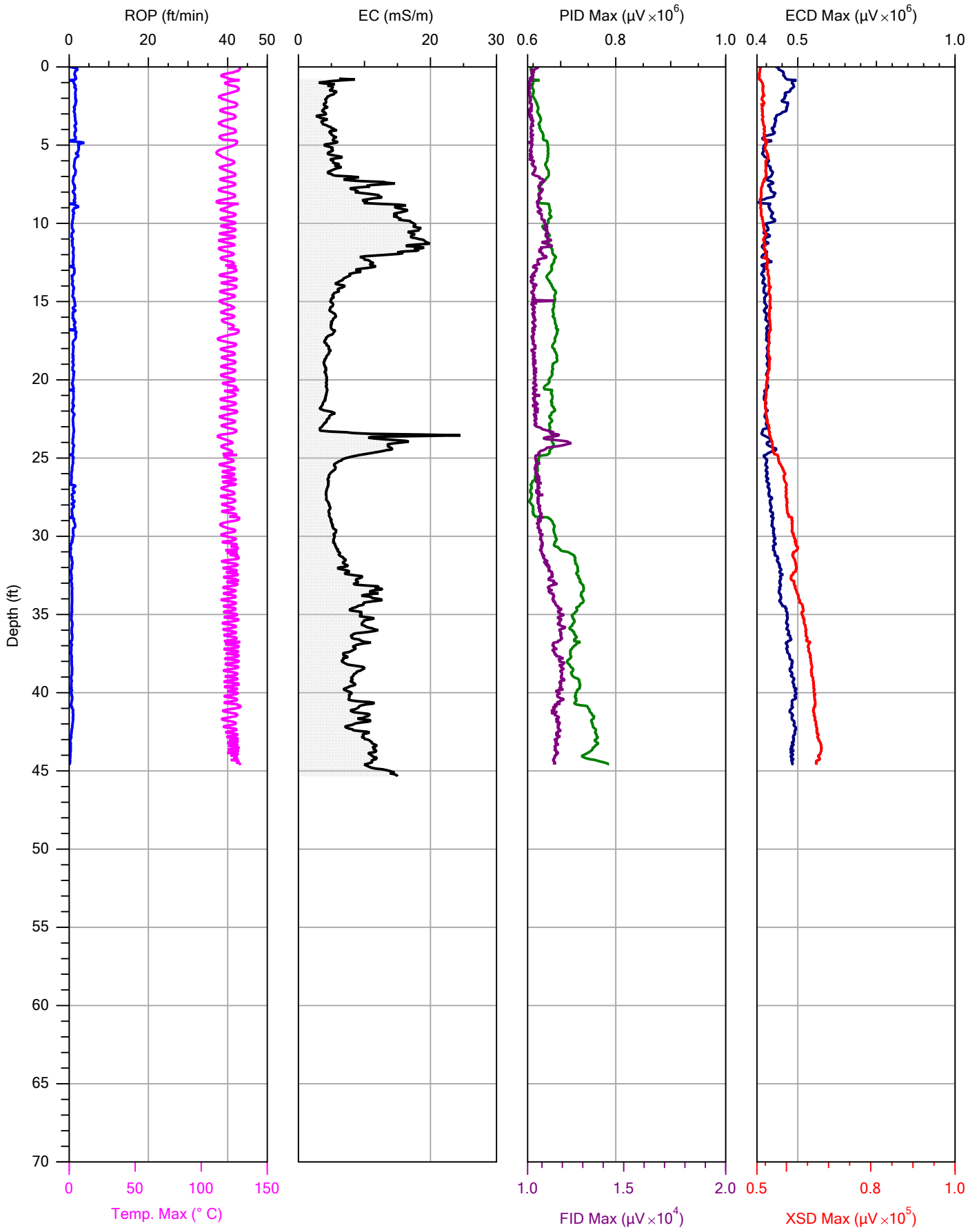
Project ID: Infineon	Client: ERM	Location: El Segundo



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DRILLING | TECHNICAL SERVICES

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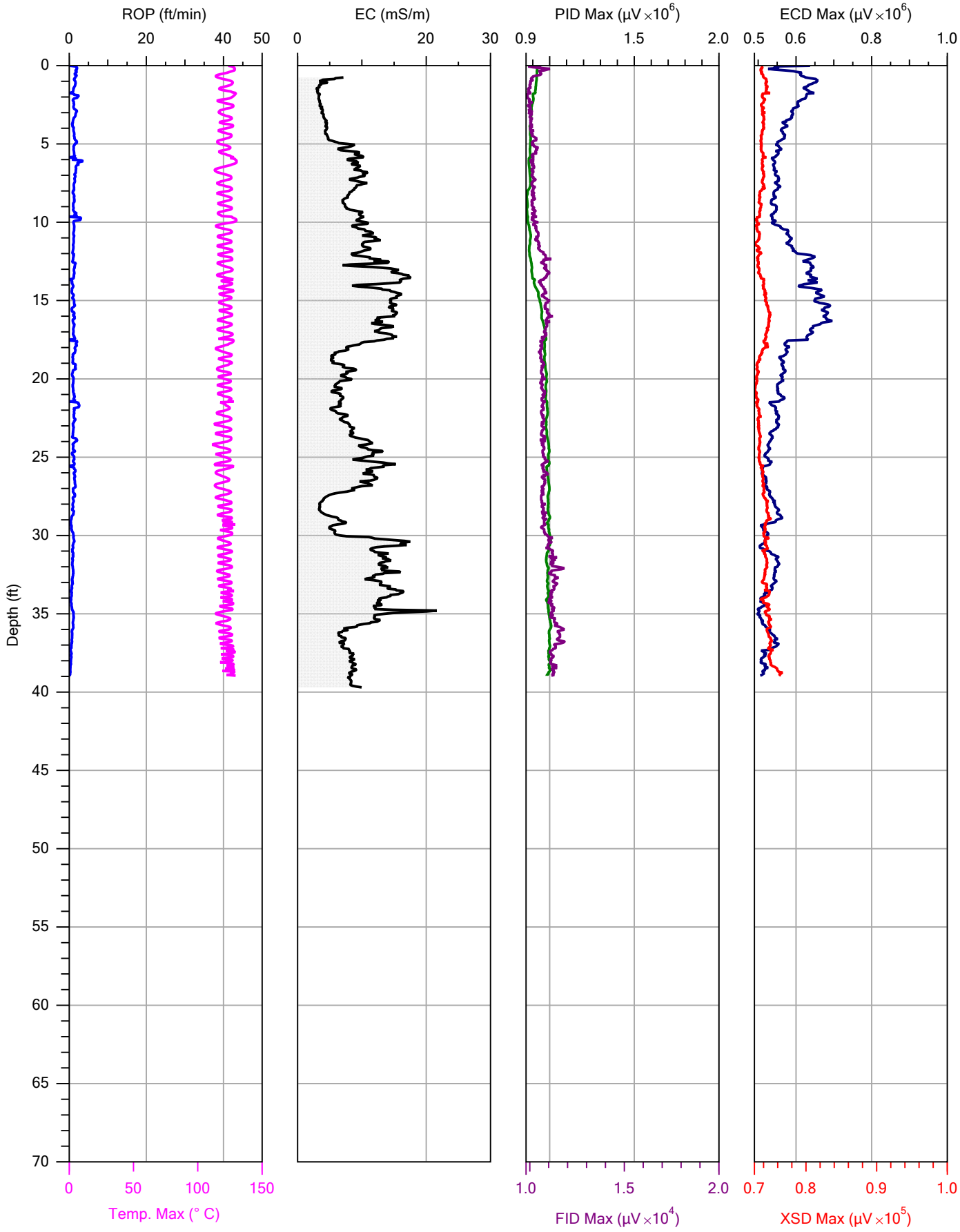

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DRILLING | TECHNICAL SERVICES

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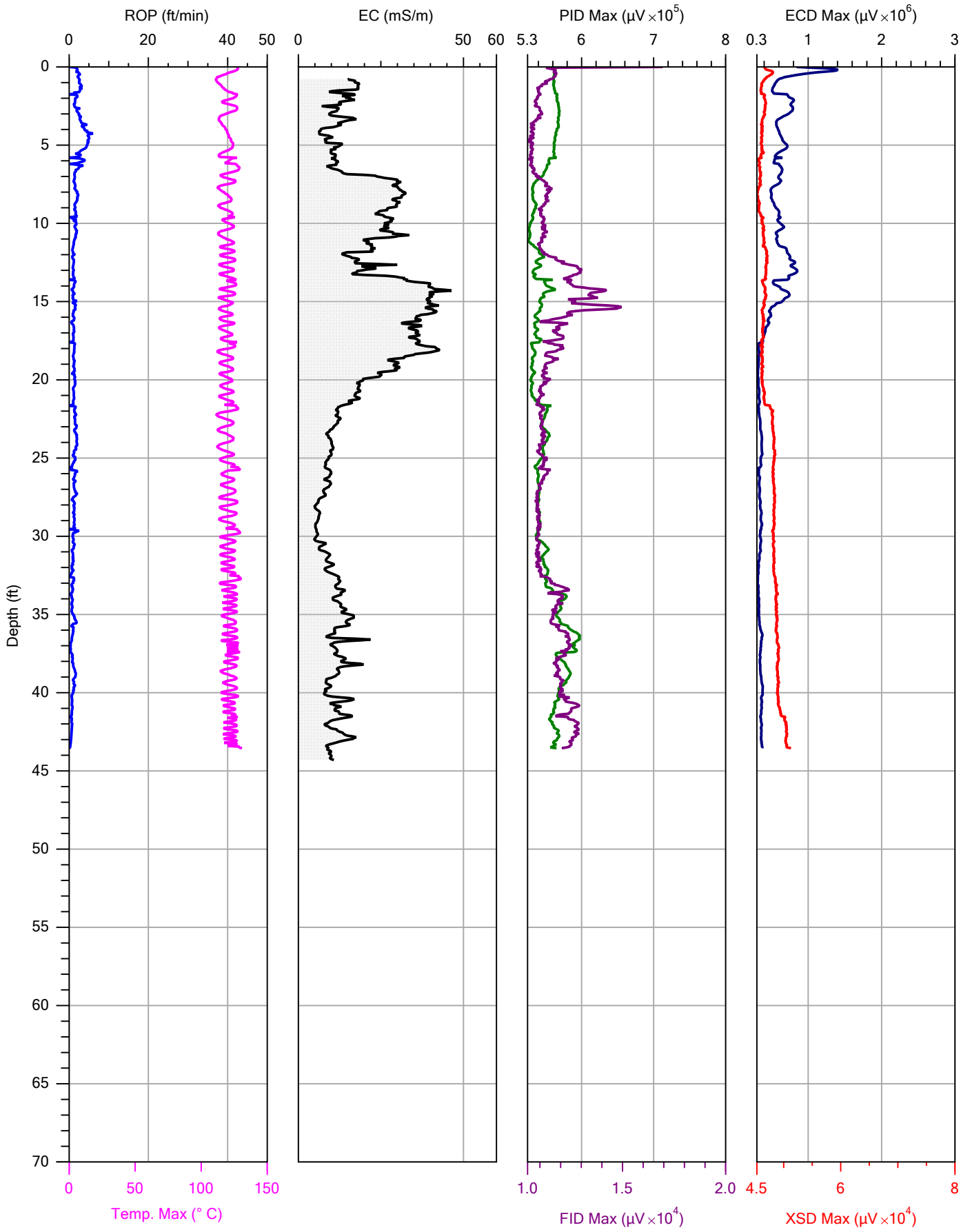
Project ID: Infineon	Client: ERM	Location: El Segundo



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DRILLING | TECHNICAL SERVICES

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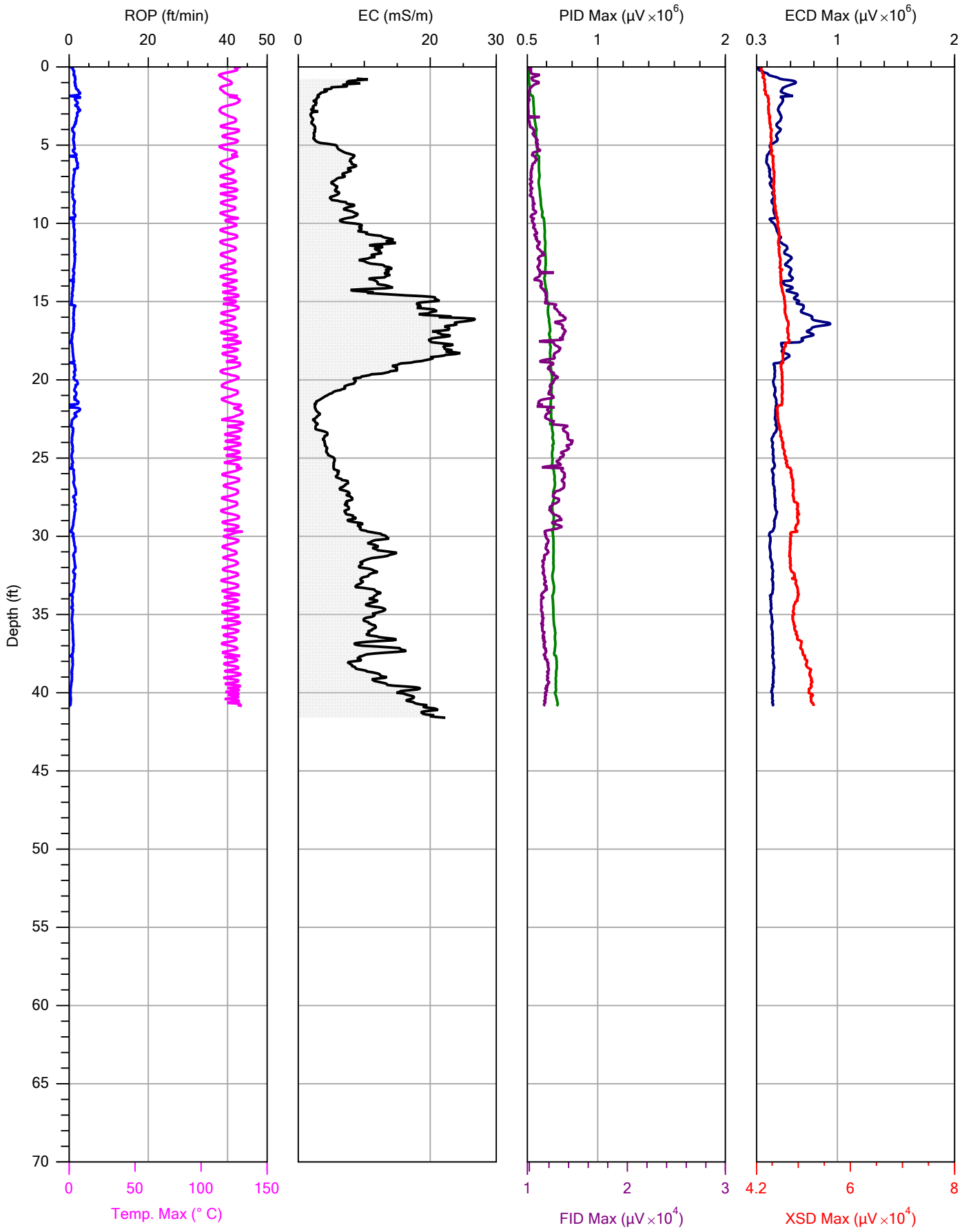

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DRILLING | TECHNICAL SERVICES

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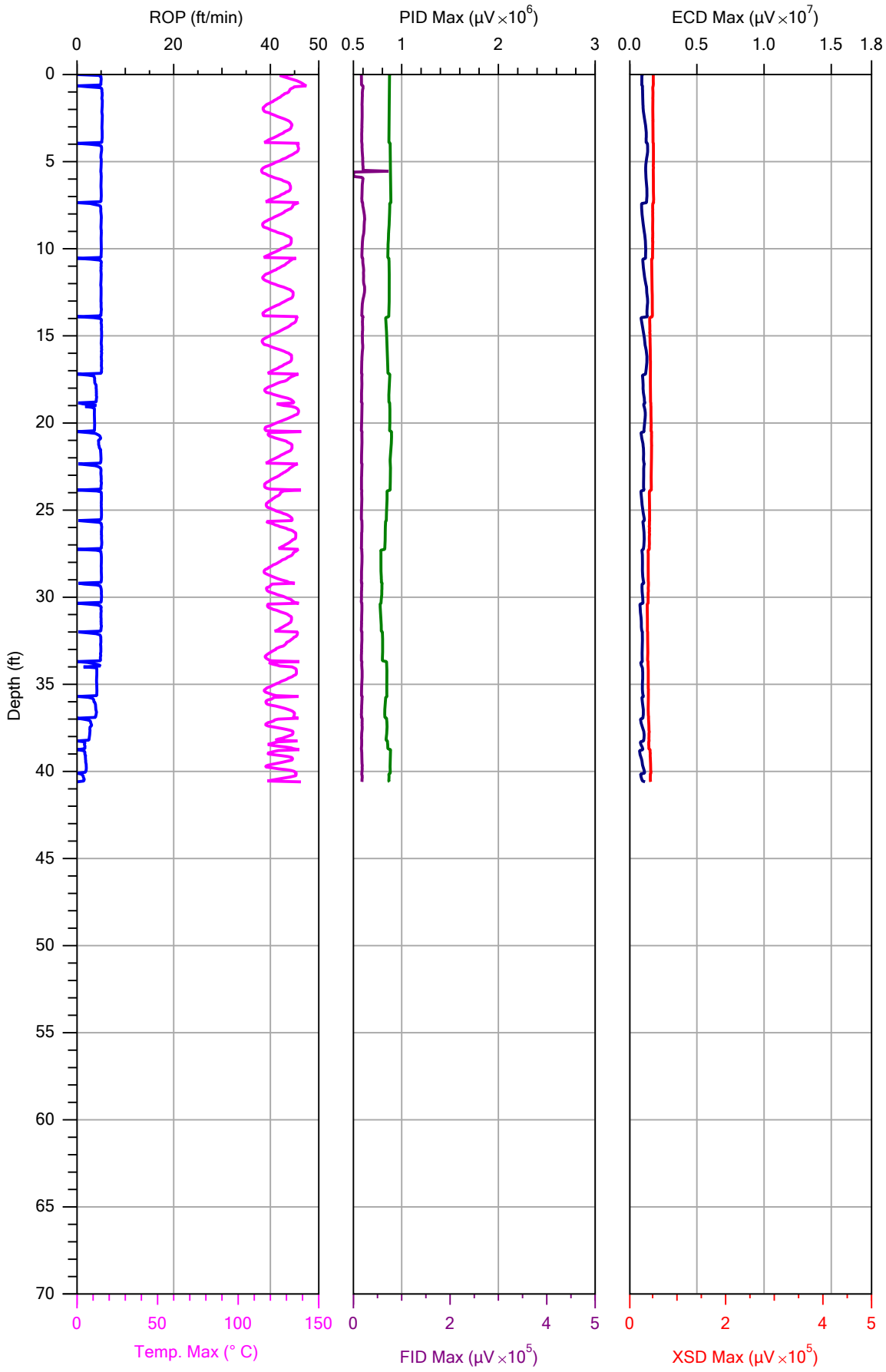
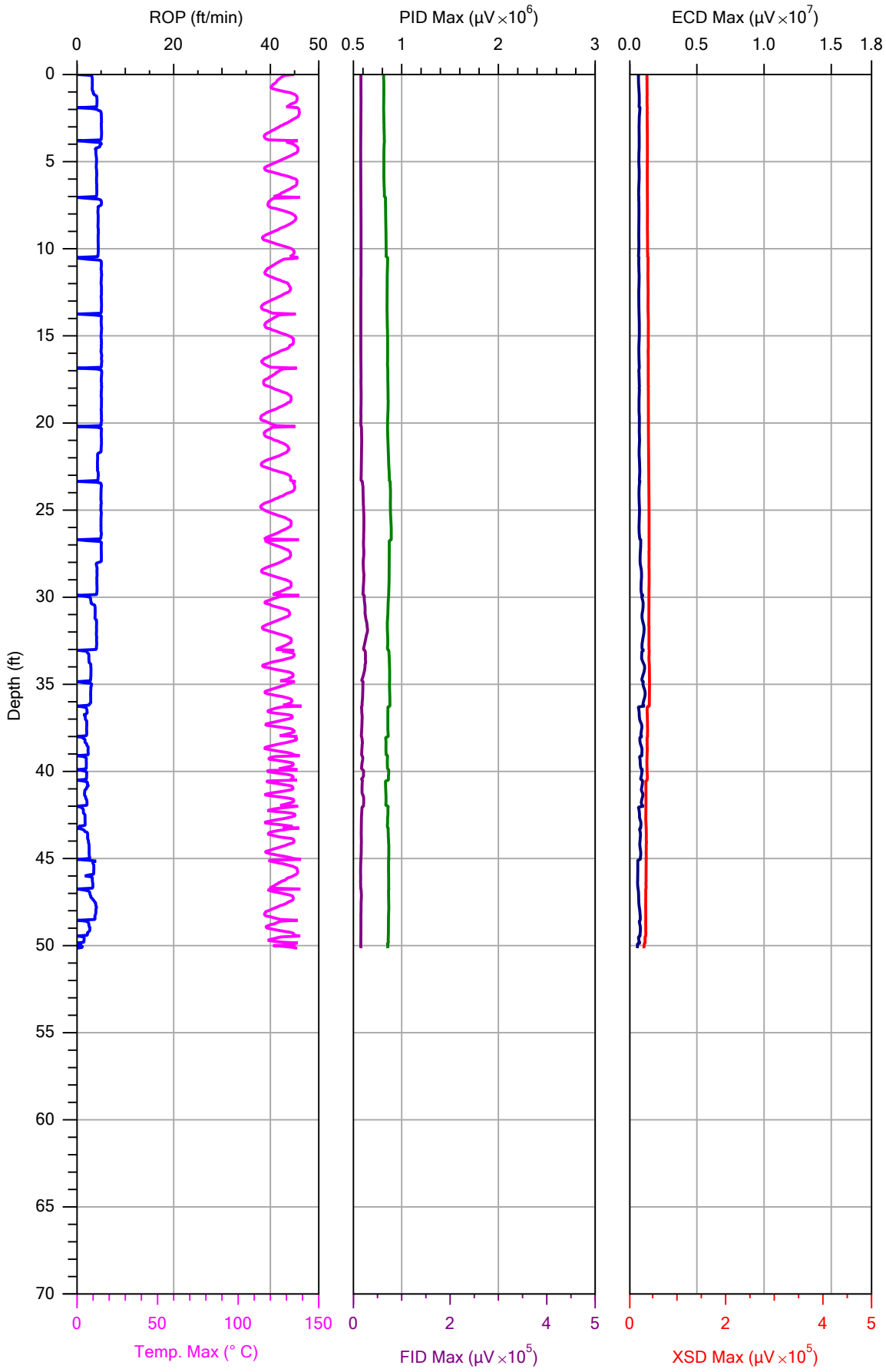
Project ID: Infineon	Client: ERM	Location: El Segundo

Membrane Interface Probe Data Plots – High Range Scales



CASCADE
DRILLING | TECHNICAL SERVICES

		File: CPTMIP-B1-01.MIP
Company: Cascade	Operator: Horrell	Date: 3/1/2018
Project ID: Infineon	Client: ERM	Location: El Segundo



CASCADE
DRILLING | TECHNICAL SERVICES

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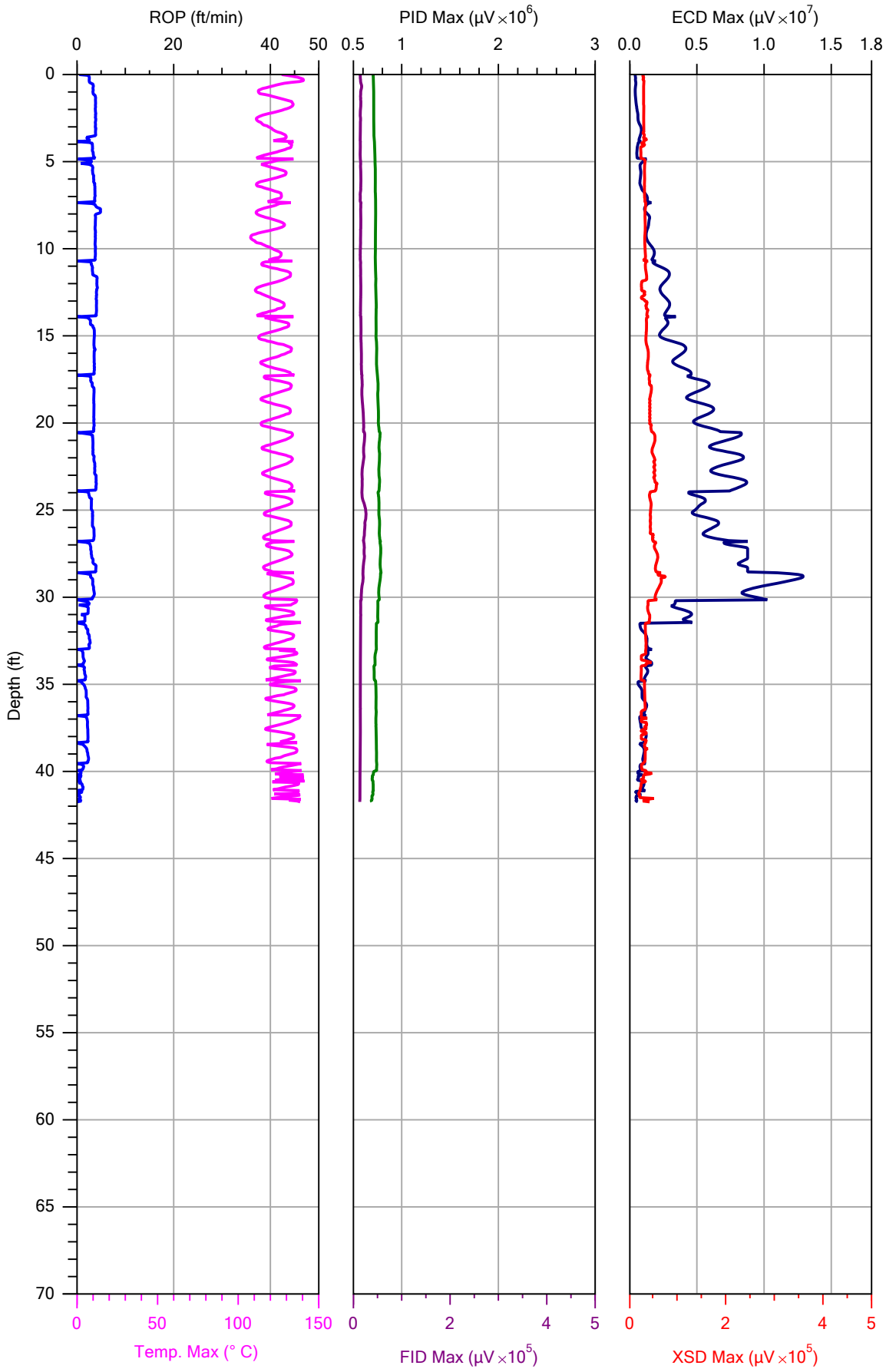
Company: Cascade	Operator: Horrell	Date: 3/1/2018
Project ID: Infineon	Client: ERM	Location: El Segundo



CASCADE
DRILLING | TECHNICAL SERVICES

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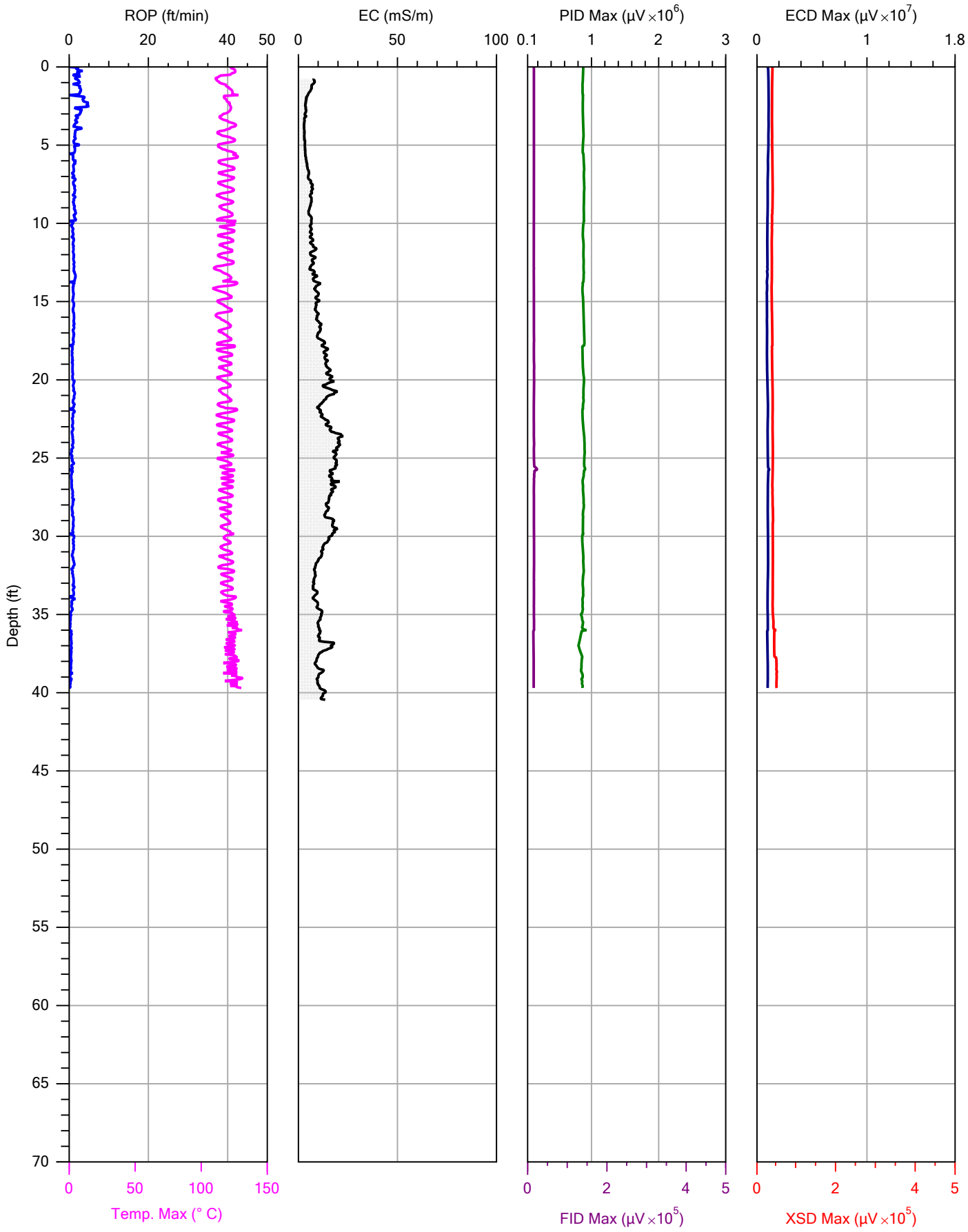
Company: Cascade	Operator: Horrell	Date: 3/2/2018
Project ID: Infineon	Client: ERM	Location: El Segundo



CASCADE
DRILLING | TECHNICAL SERVICES

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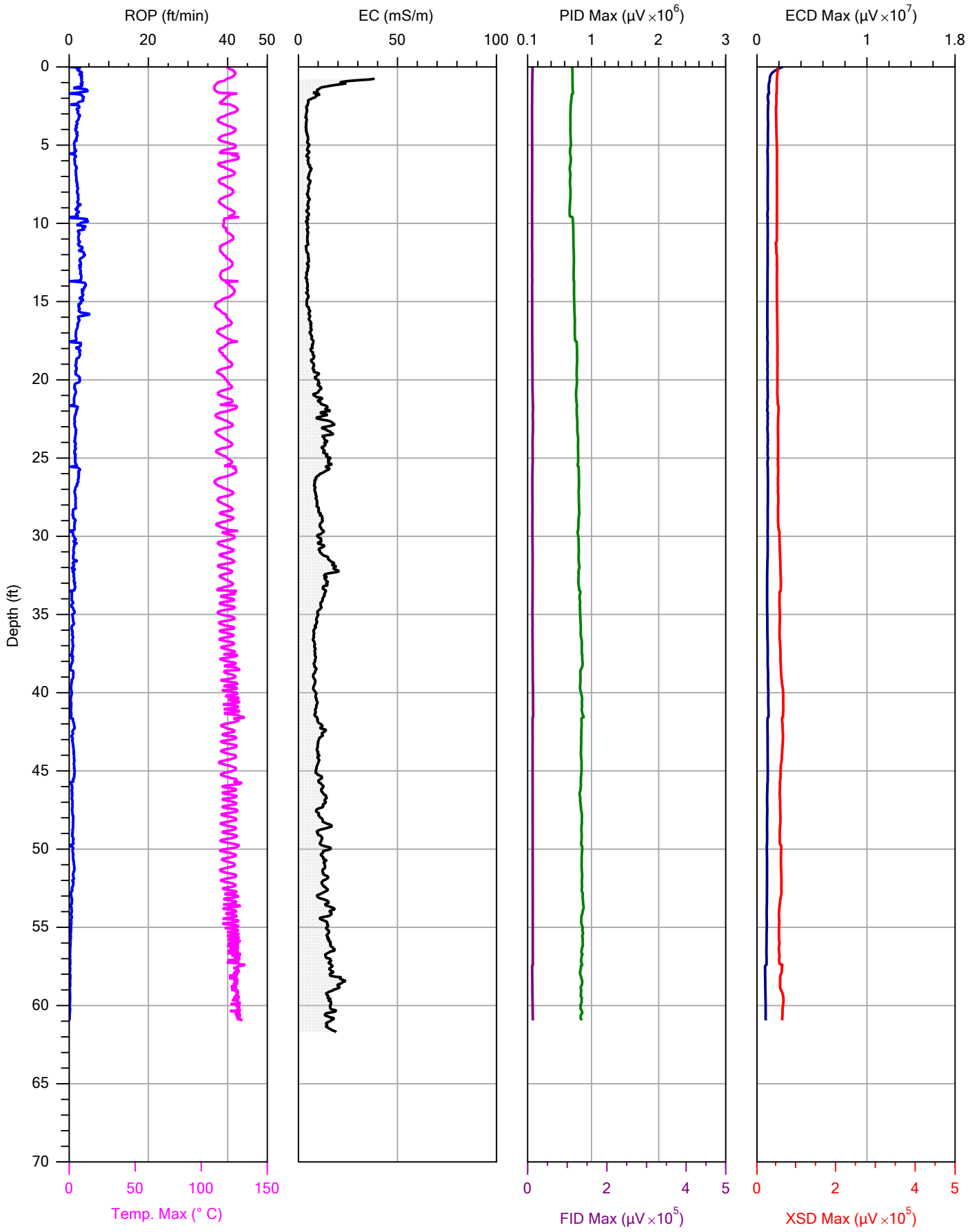
Company: Cascade	Operator: Horrell	Date: 3/5/2018
Project ID: Infineon	Client: ERM	Location: El Segundo



CASCADE
DRILLING | TECHNICAL SERVICES

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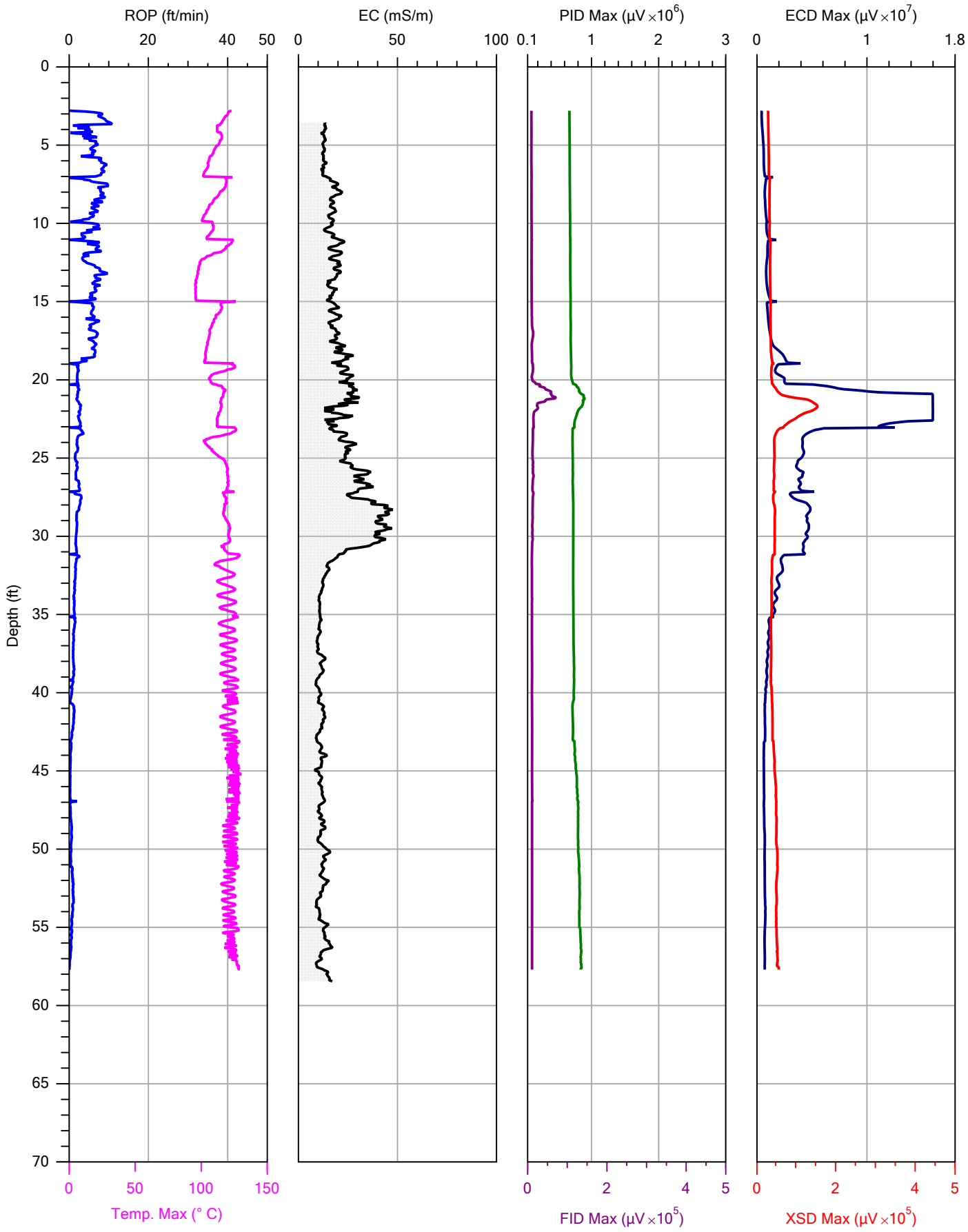
Company: Cascade	Operator: Horrell	Date: 3/6/2018
Project ID: Infineon	Client: ERM	Location: El Segundo



CASCADE
DRILLING | TECHNICAL SERVICES

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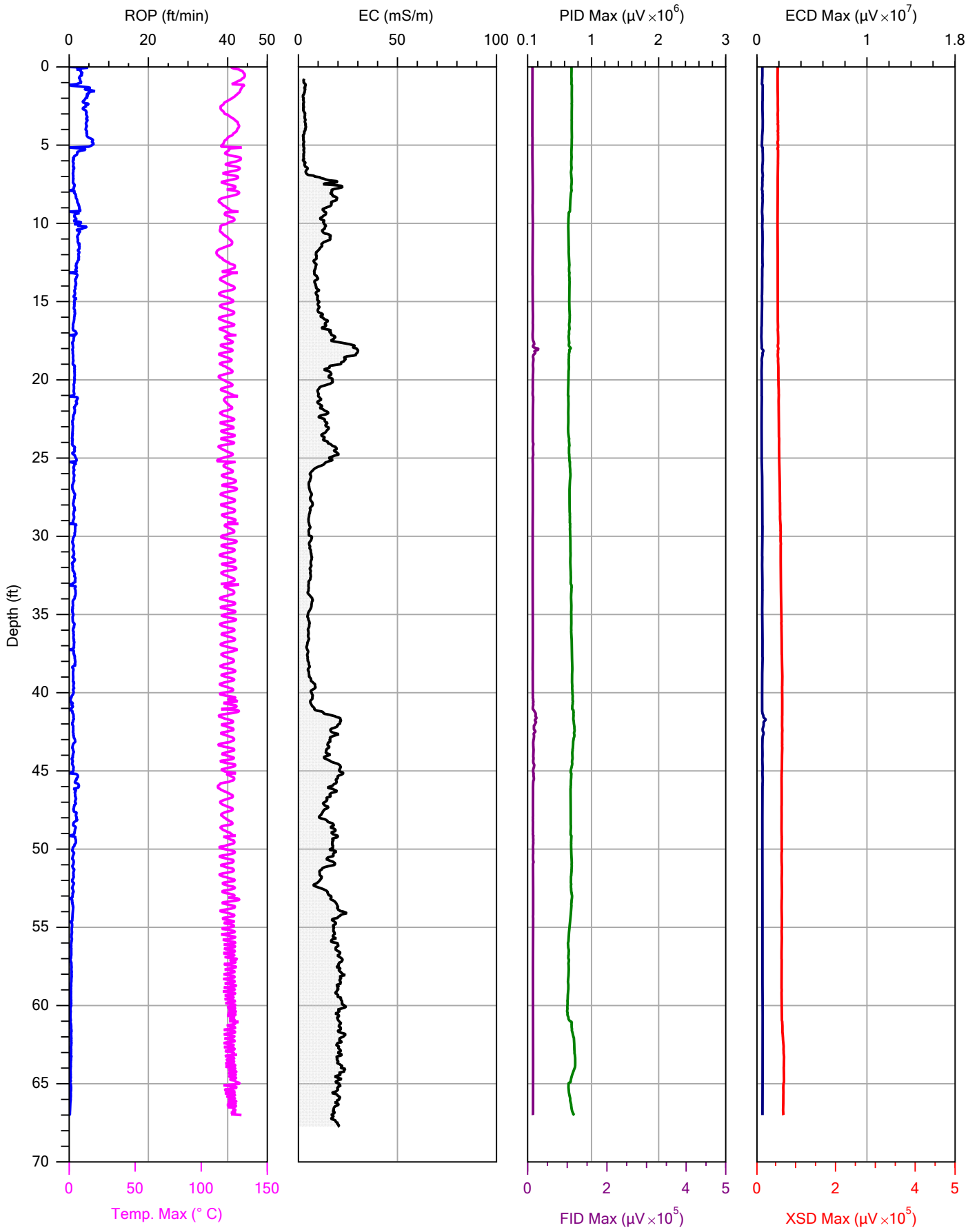
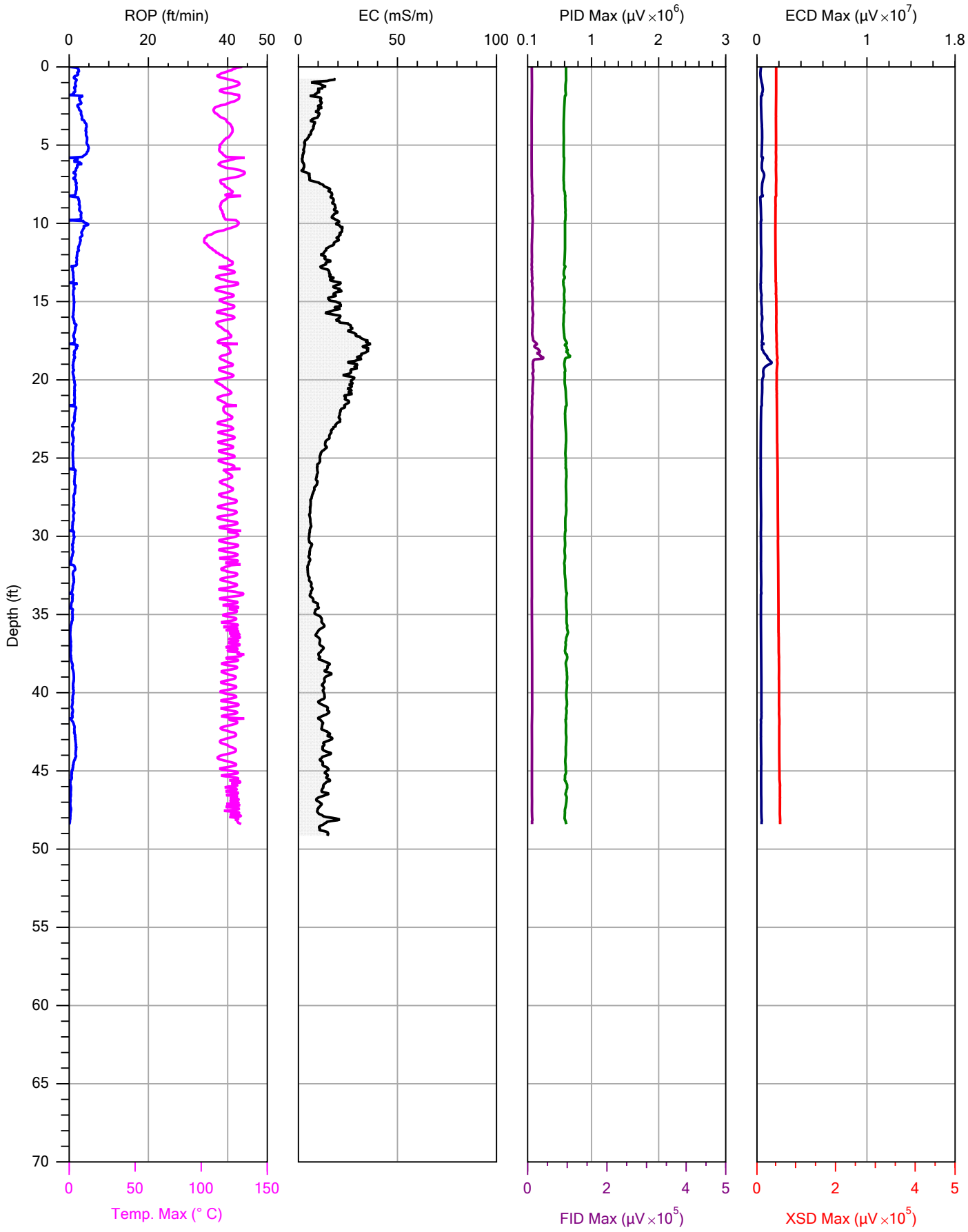
Company: Cascade	Operator: Horrell	Date: 3/6/2018
Project ID: Infineon	Client: ERM	Location: El Segundo



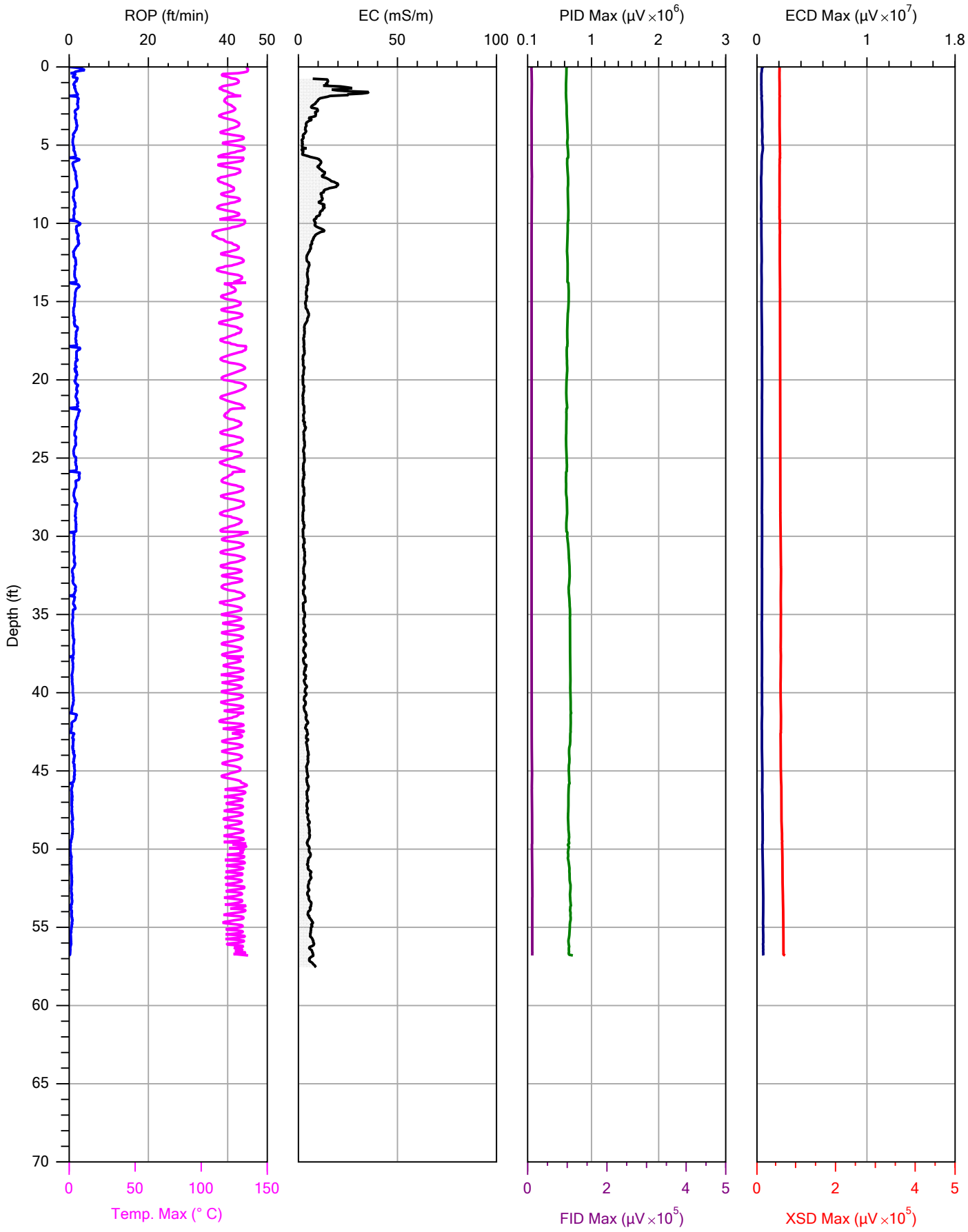
CASCADE
DRILLING | TECHNICAL SERVICES

		File: MIP-B2-01.MIP
Company: Cascade	Operator: Horrell	Date: 3/9/2018
Project ID: Infineon	Client: ERM	Location: El Segundo



CASCADE
DRILLING | TECHNICAL SERVICES

		File: MIP-B2-02.MIP
Company: Cascade	Operator: Horrell	Date: 3/7/2018
Project ID: Infineon	Client: ERM	Location: El Segundo



CASCADE
DRILLING | TECHNICAL SERVICES

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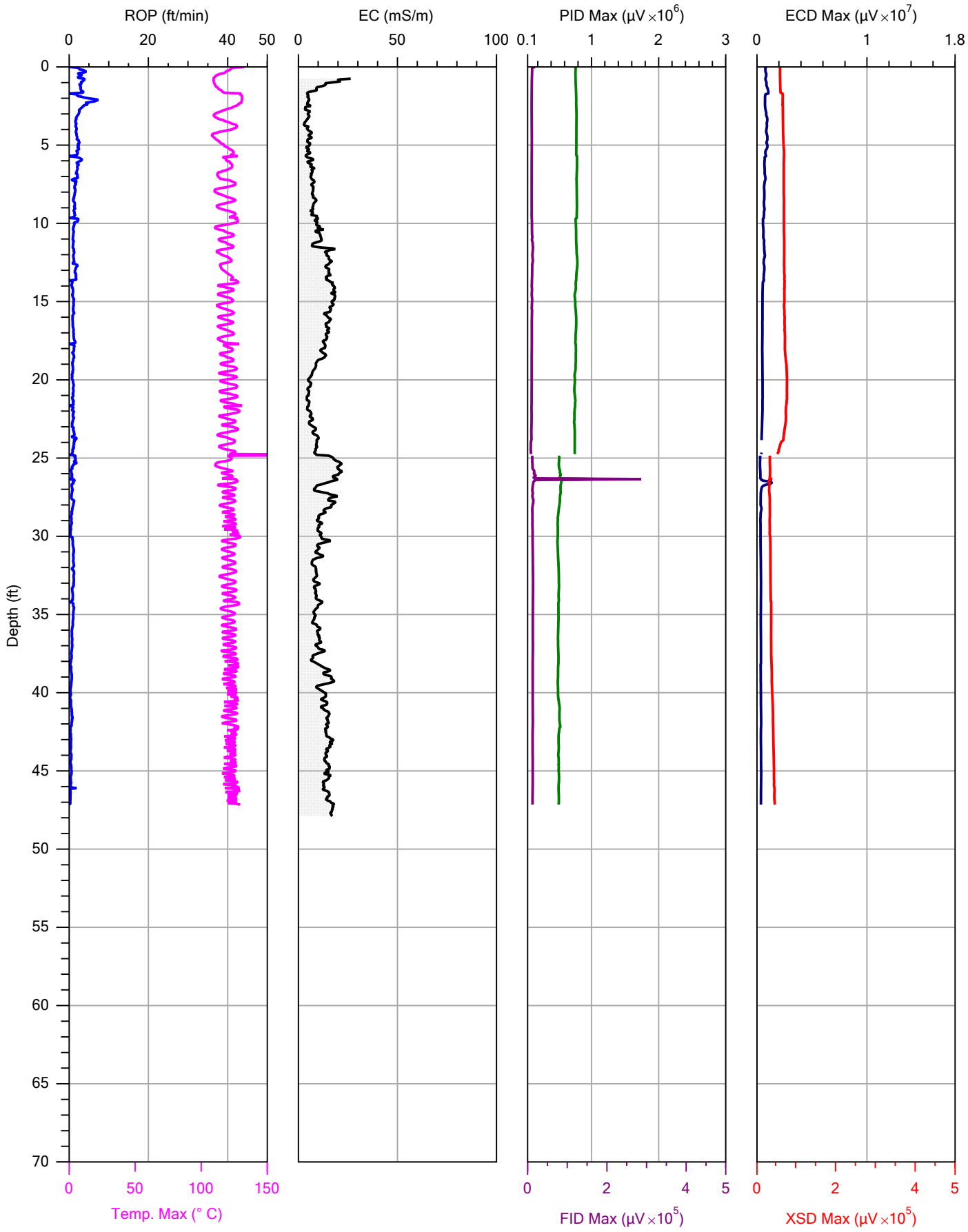
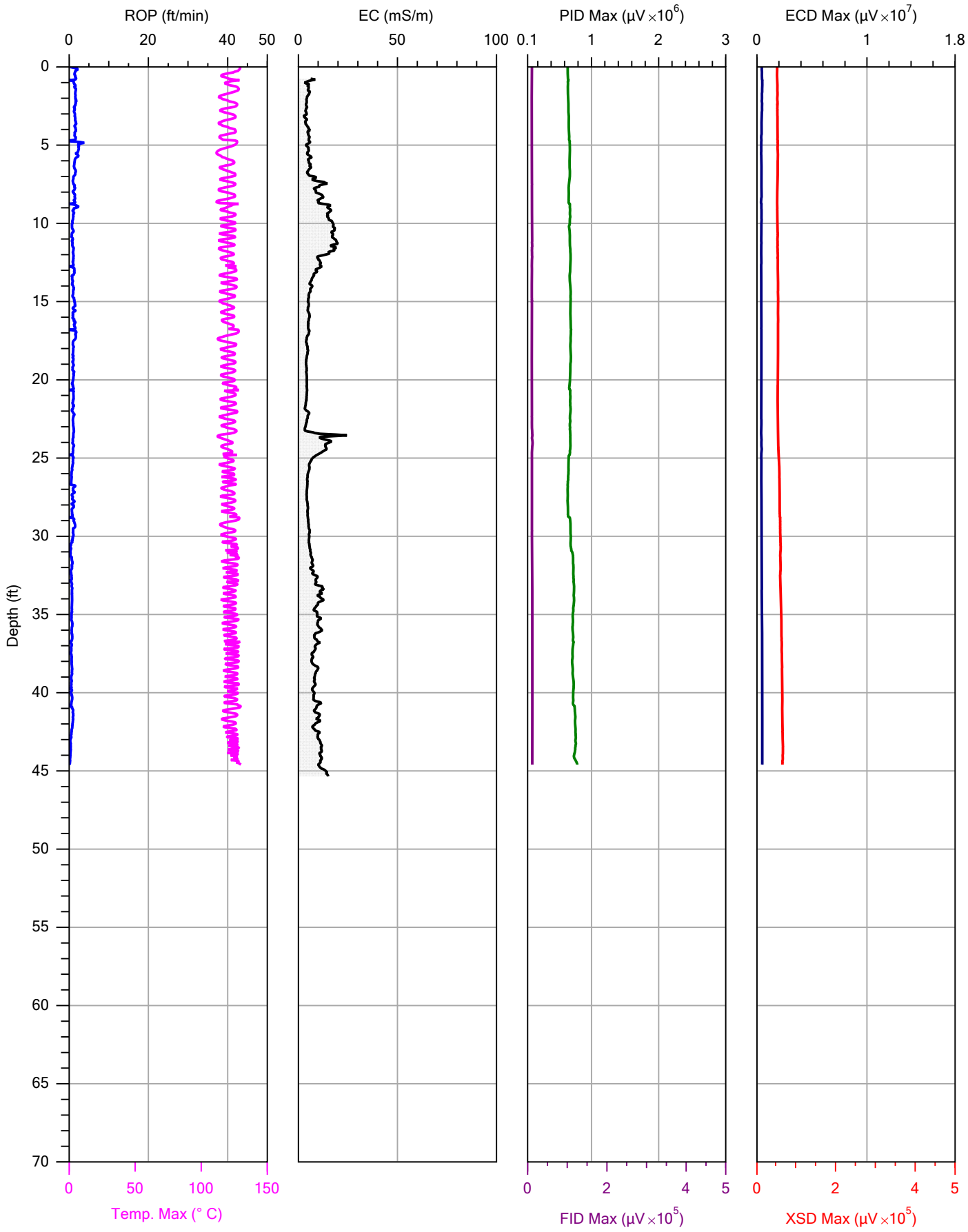
Company: Cascade	Operator: Horrell	Date: 3/7/2018
Project ID: Infineon	Client: ERM	Location: El Segundo



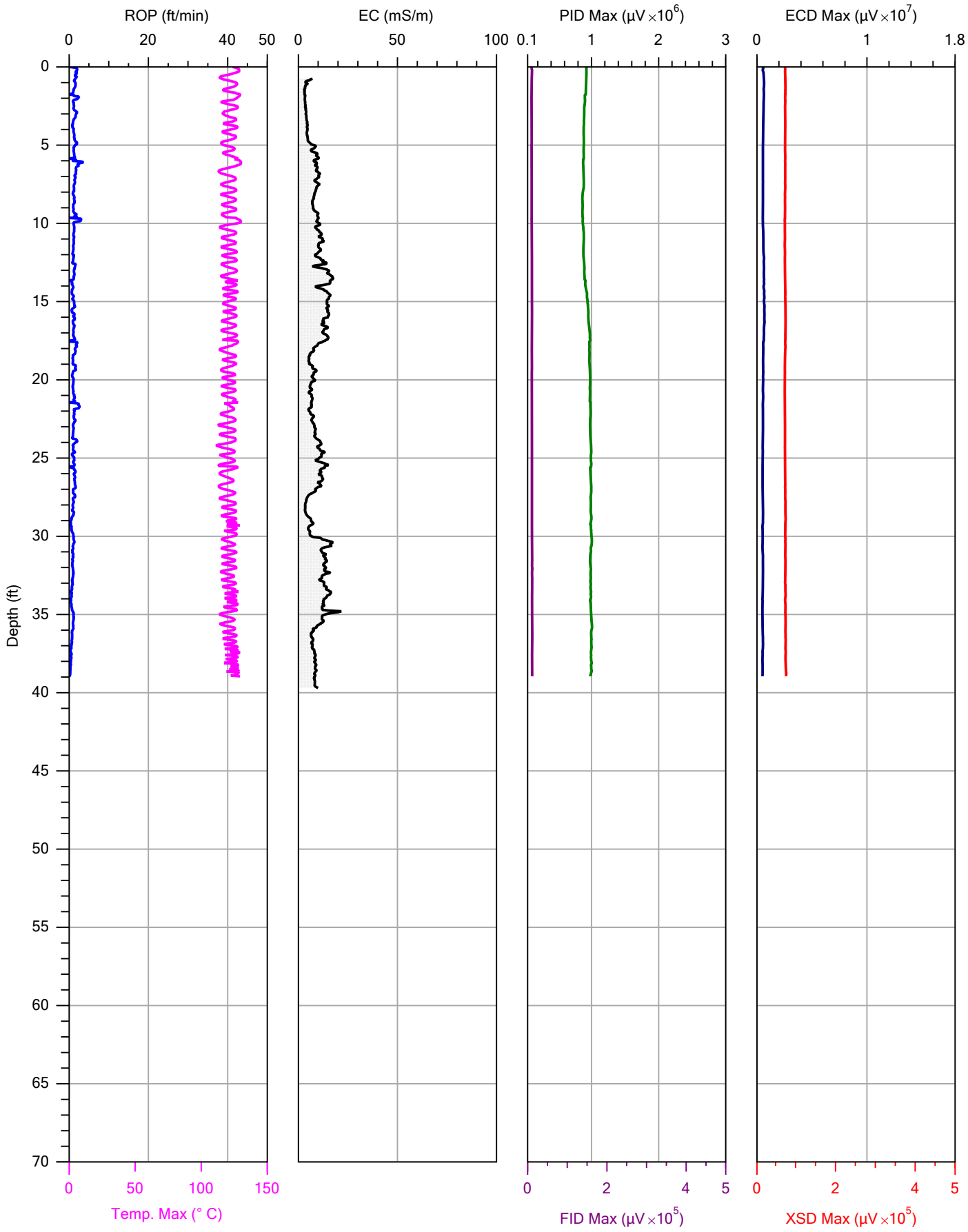
CASCADE
DRILLING | TECHNICAL SERVICES

		File: MIP-B2-04.MIP
Company: Cascade	Operator: Horrell	Date: 3/8/2018
Project ID: Infineon	Client: ERM	Location: El Segundo



CASCADE
DRILLING | TECHNICAL SERVICES

		File: MIP-B2-05.MIP
Company: Cascade	Operator: Horrell	Date: 3/8/2018
Project ID: Infineon	Client: ERM	Location: El Segundo



CASCADE
DRILLING | TECHNICAL SERVICES

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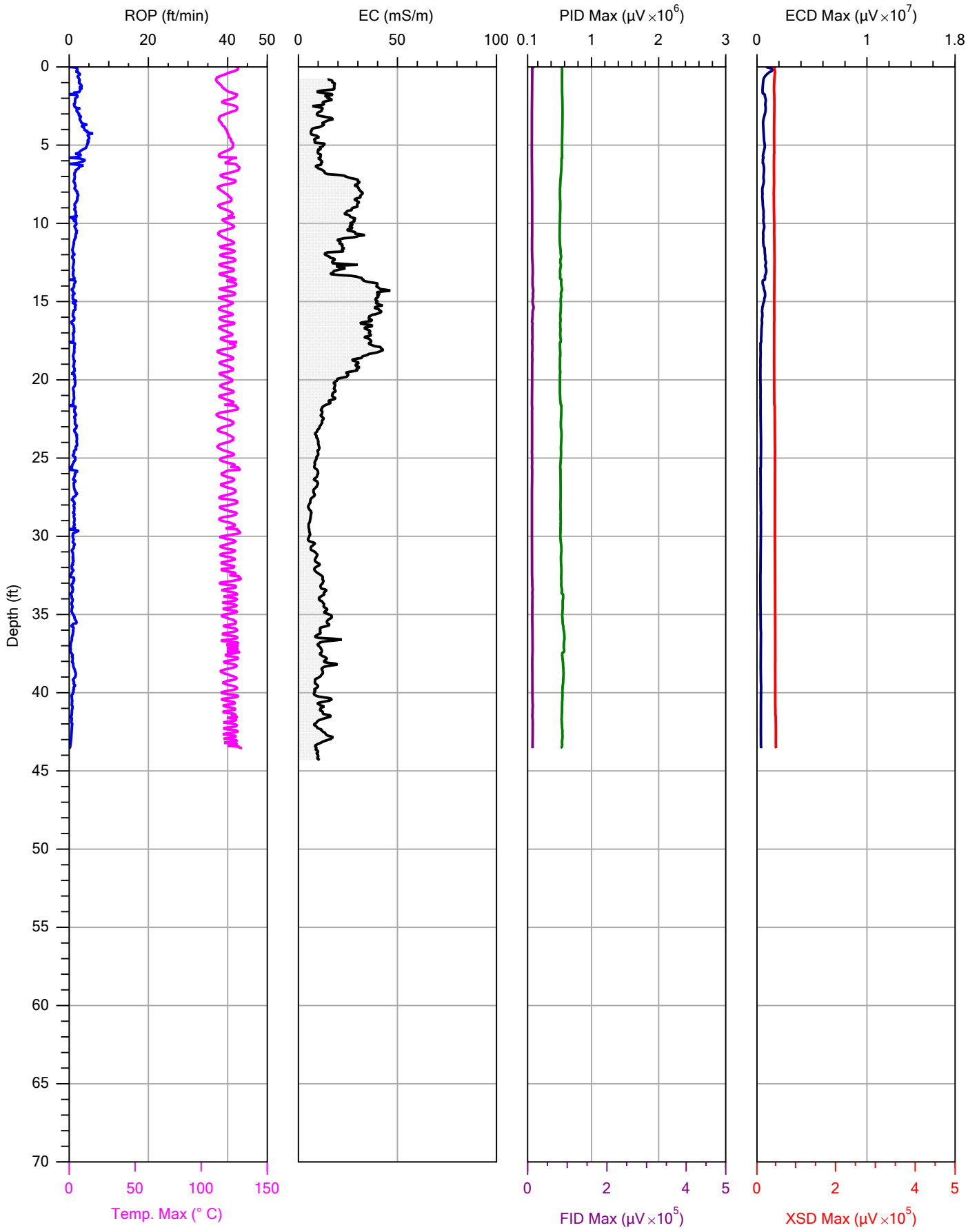
Company: Cascade	Operator: Horrell	Date: 3/8/2018
Project ID: Infineon	Client: ERM	Location: El Segundo



CASCADE
DRILLING | TECHNICAL SERVICES

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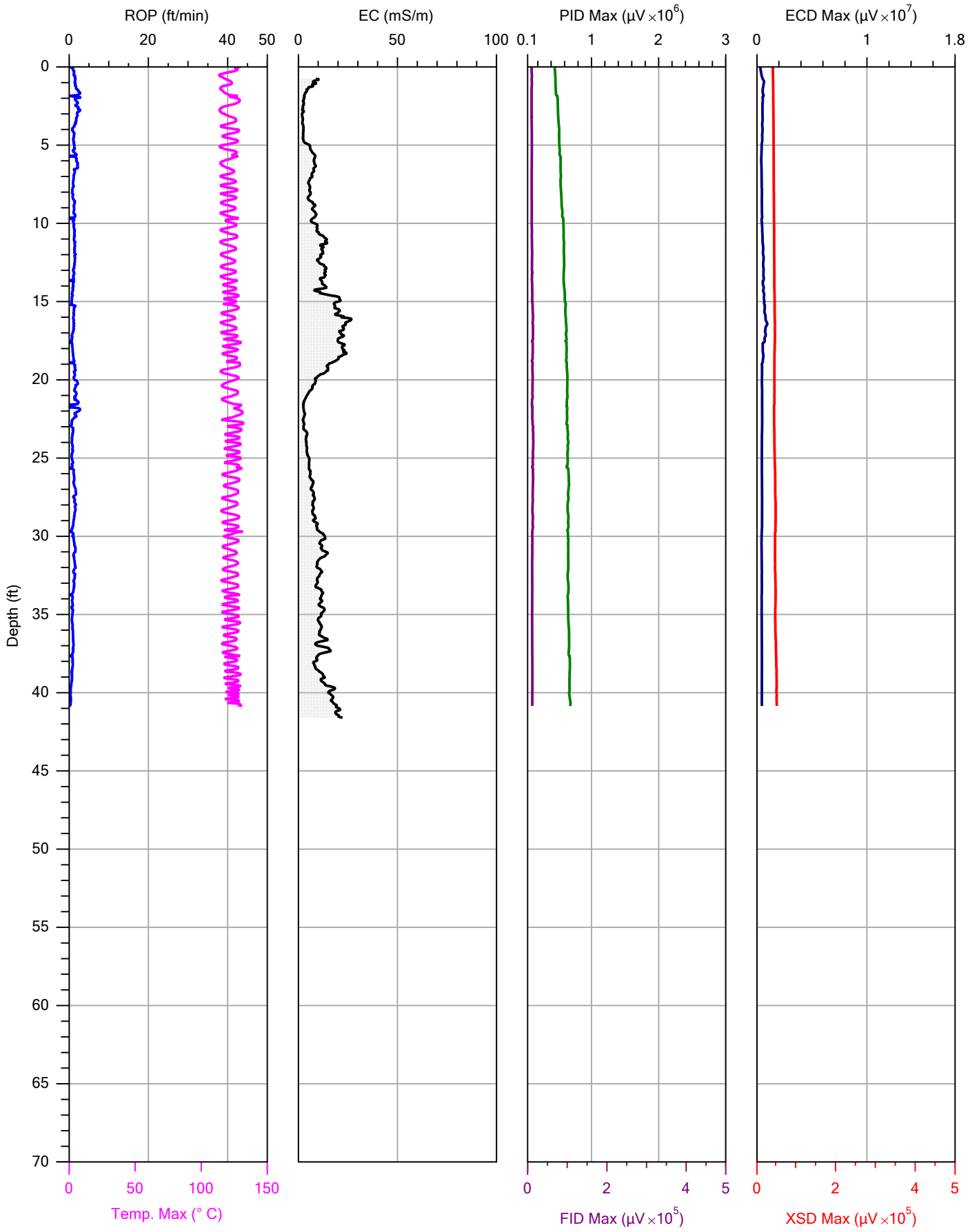
Company: Cascade	Operator: Horrell	Date: 3/9/2018
Project ID: Infineon	Client: ERM	Location: El Segundo



CASCADE
DRILLING | TECHNICAL SERVICES

		File: MIP-B2-08.MIP
Company: Cascade	Operator: Horrell	Date: 3/9/2018
Project ID: Infineon	Client: ERM	Location: El Segundo

Reference Material

The sections below provide information regarding the Cascade Personnel present at the site during the field activities, the specific equipment used during field activities, and background information on the MIP system.

Cascade Personnel

The following personnel were present during field activities at the Site:

- Mr. Chris Horrell, Cascade Technical Services (Site Characterization Analytical Chemist)

Equipment

The following equipment was utilized during field activities at the Site:

- Cone Penetrometer Test Rig
- Geoprobe 66 Series Direct Push Drill Rig
- MIP Controller (Nitrogen Flow and Heater)
- Geoprobe FI 6000 Computer
- 5890 Gas Chromatograph
- Electrical Conductivity
- ECD (Electron Capture Detector)
- XSD (Halogen Specific Detector)
- PID (Photo Ionization Detector) 10.2 eV Lamp
- FID (Flame Ionization Detector)
- 150' MIP Trunkline
- 1.75" O.D. MIP Probe
- 1.75" O.D. Drive Rods
- Ultra-High Purity Nitrogen
- Ultra-High Purity Hydrogen

MIP System Overview

The MIP is commonly used for quickly determining the locations of volatile organic compound (VOC) source zones and plumes. The MIP is most valuable in terms of its ability to provide "spatial correspondence", meaning that where the MIP detector response show peaks, there is likely to be elevated soil and groundwater concentrations. The MIP can also be used to provide extremely valuable data to streamline subsequent investigative tasks and improve the overall efficiency and accuracy of the site investigation. Vertical profiles, cross sectional views and 3D images of contaminant distribution can all be produced from the electronic data generated by the MIP logs. The unique capability of providing reliable, real-time information allows for informed and timely decision making in the field. The MIP works by heating the soils and groundwater adjacent to the probe to 120 degrees C. This volatilizes the VOCs and allows the VOCs to transfer through a Teflon membrane via a combination of concentration and pressure gradients. These VOCs are then swept into a nitrogen gas loop that carries these vapors to a series of detectors housed at the surface. Continuous chemical profiles are generated from each hole. Electrical conductivity of the soil is also measured and these logs can be compared to the chemical logs to better understand the relationship between the lithology and the contaminant distribution. The MIP technology is only appropriate for VOCs. The following section discusses the various detection systems that are commonly used with the MIP system.

Detector Overview

- ECD – Electron Capture Detector uses a radioactive Beta emitter (electrons) to ionize some of the carrier gas and produce a current between a biased pair of electrodes. When organic molecules contain electronegative functional groups, such as halogens, phosphorous, and nitro groups pass by the detector, they capture some of the electrons and reduce the current measured between the electrodes.
- XSD – The Halogen Specific Detector converts compounds containing halogens to their oxidation products and free halogen atoms by oxidative pyrolysis. These halogen atoms are adsorbed onto the activated platinum surface of the detector probe assembly resulting in an increase thermionic emission. This emission current provides a corresponding voltage that is measured via an electrometer circuit in the detector controller.
- PID – Photo Ionization Detector sample stream flows through the detector's reaction chamber where it is continuously irradiated with high energy ultraviolet light. When compounds are present that have a lower ionization potential than that of the irradiation energy (10.2 electron volts with standard lamp) they are ionized. The ions formed are collected in an electrical field, producing an ion current that is proportional to compound concentration. The ion current is amplified and output by the gas chromatograph's electrometer.
- FID – Flame Ionization Detector consists of a hydrogen / air flame and a collector plate. The effluent from the GC (trunkline) passes through the flame, which breaks down organic molecules and produces ions. The ions are collected on a biased electrode and produce an electric signal.

MIP Data Collection

- Depth - Data is collected every 0.05 feet, or twenty points per foot.
- Electrical Conductivity - Electrical Conductivity data is measured/collected in milli-siemens per Meter (ms/M). The conductivity of soils is different for each type of media. Finer grained sediments, such as silts or clays, will typically have a higher EC signal. While coarser grained sediments, sands and gravel, will typically have a lower EC signal.
- Rate of Penetration - Rate of penetration (ROP) is measured/collected in feet per minute (ft/min). Speed is an indication of the advancement rate of the MIP probe. In order to allow

for adequate heating of the MIP tooling, the MIP's ROP should not exceed one foot per minute.

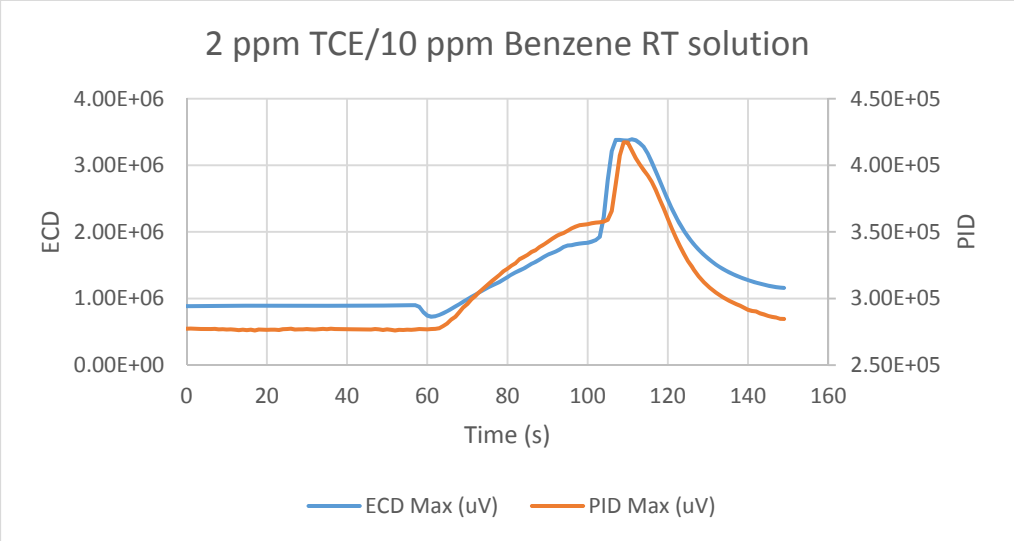
- Temperature - Temperature data is measured/collected in Degrees Celsius. Temperature is an indication of the physical temperature of the MIP block. Minimum and Maximum temperature is collected at each vertical interval. Cascade's temperature protocol indicates that the MIP probe temperature shall maintain a minimum temperature of 90 Degrees Celsius.
- Pressure - Pressure data is measured/collected in PSI. The pressure readings represent the pressure being delivered to the MIP's nitrogen gas line. Deviations greater than of 1.5 PSI outside of the starting pressure indicate a system leak or obstruction is present.
- Detector (XSD, ECD, PID, FID) - Detector responses are measured/collected in micro Volts (uV). Detector responses are an indication of relative contaminant responses. Minimum and Maximum detector responses are collected at each vertical interval.

Response Testing

Response testing (RT) is an integral part of ensuring the quality of data from the MIP system. Response testing is conducted before and after each log. This ensures the validity of the data and the integrity of the system. The RT provides a traceable indication that the MIP system detectors are adequately responding and allows the carrier gas trip time to be calculated on the physical components of the system.

Cascade uses acceptance criteria to evaluate the RTs. The acceptable criteria for an RT is defined for specified concentrations of RT solution and a specified N2 trunkline flow rate. Documenting the RTs will provide a level of quality assurance for each MIP project and will also allow operators and data reviewers to identify systems in need of maintenance.

The trip time is measured by recording the time between the moment when the VOA is placed over the membrane and the response of the detectors, as viewed on the MIP data acquisition unit. The baseline and peak response value are also recorded for comparison with other MIP response tests. The trip time is entered manually into the data acquisition system account for the time it takes for compounds in the subsurface to travel the length of the trunkline during the MIP boring.

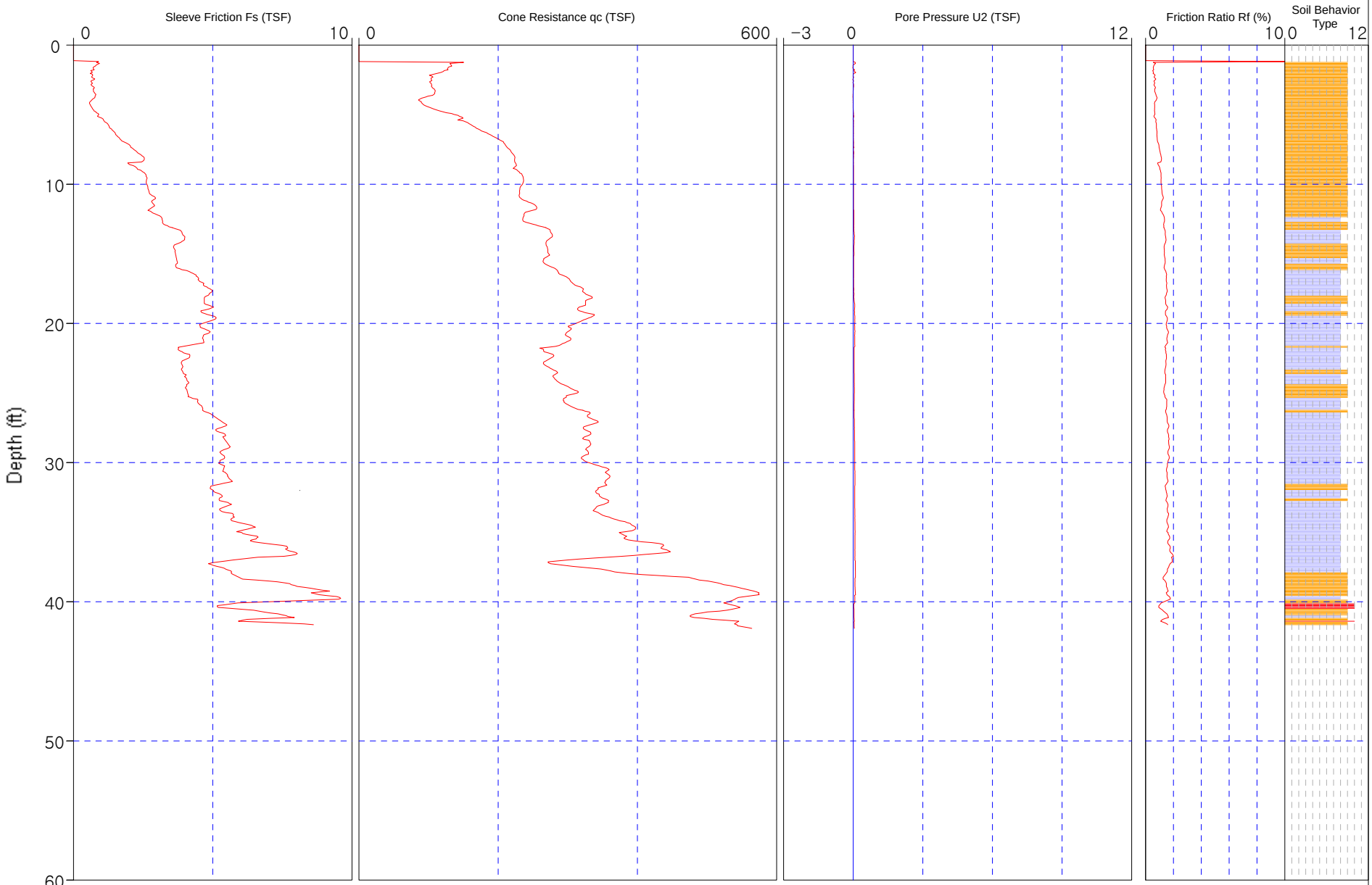


Appendix A – Fugro CPT Plots

Job Number: 04.09180004
Operator: D. Garza
Location: El Segundo, CA

CPT Number: CPTMIP-B1-01
Date: 01-Mar-2018
Elevation: 0.00

Coordinates: 33.919067 -118.400849
Cone Number: CP15-CF75PB7SN2-P1E1 2732



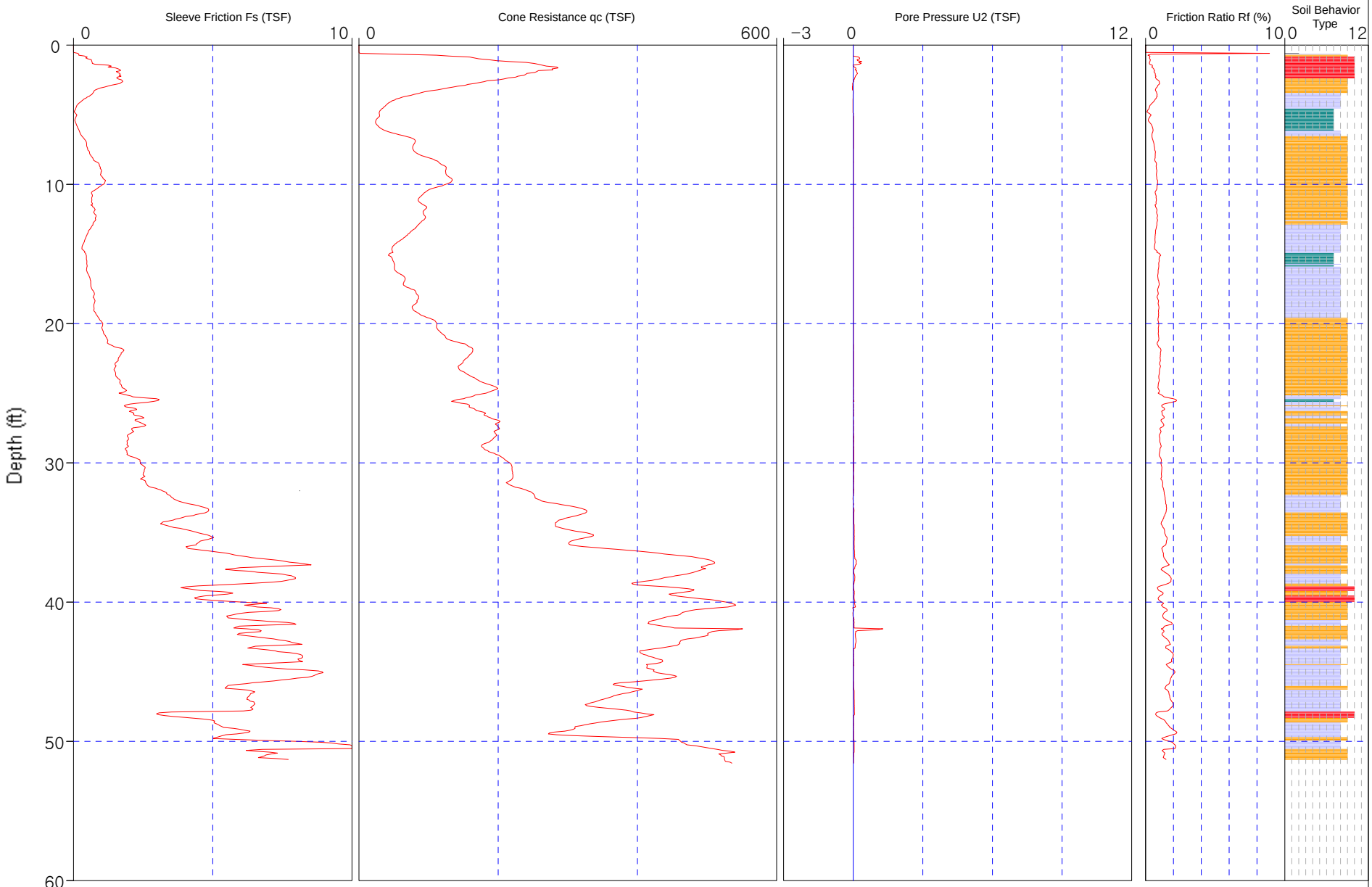
(1) sensitive fine grained (OL-CH)
(2) organic material (OL-OH)
(3) clay (CH)
(4) silty clay to clay (CL-CH)
(5) clayey silt to silty clay (MH-CL)
(6) sandy silt to clayey silt (ML-MH)
(7) silty sand to sandy silt (SM-ML)
(8) sand to silty sand (SM-SP)
(9) sand (SW-SP)
(10) gravel to gravelly sand (SW-GW)
(11) very stiff fine grained* (CH-CL)
(12) sand to clayey sand* (SC-SM)

Robertson et al. 1986 *Overconsolidated or Cemented

Job Number: 04.09180004
Operator: D. Garza
Location: El Segundo, CA

CPT Number: CPTMIP-B1-04
Date: 01-Mar-2018
Elevation: 0.00

Coordinates: 33.918319 -118.400464
Cone Number: CP15-CF75PB7SN2-P1E1 2732

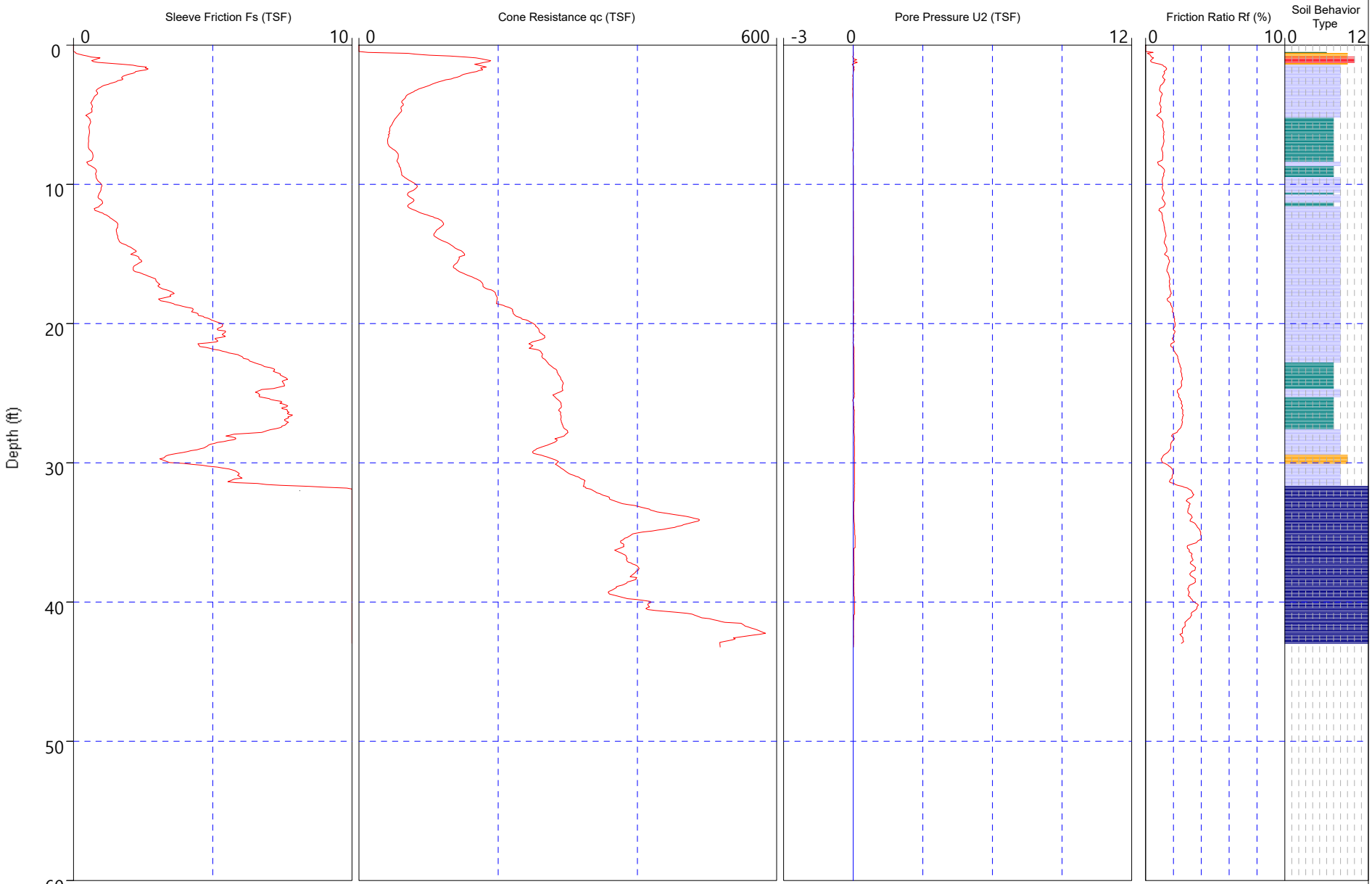


Robertson et al. 1986 *Overconsolidated or Cemented

Job Number: 04.09180004
Operator: D. Garza
Location: El Segundo, CA

CPT Number: CPTMIP-B1-05
Date: 02-Mar-2018
Elevation: 0.00

Coordinates: 33.918298 -118.400937
Cone Number: CP15-CF75PB7SN2-P1E1 2732



Robertson et al. 1986 *Overconsolidated or Cemented

ERM
1920 Main Street, Suite 300
Irvine, CA 92614
Phone: (949) 623-4700
Fax: (949) 623-4711

LOG OF MONITORING WELL: B2-1

Project Number: 0444932
Project Name: Infineon - Block 2
Location: El Segundo, CA
Contractor: Cascade Drilling
Drilling Method: HSA CME 85
Logged By: ML
Reviewed By: OR
Surface Elevation: feet MSL

Date Started: 3/29/2018
Date Completed: 3/29/2018
Total Depth: 81.5 feet
Borehole Diameter: 8" inches
Initial Water Level: feet bgs
Notes:

Depth (ft)	Sample Interval	Sample Number	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations	WELL DIAGRAM
7		B2-1-6	1	SP		Dusky brown (5YR 2/2), fine grained SAND, well sorted, damp	Portland Cement
15							Granular Bentonite
18							#3 Sand
19		B2-1-18	1.2	SP		Moderate brown (5YR 4/4), fine to medium grained SAND, some clay, medium dense, damp	Granular Bentonite
29							Portland Cement
40							Granular Bentonite

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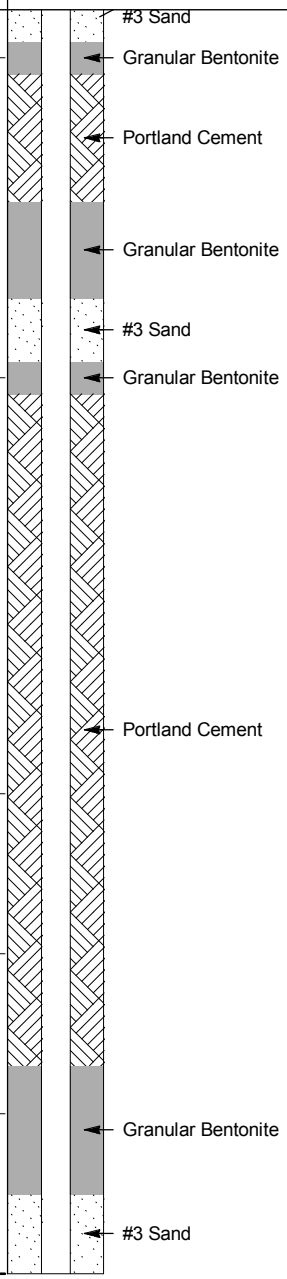
LOG OF MONITORING WELL: B2-1

Project Number: 0444932
Project Name: Infineon - Block 2
Location: El Segundo, CA
Contractor: Cascade Drilling
Drilling Method: HSA CME 85
Logged By: ML
Reviewed By: OR
Surface Elevation: feet MSL

Date Started: 3/29/2018
Date Completed: 3/29/2018
Total Depth: 81.5 feet
Borehole Diameter: 8" inches
Initial Water Level: feet bgs
Notes:

Depth (ft)	Sample Interval	Sample Number	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations
43		B2-1-42	1.2	SP		Moderate yellowish brown (10YR 5/4), fine to medium grained SAND, well sorted, medium dense, dry
52		B2-1-52	1.6	SP		Moderate yellowish brown (10YR 5/4), medium grained SAND, well sorted, medium dense, dry
65			1.7	SP		Dark yellowish orange (10YR 6/4), very fine grained SAND, well sorted, medium dense, dry
70			1.5	SP		Grayish orange (10YR 7/4), fine grained SAND, well sorted, medium dense, dry
75			1.7	SP		Grayish orange (10YR 7/4), very fine to fine grained SAND, well sorted, medium dense, dry
80		B2-1-80	1.3	SP		Moderate yellowish brown (10YR 5/4) to grayish orange (10YR 7/4), very fine to fine grained SAND, well sorted, medium dense, dry
83						Total Depth - 81.5 feet bgs

WELL DIAGRAM



ERM
1920 Main Street, Suite 300
Irvine, CA 92614
Phone: (949) 623-4700
Fax: (949) 623-4711

LOG OF MONITORING WELL: B2-2

Project Number: 0444932
Project Name: Infineon - Block 2
Location: El Segundo, CA
Contractor: Cascade Drilling
Drilling Method: HSA CME 85
Logged By: DB
Reviewed By: OR
Surface Elevation: feet MSL

Date Started: 3/12/2018
Date Completed: 3/14/2018
Total Depth: 80.3 feet
Borehole Diameter: 8" inches
Initial Water Level: feet bgs
Notes:

Depth (ft)	Sample Interval	Sample Number	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations	WELL DIAGRAM
5				SM		Very dark brown (10YR 2/2), SAND with silt, moist	
7		B2-2-7	0.2	SP		Dark reddish brown (5YR 3/3), SAND, well sorted, moist, no odor, trace medium-coarse grains	Portland Cement
10						At 10 feet: Color change to yellowish brown (10YR 5/4), minor medium-coarse grains, wet	
15			0.2				Granular Bentonite
17			0.2			At 17 feet:Trace staining, medium-coarse grains, trace fines, non-plastic, wet	
19		B2-2-19	0.3				#3 Sand
20						At 20 feet: 10-20% finer	Granular Bentonite
24						At 24 feet: Poorly graded coarse grains, non-plastic, moist	
25			0.7	SP			
30			0.1				
31			0.2			At 31 feet: Trace staining, 20-30% silty fines, moist	Portland Cement
35			0.1			At 35 feet: medium coarse grained sand, 20-40% fines, low toughness, moist	
40			0.4				

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Irvine, CA 92614
Phone: (949) 623-4700
Fax: (949) 623-4711

LOG OF MONITORING WELL: B2-2

Project Number: 0444932
Project Name: Infineon - Block 2
Location: El Segundo, CA
Contractor: Cascade Drilling
Drilling Method: HSA CME 85
Logged By: DB
Reviewed By: OR
Surface Elevation: feet MSL

Date Started: 3/12/2018
Date Completed: 3/14/2018
Total Depth: 80.3 feet
Borehole Diameter: 8" inches
Initial Water Level: feet bgs
Notes:

Depth (ft)	Sample Interval	Sample Number	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations	WELL DIAGRAM
43				SM		Light yellowish brown (10YR 6/4), silty fine SAND, trace medium-coarse grains, damp, no odor	Granular Bentonite
44							
45			0.4			Yellowish brown (10YR 5/4) SAND, minor medium-coarse grains, poorly graded, no odor	
46		B2-2-46	0.6	SP			#3 Sand
47							Granular Bentonite
48							
49						Light yellowish brown (10YR 6/4), silty fine SAND, trace medium-coarse grains, damp, no odor	
50							
51							
52							
53							
54							Portland Cement
55			0.7				
56							
57							
58							
59							
60			0.2				
61							
62							Granular Bentonite
63							
64				SM			
65		B2-2-65	0.5			At 65 feet: 10-30% coarse grained	#3 Sand
66							
67							Granular Bentonite
68							
69							
70			0.5			At 70-75 feet: Trace oxidation stains, intermittent medium to	
71						dense fine silts/sands	
72							Portland Cement
73							
74							
75			0.4			At 75 to 80 feet: Trace discoloration, no odor	
76							
77							
78							Granular Bentonite
79							
80			0.3			Total Depth - 80.3 feet bgs	#3 Sand
81							
82							
83							

MW IRVINE - - 4/27/18 11:16 - C:\USERS\OWEN.RUDOLF\DESKTOP\INFINEON - BLOCK 2.GPJ

ERM
1920 Main Street, Suite 300
Irvine, CA 92614
Phone: (949) 623-4700
Fax: (949) 623-4711

LOG OF MONITORING WELL: B2-3

Project Number: 0444932
Project Name: Infineon - Block 2
Location: El Segundo, CA
Contractor: Cascade Drilling
Drilling Method: HSA CME 85
Logged By: DB
Reviewed By: OR
Surface Elevation: feet MSL

Date Started: 3/13/2018
Date Completed: 3/14/2018
Total Depth: 66.5 feet
Borehole Diameter: 8" inches
Initial Water Level: feet bgs
Notes:

Depth (ft)	Sample Interval	Sample Number	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations	WELL DIAGRAM
1–4							
5		B2-3-5	0	GM		Very dark grayish brown (10YR 3/2), SILTY GRAVEL-SAND, moist, non plastic fines, trace organic material, no odor	
6–7						Reddish brown (5YR 4/4), poorly graded SAND, medium-coarse grains, wet, no odor	Portland Cement
8–11			0	SP			
12–14				SP		Dark yellowish brown (10YR 4/4), poorly graded SAND, medium-coarse grains, non-plastic fines, moist, no odor	Granular Bentonite
15			0	SM		Brown (10YR 5/3), silty fine SAND, poorly graded, non-plastic, damp, no odor	
16–17		B2-3-17		SP		Dark yellowish brown (10YR 4/4), poorly graded SAND, medium-coarse grains, non-plastic, moist, no odor	#3 Sand
18–19			0.1				Granular Bentonite
20			0.4	SM		Brown (10YR 5/3), silty fine SAND, poorly graded, non-plastic, dry-damp, no odor	
21–24				SP		Dark yellowish brown (10YR 4/4), poorly graded SAND, 10% finer, medium-coarse grains, non-plastic, moist, no odor	Portland Cement
25			0.2	SM		Grayish brown (10YR 5/2), silty fine SAND, poorly graded fines, damp, no odor	
26–28				SP		Yellowish brown (10YR 5/2), silty fine SAND, 30%medium-coarse grains, poorly graded, non-plastic, dry, no odor	Granular Bentonite
29		B2-3-29	0				#3 Sand
30				SM		Grayish brown (10YR 5/2), silty fine SAND, 30% medium-coarse grains, poorly graded, non-plastic, dry, no odor	Granular Bentonite
31–34				SP		Yellowish brown (10YR 5/4), poorly graded SAND, medium-coarse grains, non-plastic, moist, no odor	
35			0	SM		Grayish brown (10YR 5/2), silty fine SAND, 10-30% medium grains, poorly graded, dry, no odor	
36–39				SP		Yellowish brown (10YR 5/4), poorly graded SAND, 10-20% silty fines, non-plastic, moist, no odor	
40			0	SM		Brown (10YR 4/3), silty fine SAND, 40% medium-coarse grains, non-plastic, no odor	
41				SP		Light yellowish brown (10YR 4/6), SAND, poorly graded, 10%silty fines, non-plastic, moist, no odor	Portland Cement

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LOG OF MONITORING WELL: B2-3

Project Number: 0444932
Project Name: Infineon - Block 2
Location: El Segundo, CA
Contractor: Cascade Drilling
Drilling Method: HSA CME 85
Logged By: DB
Reviewed By: OR
Surface Elevation: feet MSL

Date Started: 3/13/2018
Date Completed: 3/14/2018
Total Depth: 66.5 feet
Borehole Diameter: 8" inches
Initial Water Level: feet bgs
Notes:

Depth (ft)	Sample Interval	Sample Number	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations	WELL DIAGRAM
43				SP			
44							
45			0				
46				SP		Dark yellowish brown (10YR 4/6), SAND, poorly graded, coarse grained, medium to low density, no odor	
47				SM		Light yellowish brown (10YR 6/4), silty SAND, ~40% fines, some coarse grains non-plastic, low density	
48				SP			
49				SM		Dark yellowish brown (10YR 4/6), poorly graded SAND, coarse grained, 10% fines, no odor	
50			0	SM		Light yellowish brown (10YR 6/4), Silty SAND, 40% fines, some coarse grains, non-plastic, low density	
51				SP			
52						Grayish brown (10YR 5/2), silty fine SAND, poorly graded, 10-20% medium coarse grains, non-plastic, no odor, damp	Granular Bentonite
53						Dark yellowish brown (10YR 4/6), poorly graded SAND, medium-coarse grained, moist, no odor	#3 Sand
54		B2-3-54	0	SM		Light yellowish brown (10YR 4/6), silty SAND, 10-20%, medium grains, low density, damp, no odor	Granular Bentonite
55							
56						Silty fine SAND, trace medium grains, non-plastic, low-medium density, no odor	
57							Portland Cement
58							
59							
60			0				
61				SM			Granular Bentonite
62							#3 Sand
63							
64							
65			0				
66							
67						Total Depth - 66.5 feet bgs	
68							
69							
70							
71							
72							
73							
74							
75							
76							
77							
78							
79							
80							
81							
82							
83							

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LOG OF MONITORING WELL: B2-5

Project Number: 0444932
Project Name: Infineon - Block 2
Location: El Segundo, CA
Contractor: Cascade Drilling
Drilling Method: HSA CME 85
Logged By: ML
Reviewed By: OR
Surface Elevation: feet MSL

Date Started: 3/26/2018
Date Completed: 3/26/2018
Total Depth: 81.5 feet
Borehole Diameter: 8" inches
Initial Water Level: feet bgs
Notes:

Depth (ft)	Sample Interval	Sample Number	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations	WELL DIAGRAM
5		B2-5-5	0.4	SP		Moderate brown (5YR 3/4), fine to medium grained SAND, some silt, well sorted, damp	Portland Cement
12							Granular Bentonite
15		B2-5-15	1.7	SP		Light brown (5YR 5/6) to moderate yellowish brown (10YR 5/4), fine to medium grained SAND, some silt, well sorted, medium dense, dry	#3 Sand
16							Granular Bentonite
26							Portland Cement
36							Granular Bentonite
39		B2-5-39	2	SP		Dark yellowish orange (10YR 6/6), fine to medium grained SAND, some silt, well sorted, medium dense, dry	#3 Sand
40							Granular Bentonite

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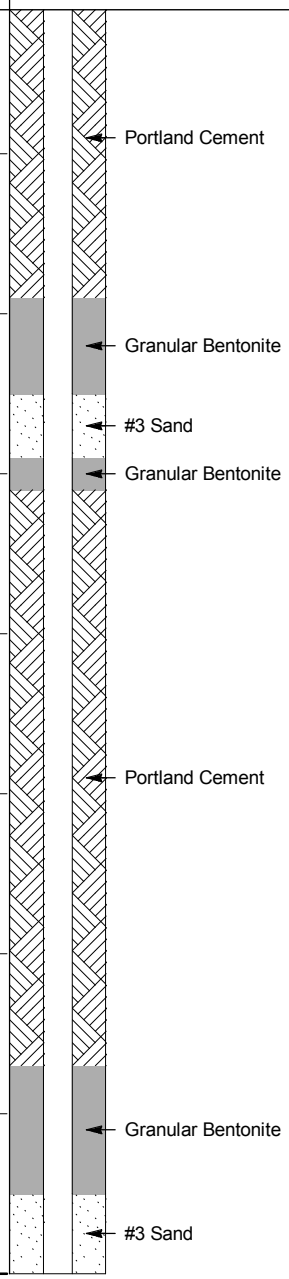
LOG OF MONITORING WELL: B2-5

Project Number: 0444932
Project Name: Infineon - Block 2
Location: El Segundo, CA
Contractor: Cascade Drilling
Drilling Method: HSA CME 85
Logged By: ML
Reviewed By: OR
Surface Elevation: feet MSL

Date Started: 3/26/2018
Date Completed: 3/26/2018
Total Depth: 81.5 feet
Borehole Diameter: 8" inches
Initial Water Level: feet bgs
Notes:

Depth (ft)	Sample Interval	Sample Number	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations
45	✕		1.9	SP		Dark yellowish orange (10YR 6/6), very fine to fine grained SAND, some silt, well sorted, medium dense, dry
50	✕		1.8	SM		Greyish orange (10YR 7/4) to moderate yellowish brown (10YR 5/4), very fine to fine grained SAND, some silt, well sorted, medium dense
55	✕	B2-5-55	1.9	SM		Moderate yellowish brown (10YR 5/4), very fine to fine grained SAND, some silt, well sorted, medium dense
60	✕		1.2	SM		Grayish orange (10YR 7/4), fine grained SAND, some silt, dense, dry
65	✕		1.6	SM		Greyish orange (10YR 7/4), fine grained SAND, some silt, well sorted, dry
70	✕		2.4	SM		Greyish orange (10YR 7/4), very fine to fine grained SAND, some silt, well sorted, medium dense, some thin, moderate brown (5YR4/4) sand lamina
75	✕		2.1	SM		Moderate yellowish brown (10YR 5/4), fine grained SAND, some silt, well sorted, medium dense, damp
80	✕	B2-5-80	2.8	SM		Moderate yellowish brown (10YR 5/4), very fine grained SAND, some silt, well sorted, medium dense, damp
						Total Depth - 81.5 feet bgs

WELL DIAGRAM



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LOG OF MONITORING WELL: B2-6

Project Number: 0444932
Project Name: Infineon - Block 2
Location: El Segundo, CA
Contractor: Cascade Drilling
Drilling Method: HSA CME 85
Logged By: ML
Reviewed By: OR
Surface Elevation: feet MSL

Date Started: 3/16/2018
Date Completed: 3/16/2018
Total Depth: 81.5 feet
Borehole Diameter: 8" inches
Initial Water Level: feet bgs
Notes:

Depth (ft)	Sample Interval	Sample Number	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations	WELL DIAGRAM
5–6	■	B2-6-5	0.6	SP		Top 6" of sample: Dark yellowish brown (10YR 4/2) fine grained SAND, well sorted, medium dense, at bottom: lamina, coarse SAND and GRAVEL Bottom 12" of sample: moderate yellowish brown (10YR 5/4), fine grained SAND, medium dense, dry	Portland Cement
13							Granular Bentonite
16–17	■	B2-6-16	0.4	SP		Top 9" of sample: moderate yellowish brown (10YR 5/4), medium to coarse grained SAND, well sorted, medium dense Bottom 9" of sample: dark yellowish orange (10YR 6/6), medium to coarse grained SAND, well sorted, medium dense	#3 Sand Granular Bentonite
21							Portland Cement
25							Granular Bentonite
28–29	■	B2-6-28	0.9	SP		Top 9" of sample: moderate yellowish brown (10YR 4/2) medium to coarse grained SAND, well sorted, medium dense, dry Bottom 9" of sample: grayish orange (10YR 7/4), fine grained SAND, moderately sorted, medium dense	#3 Sand Granular Bentonite
40–41	■		0.8	SP		Grayish orange (10YR 7/4), fine grained SAND, medium dense, dry	Portland Cement

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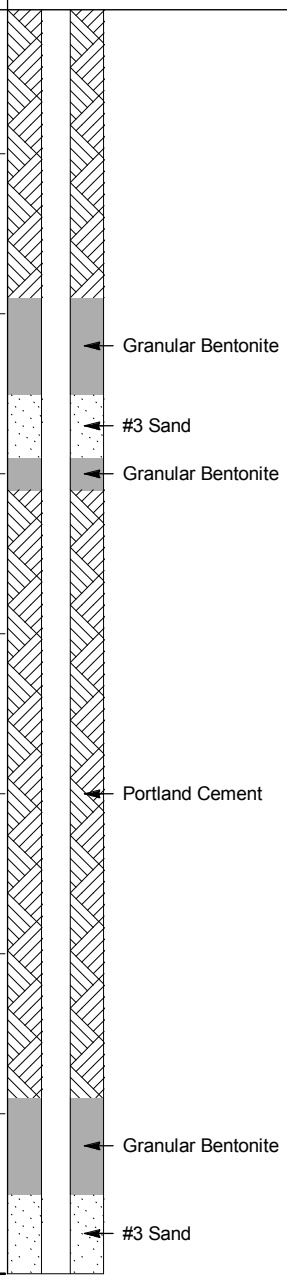
LOG OF MONITORING WELL: B2-6

Project Number: 0444932
Project Name: Infineon - Block 2
Location: El Segundo, CA
Contractor: Cascade Drilling
Drilling Method: HSA CME 85
Logged By: ML
Reviewed By: OR
Surface Elevation: feet MSL

Date Started: 3/16/2018
Date Completed: 3/16/2018
Total Depth: 81.5 feet
Borehole Diameter: 8" inches
Initial Water Level: feet bgs
Notes:

Depth (ft)	Sample Interval	Sample Number	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations
43						
44						
45	⧗		0.8	SP		Grayish orange (10YR 7/4), fine grained SAND, medium dense to dense, dry
46	⧗					
47						
48						
49						
50	⧗		0.8	SP		Grayish orange (10YR 7/4), very fine to fine grained SAND, well sorted, medium dense to dense
51	⧗					
52						
53						
54						
55	⧗		1.1	SP		Grayish orange (10YR 7/4), very fine to fine grained SAND, well sorted, dense, dry
56	⧗	B2-6-55				
57						
58						
59						
60	⧗		0.7	SP		Grayish orange (10YR 7/4), very fine grained SAND, dense, dry
61	⧗					
62						
63						
64						
65	⧗		1.1	SP		Grayish orange (10YR 7/4), fine grained SAND, medium dense, dry. At bottom: dusky yellowish brown (10YR 2/2) silty SAND lamina
66	⧗					
67						
68						
69						
70	⧗		1.1	SP		Grayish orange (10YR 7/4), very fine to fine grained SAND, well sorted, medium dense to dense, dry
71	⧗					
72						
73						
74						
75	⧗		0.7	SP		Moderate yellowish brown (10YR 5/4), very fine to fine grained SAND, well sorted, medium dense to dense, dry
76	⧗					
77						
78						
79						
80	⧗		0.7	SP		Moderate yellowish brown (10YR 5/4), very fine to fine grained SAND, well sorted, dense, dry
81	⧗	B2-6-80				
82						Total Depth - 81.5 feet bgs
83						

WELL DIAGRAM



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LOG OF MONITORING WELL: B2-7

Project Number: 0444932
Project Name: Infineon - Block 2
Location: El Segundo, CA
Contractor: Cascade Drilling
Drilling Method: HSA CME 85
Logged By: DB
Reviewed By: OR
Surface Elevation: feet MSL

Date Started: 3/15/2018
Date Completed: 3/15/2018
Total Depth: 81.5 feet
Borehole Diameter: 8" inches
Initial Water Level: feet bgs
Notes:

Depth (ft)	Sample Interval	Sample Number	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations	WELL DIAGRAM
1–5							Portland Cement
6–7	■	B2-7-6	0	SW		Dark brown (10YR 3/3), SAND, trace gravel and silts, poorly graded, moist no odor	
8–12							Granular Bentonite
13–14	■	B2-7-13	0.1	SW		Dark brown (10YR 3/3), SAND, trace medium to coarse grains, poorly graded, moist, no odor	#3 Sand / Granular Bentonite
15–27							Portland Cement / Granular Bentonite
28–29	■	B2-7-28	0.3	SP		Yellowish brown (10YR 5/4), SAND, minor medium-coarse grains, trace silty fines, poorly graded, moist, no odor	#3 Sand / Granular Bentonite
30–41							Portland Cement

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LOG OF MONITORING WELL: B2-7

Project Number: 0444932
Project Name: Infineon - Block 2
Location: El Segundo, CA
Contractor: Cascade Drilling
Drilling Method: HSA CME 85
Logged By: DB
Reviewed By: OR
Surface Elevation: feet MSL

Date Started: 3/15/2018
Date Completed: 3/15/2018
Total Depth: 81.5 feet
Borehole Diameter: 8" inches
Initial Water Level: feet bgs
Notes:

Depth (ft)	Sample Interval	Sample Number	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations	WELL DIAGRAM
43							
44							
45	⧗		0.2	SP		Yellowish brown (10YR 5/4), SAND, minor medium-coarse grains, trace silty fines, poorly graded, moist, no odor, trace staining	
46	⧗						
47							
48							
49							
50	⧗		0.1	SP		Yellowish brown (10YR 5/4), SAND, minor medium-coarse grains, trace silty fines, poorly graded, moist, no odor, trace staining	
51	⧗						
52							Granular Bentonite
53							
54							
55	⧗		0.4	SM		Yellowish brown (10YR 5/4), \silty fine SAND, trace medium-coarse grains, poorly graded, moist, no odor, 50-80% fines, Trace staining at 55-55.5	#3 Sand
56	⧗	B2-7-55					Granular Bentonite
57							
58							
59							
60	⧗		0.5	SM		Yellowish brown (10YR 5/4), silty fine SAND, trace medium grains, damp, no odor	
61	⧗						
62							
63							
64							
65	⧗		0.5	SM		Yellowish brown (10YR 5/4), silty fine SAND, trace medium grains, damp, no odor	
66	⧗						Portland Cement
67							
68							
69							
70	⧗		0.6	SM		Olive brown (2.5Y 4/4), silty SAND, trace medium grains, non-plastic, moist, no odor Trace staining at 71-71.5	
71	⧗						
72							
73							
74							
75	⧗		0.7	SM		Light yellowish brown (10YR 6/4), silty fine SAND, trace medium grains, damp, no odor Minor staining at 75-75.5	
76	⧗						
77							Granular Bentonite
78							
79							
80	⧗		0.8	SM		Yellowish brown (10YR 5/4), silty fine SAND, poorly graded, damp, no odor Trace staining 81-81.5	#3 Sand
81	⧗	B2-7-80					
82						Total Depth - 81.5 feet bgs	
83							

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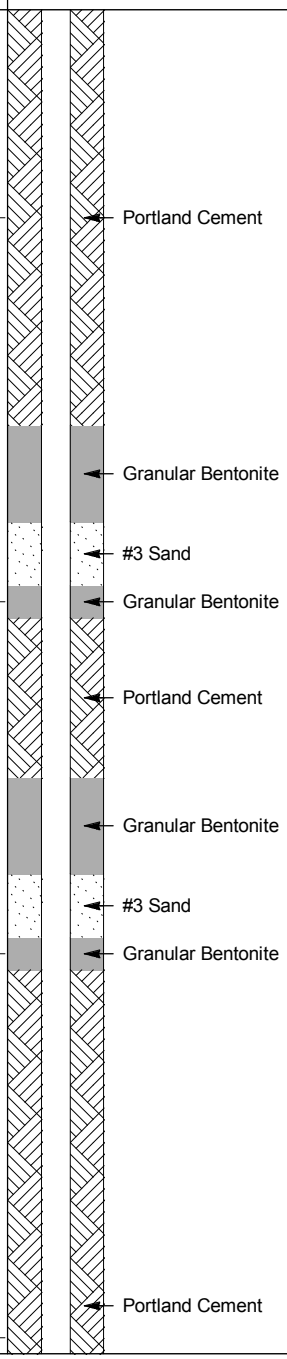
LOG OF MONITORING WELL: B2-8

Project Number: 0444932
Project Name: Infineon - Block 2
Location: El Segundo, CA
Contractor: Cascade Drilling
Drilling Method: HSA CME 85
Logged By: ML
Reviewed By: OR
Surface Elevation: feet MSL

Date Started: 3/27/2018
Date Completed: 3/27/2018
Total Depth: 81.5 feet
Borehole Diameter: 8" inches
Initial Water Level: feet bgs
Notes:

Depth (ft)	Sample Interval	Sample Number	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations
5		B2-8-5	1.2	SP		Dark yellowish brown (10YR 4/2), medium to coarse grained SAND, some silt, well sorted, damp
17		B2-8-17	1	SP		Dark yellowish orange (10YR 6/6), fine to medium grained SAND, well sorted, medium dense, dry
28		B2-8-28	0.8	SP		Moderate yellowish brown (10YR 5/6), fine to medium grained SAND, well sorted, medium dense, dry
40			1.1	SP		Grayish orange (10YR 7/4), fine to medium grained SAND, well sorted, medium dense, dry

WELL DIAGRAM



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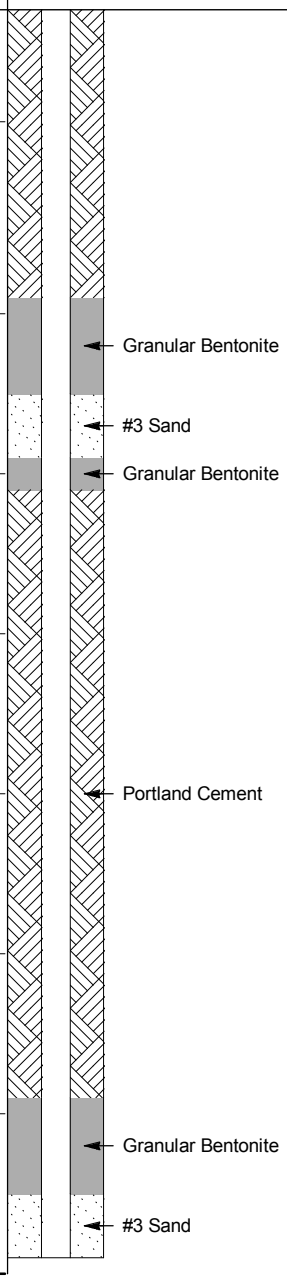
LOG OF MONITORING WELL: B2-8

Project Number: 0444932
Project Name: Infineon - Block 2
Location: El Segundo, CA
Contractor: Cascade Drilling
Drilling Method: HSA CME 85
Logged By: ML
Reviewed By: OR
Surface Elevation: feet MSL

Date Started: 3/27/2018
Date Completed: 3/27/2018
Total Depth: 81.5 feet
Borehole Diameter: 8" inches
Initial Water Level: feet bgs
Notes:

Depth (ft)	Sample Interval	Sample Number	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations
43						
44						
45	⧗		1.8	SM		Grayish orange (10YR 7/4), very fine to fine grained SAND, some silt, well sorted, medium dense, dry
46	⧗					
47						
48						
49						
50	⧗		1.1	SM		Moderate yellowish brown (10YR 5/4), very fine to fine grained SAND, some silt, well sorted, medium dense, dry
51	⧗					
52						
53						
54						
55	⧗		2.8	SM		Dark yellowish orange (10YR 6/6), very fine to fine grained SAND, little silt, well sorted, medium dense, damp
56	⧗	B2-8-55				
57						
58						
59						
60	⧗		3.4	SM		Moderate yellowish brown (10YR 5/4), very fine to fine grained SAND, some silt, well sorted, medium dense, damp, no odor
61	⧗					
62						
63						
64						
65	⧗		3.4	SP		Grayish orange (10YR 7/4), very fine to fine grained SAND, some silt, well sorted, medium dense, dry
66	⧗					
67						
68						
69						
70	⧗		3.4	SM		Moderate yellowish brown (10YR 5/4), very fine to fine grained SAND, silty sand, well sorted, medium dense, dry
71	⧗					
72						
73						
74						
75	⧗		4	SM		Dark yellowish orange (10YR 6/6), very fine grained SAND, some silt, well sorted, medium dense, dry
76	⧗					
77						
78						
79						
80	⧗		2.5	SM		Moderate yellowish brown (10YR 5/4), very fine grained SAND, little silt, well sorted, medium dense, damp
81	⧗	B2-8-80				
82						Total Depth - 81.5 feet bgs
83						

WELL DIAGRAM



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Mobile
Geochemistry Inc.

10 April 2018

Ms. Maggie Tymkow
ERM - Irvine
1920 Main Street, Suite 300
Irvine, CA 92614

H&P Project: ERM032718-L6A
Client Project: 0444392 / 233 Kansas Ave

Dear Ms. Maggie Tymkow:

Enclosed is the analytical report for the above referenced project. The data herein applies to samples as received by H&P Mobile Geochemistry, Inc. on 3/28/2018 -4/2/2018 which were analyzed in accordance with the attached Chain of Custody record(s).

The results for all sample analyses and required QA/QC analyses are presented in the following sections and summarized in the documents:

- Sample Summary
- Case Narrative (if applicable)
- Sample Results
- Quality Control Summary
- Notes and Definitions / Appendix
- Chain of Custody
- Sampling Logs (if applicable)

Unless otherwise noted, I certify that all analyses were performed and reviewed in compliance with our Quality Systems Manual and Standard Operating Procedures. This report shall not be reproduced, except in full, without the written approval of H&P Mobile Geochemistry, Inc.

We at H&P Mobile Geochemistry, Inc. sincerely appreciate the opportunity to provide analytical services to you on this project. If you have any questions or concerns regarding this analytical report, please contact me at your convenience at 760-804-9678.

Sincerely,

Janis La Roux
Laboratory Director

H&P Mobile Geochemistry, Inc. is certified under the California ELAP and the National Environmental Laboratory Accreditation Conference (NELAC). H&P is approved as an Environmental Testing Laboratory and Mobile Laboratory in accordance with the DoD-ELAP Program and ISO/IEC 17025:2005 programs, accreditation number 69070 for EPA Method TO-15, H&P Method TO-15, EPA Method 8260B and H&P 8260SV.

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SV-B2-7-80	E803092-07	Vapor	28-Mar-18	28-Mar-18
SV-B2-7-80 REP	E803092-08	Vapor	28-Mar-18	28-Mar-18
SV-B2-7-13	E803092-09	Vapor	28-Mar-18	28-Mar-18
SV-B2-6-55	E803092-10	Vapor	28-Mar-18	28-Mar-18
SV-B2-7-28	E803092-11	Vapor	28-Mar-18	28-Mar-18
SV-B2-6-28	E803092-12	Vapor	28-Mar-18	28-Mar-18
SV-B2-6-16	E803092-13	Vapor	28-Mar-18	28-Mar-18
SV-B2-3-63	E803092-14	Vapor	28-Mar-18	28-Mar-18
SV-B2-7-55	E803097-01	Vapor	29-Mar-18	29-Mar-18
SV-B2-6-80	E803097-02	Vapor	29-Mar-18	29-Mar-18
SV-B2-3-54	E803097-03	Vapor	29-Mar-18	29-Mar-18
SV-B2-3-29	E803097-04	Vapor	29-Mar-18	29-Mar-18
SV-B2-3-17	E803097-05	Vapor	29-Mar-18	29-Mar-18
SV-B2-5-80	E803097-06	Vapor	29-Mar-18	29-Mar-18
SV-B2-5-80 REP	E803097-07	Vapor	29-Mar-18	29-Mar-18
SV-B2-5-55	E803097-08	Vapor	29-Mar-18	29-Mar-18
SV-B2-5-39	E803097-09	Vapor	29-Mar-18	29-Mar-18
SV-B2-5-15	E803097-10	Vapor	29-Mar-18	29-Mar-18
SV-B2-2-65	E803097-11	Vapor	29-Mar-18	29-Mar-18
SV-B2-2-46	E803097-12	Vapor	29-Mar-18	29-Mar-18
SV-B2-2-80	E803097-13	Vapor	29-Mar-18	29-Mar-18
SV-B2-2-19	E803097-14	Vapor	29-Mar-18	29-Mar-18
SV-B2-8-80	E803110-01	Vapor	30-Mar-18	30-Mar-18
SV-B2-8-55	E803110-02	Vapor	30-Mar-18	30-Mar-18
SV-B2-8-55 REP	E803110-03	Vapor	30-Mar-18	30-Mar-18
SV-B2-8-28	E803110-04	Vapor	30-Mar-18	30-Mar-18
SV-B2-8-17	E803110-05	Vapor	30-Mar-18	30-Mar-18
SV-B2-4-75	E803110-06	Vapor	30-Mar-18	30-Mar-18

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ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SV-B2-4-55	E803110-07	Vapor	30-Mar-18	30-Mar-18
SV-B2-4-27	E803110-08	Vapor	30-Mar-18	30-Mar-18
SV-B2-4-12	E804001-01	Vapor	02-Apr-18	02-Apr-18
SV-B2-4-12 REP	E804001-02	Vapor	02-Apr-18	02-Apr-18
SV-B2-1-80	E804001-03	Vapor	02-Apr-18	02-Apr-18
SV-B2-1-52	E804001-04	Vapor	02-Apr-18	02-Apr-18
SV-B2-1-42	E804001-05	Vapor	02-Apr-18	02-Apr-18
SV-B2-1-18	E804001-06	Vapor	02-Apr-18	02-Apr-18

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DETECTIONS SUMMARY

Sample ID: **SV-B2-7-80** Laboratory ID: **E803092-07**

Analyte	Result	Reporting Limit	Units	Method	Notes
1,1-Dichloroethene	**1900**	500	ug/m3	H&P 8260SV	
1,1,2 Trichlorotrifluoroethane (F113)	**590**	500	ug/m3	H&P 8260SV	
Chloroform	**120**	100	ug/m3	H&P 8260SV	
Trichloroethene	**37000**	100	ug/m3	H&P 8260SV	
Tetrachloroethene	**62000**	100	ug/m3	H&P 8260SV	

Sample ID: **SV-B2-7-80 REP** Laboratory ID: **E803092-08**

Analyte	Result	Reporting Limit	Units	Method	Notes
1,1-Dichloroethene	**1900**	500	ug/m3	H&P 8260SV	
1,1,2 Trichlorotrifluoroethane (F113)	**580**	500	ug/m3	H&P 8260SV	
Chloroform	**130**	100	ug/m3	H&P 8260SV	
Trichloroethene	**39000**	100	ug/m3	H&P 8260SV	
Tetrachloroethene	**66000**	100	ug/m3	H&P 8260SV	

Sample ID: **SV-B2-7-13** Laboratory ID: **E803092-09**

Analyte	Result	Reporting Limit	Units	Method	Notes
1,1-Dichloroethene	**540**	500	ug/m3	H&P 8260SV	
Trichloroethene	**18000**	100	ug/m3	H&P 8260SV	
Tetrachloroethene	**38000**	100	ug/m3	H&P 8260SV	

Sample ID: **SV-B2-6-55** Laboratory ID: **E803092-10**

Analyte	Result	Reporting Limit	Units	Method	Notes
1,1-Dichloroethene	**2300**	500	ug/m3	H&P 8260SV	
Chloroform	**140**	100	ug/m3	H&P 8260SV	
Trichloroethene	**37000**	100	ug/m3	H&P 8260SV	
Tetrachloroethene	**68000**	100	ug/m3	H&P 8260SV	

Sample ID: **SV-B2-7-28** Laboratory ID: **E803092-11**

Analyte	Result	Reporting Limit	Units	Method	Notes
1,1-Dichloroethene	**1200**	500	ug/m3	H&P 8260SV	
Trichloroethene	**26000**	100	ug/m3	H&P 8260SV	
Tetrachloroethene	**46000**	100	ug/m3	H&P 8260SV	

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Sample ID: **SV-B2-6-28** Laboratory ID: **E803092-12**

Analyte	Result	Reporting Limit	Units	Method	Notes
1,1-Dichloroethene	**1700**	500	ug/m3	H&P 8260SV	
Chloroform	**100**	100	ug/m3	H&P 8260SV	
Trichloroethene	**28000**	100	ug/m3	H&P 8260SV	
Tetrachloroethene	**52000**	100	ug/m3	H&P 8260SV	

Sample ID: **SV-B2-6-16** Laboratory ID: **E803092-13**

Analyte	Result	Reporting Limit	Units	Method	Notes
1,1-Dichloroethene	**1000**	500	ug/m3	H&P 8260SV	
Trichloroethene	**19000**	100	ug/m3	H&P 8260SV	
Tetrachloroethene	**32000**	100	ug/m3	H&P 8260SV	

Sample ID: **SV-B2-3-63** Laboratory ID: **E803092-14**

Analyte	Result	Reporting Limit	Units	Method	Notes
Trichlorofluoromethane (F11)	**1100**	500	ug/m3	H&P 8260SV	
Chloroform	**150**	100	ug/m3	H&P 8260SV	
Trichloroethene	**7900**	100	ug/m3	H&P 8260SV	
Tetrachloroethene	**21000**	100	ug/m3	H&P 8260SV	

Sample ID: **SV-B2-7-55** Laboratory ID: **E803097-01**

Analyte	Result	Reporting Limit	Units	Method	Notes
1,1-Dichloroethene	**1600**	500	ug/m3	H&P 8260SV	
1,1,2 Trichlorotrifluoroethane (F113)	**520**	500	ug/m3	H&P 8260SV	
Chloroform	**120**	100	ug/m3	H&P 8260SV	
Trichloroethene	**30000**	100	ug/m3	H&P 8260SV	
Tetrachloroethene	**54000**	100	ug/m3	H&P 8260SV	

Sample ID: **SV-B2-6-80** Laboratory ID: **E803097-02**

Analyte	Result	Reporting Limit	Units	Method	Notes
1,1-Dichloroethene	**1900**	500	ug/m3	H&P 8260SV	
Chloroform	**130**	100	ug/m3	H&P 8260SV	
Trichloroethene	**30000**	100	ug/m3	H&P 8260SV	
Tetrachloroethene	**51000**	100	ug/m3	H&P 8260SV	

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Sample ID: **SV-B2-3-54** Laboratory ID: **E803097-03**

Analyte	Result	Reporting Limit	Units	Method	Notes
Trichlorofluoromethane (F11)	**1200**	500	ug/m3	H&P 8260SV	
Chloroform	**120**	100	ug/m3	H&P 8260SV	
Trichloroethene	**6400**	100	ug/m3	H&P 8260SV	
Tetrachloroethene	**17000**	100	ug/m3	H&P 8260SV	

Sample ID: **SV-B2-3-29** Laboratory ID: **E803097-04**

Analyte	Result	Reporting Limit	Units	Method	Notes
Acetone	**4600**	1000	ug/m3	H&P 8260SV	
Trichlorofluoromethane (F11)	**1600**	100	ug/m3	H&P 8260SV	
1,1-Dichloroethene	**310**	100	ug/m3	H&P 8260SV	
1,1,2 Trichlorotrifluoroethane (F113)	**270**	100	ug/m3	H&P 8260SV	
Chloroform	**80**	20	ug/m3	H&P 8260SV	
Trichloroethene	**4700**	20	ug/m3	H&P 8260SV	
Tetrachloroethene	**10000**	20	ug/m3	H&P 8260SV	

Sample ID: **SV-B2-3-17** Laboratory ID: **E803097-05**

Analyte	Result	Reporting Limit	Units	Method	Notes
Acetone	**3900**	1000	ug/m3	H&P 8260SV	
Trichlorofluoromethane (F11)	**2400**	100	ug/m3	H&P 8260SV	
1,1-Dichloroethene	**270**	100	ug/m3	H&P 8260SV	
1,1,2 Trichlorotrifluoroethane (F113)	**250**	100	ug/m3	H&P 8260SV	
Chloroform	**80**	20	ug/m3	H&P 8260SV	
Benzene	**20**	20	ug/m3	H&P 8260SV	
Trichloroethene	**4300**	20	ug/m3	H&P 8260SV	
Tetrachloroethene	**10000**	20	ug/m3	H&P 8260SV	

Sample ID: **SV-B2-5-80** Laboratory ID: **E803097-06**

Analyte	Result	Reporting Limit	Units	Method	Notes
1,1-Dichloroethene	**820**	500	ug/m3	H&P 8260SV	
Chloroform	**200**	100	ug/m3	H&P 8260SV	
Trichloroethene	**9300**	100	ug/m3	H&P 8260SV	
Tetrachloroethene	**28000**	100	ug/m3	H&P 8260SV	

Sample ID: **SV-B2-5-80 REP** Laboratory ID: **E803097-07**

Analyte	Result	Reporting Limit	Units	Method	Notes

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Sample ID: **SV-B2-5-80 REP** Laboratory ID: **E803097-07**

Analyte	Result	Reporting Limit	Units	Method	Notes
1,1-Dichloroethene	**780**	500	ug/m3	H&P 8260SV	
Chloroform	**210**	100	ug/m3	H&P 8260SV	
Trichloroethene	**9800**	100	ug/m3	H&P 8260SV	
Tetrachloroethene	**31000**	100	ug/m3	H&P 8260SV	

Sample ID: **SV-B2-5-55** Laboratory ID: **E803097-08**

Analyte	Result	Reporting Limit	Units	Method	Notes
1,1-Dichloroethene	**650**	500	ug/m3	H&P 8260SV	
Chloroform	**140**	100	ug/m3	H&P 8260SV	
Trichloroethene	**6700**	100	ug/m3	H&P 8260SV	
Tetrachloroethene	**18000**	100	ug/m3	H&P 8260SV	

Sample ID: **SV-B2-5-39** Laboratory ID: **E803097-09**

Analyte	Result	Reporting Limit	Units	Method	Notes
Acetone	**4300**	1000	ug/m3	H&P 8260SV	
Trichlorofluoromethane (F11)	**180**	100	ug/m3	H&P 8260SV	
1,1-Dichloroethene	**530**	100	ug/m3	H&P 8260SV	
1,1,2 Trichlorotrifluoroethane (F113)	**110**	100	ug/m3	H&P 8260SV	
Chloroform	**120**	20	ug/m3	H&P 8260SV	
Trichloroethene	**4900**	20	ug/m3	H&P 8260SV	
Tetrachloroethene	**12000**	20	ug/m3	H&P 8260SV	

Sample ID: **SV-B2-5-15** Laboratory ID: **E803097-10**

Analyte	Result	Reporting Limit	Units	Method	Notes
Acetone	**2800**	1000	ug/m3	H&P 8260SV	
Trichlorofluoromethane (F11)	**130**	100	ug/m3	H&P 8260SV	
1,1-Dichloroethene	**290**	100	ug/m3	H&P 8260SV	
Chloroform	**60**	20	ug/m3	H&P 8260SV	
Trichloroethene	**2700**	20	ug/m3	H&P 8260SV	
Tetrachloroethene	**8100**	20	ug/m3	H&P 8260SV	

Sample ID: **SV-B2-2-65** Laboratory ID: **E803097-11**

Analyte	Result	Reporting Limit	Units	Method	Notes
1,1-Dichloroethene	**1600**	500	ug/m3	H&P 8260SV	
1,1,2 Trichlorotrifluoroethane (F113)	**770**	500	ug/m3	H&P 8260SV	

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Sample ID: **SV-B2-2-65** Laboratory ID: **E803097-11**

Analyte	Result	Reporting Limit	Units	Method	Notes
Chloroform	**120**	100	ug/m3	H&P 8260SV	
Trichloroethene	**38000**	100	ug/m3	H&P 8260SV	
Tetrachloroethene	**66000**	100	ug/m3	H&P 8260SV	

Sample ID: **SV-B2-2-46** Laboratory ID: **E803097-12**

Analyte	Result	Reporting Limit	Units	Method	Notes
1,1-Dichloroethene	**1400**	500	ug/m3	H&P 8260SV	
1,1,2 Trichlorotrifluoroethane (F113)	**710**	500	ug/m3	H&P 8260SV	
Chloroform	**110**	100	ug/m3	H&P 8260SV	
Trichloroethene	**37000**	100	ug/m3	H&P 8260SV	
Tetrachloroethene	**66000**	100	ug/m3	H&P 8260SV	

Sample ID: **SV-B2-2-80** Laboratory ID: **E803097-13**

Analyte	Result	Reporting Limit	Units	Method	Notes
1,1-Dichloroethene	**1500**	500	ug/m3	H&P 8260SV	
1,1,2 Trichlorotrifluoroethane (F113)	**790**	500	ug/m3	H&P 8260SV	
Trichloroethene	**31000**	100	ug/m3	H&P 8260SV	
Tetrachloroethene	**57000**	100	ug/m3	H&P 8260SV	

Sample ID: **SV-B2-2-19** Laboratory ID: **E803097-14**

Analyte	Result	Reporting Limit	Units	Method	Notes
Acetone	**9800**	1000	ug/m3	H&P 8260SV	
1,1-Dichloroethene	**510**	100	ug/m3	H&P 8260SV	
1,1,2 Trichlorotrifluoroethane (F113)	**330**	100	ug/m3	H&P 8260SV	
Chloroform	**50**	20	ug/m3	H&P 8260SV	
Benzene	**40**	20	ug/m3	H&P 8260SV	
Trichloroethene	**7900**	20	ug/m3	H&P 8260SV	
Tetrachloroethene	**9200**	20	ug/m3	H&P 8260SV	

Sample ID: **SV-B2-8-80** Laboratory ID: **E803110-01**

Analyte	Result	Reporting Limit	Units	Method	Notes
1,1-Dichloroethene	**3600**	500	ug/m3	H&P 8260SV	
1,1,2 Trichlorotrifluoroethane (F113)	**620**	500	ug/m3	H&P 8260SV	
cis-1,2-Dichloroethene	**550**	500	ug/m3	H&P 8260SV	
Chloroform	**140**	100	ug/m3	H&P 8260SV	

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Sample ID: **SV-B2-8-80** Laboratory ID: **E803110-01**

Analyte	Result	Reporting Limit	Units	Method	Notes
Trichloroethene	**48000**	100	ug/m3	H&P 8260SV	
Tetrachloroethene	**57000**	100	ug/m3	H&P 8260SV	

Sample ID: **SV-B2-8-55** Laboratory ID: **E803110-02**

Analyte	Result	Reporting Limit	Units	Method	Notes
1,1-Dichloroethene	**3300**	500	ug/m3	H&P 8260SV	
1,1,2 Trichlorotrifluoroethane (F113)	**520**	500	ug/m3	H&P 8260SV	
cis-1,2-Dichloroethene	**580**	500	ug/m3	H&P 8260SV	
Chloroform	**140**	100	ug/m3	H&P 8260SV	
Trichloroethene	**52000**	100	ug/m3	H&P 8260SV	
Tetrachloroethene	**73000**	100	ug/m3	H&P 8260SV	

Sample ID: **SV-B2-8-55 REP** Laboratory ID: **E803110-03**

Analyte	Result	Reporting Limit	Units	Method	Notes
1,1-Dichloroethene	**3400**	500	ug/m3	H&P 8260SV	
1,1,2 Trichlorotrifluoroethane (F113)	**560**	500	ug/m3	H&P 8260SV	
cis-1,2-Dichloroethene	**600**	500	ug/m3	H&P 8260SV	
Chloroform	**170**	100	ug/m3	H&P 8260SV	
Trichloroethene	**51000**	100	ug/m3	H&P 8260SV	
Tetrachloroethene	**68000**	100	ug/m3	H&P 8260SV	

Sample ID: **SV-B2-8-28** Laboratory ID: **E803110-04**

Analyte	Result	Reporting Limit	Units	Method	Notes
Acetone	**8800**	1000	ug/m3	H&P 8260SV	
1,1-Dichloroethene	**2200**	100	ug/m3	H&P 8260SV	
1,1,2 Trichlorotrifluoroethane (F113)	**380**	100	ug/m3	H&P 8260SV	
cis-1,2-Dichloroethene	**410**	100	ug/m3	H&P 8260SV	
Chloroform	**130**	20	ug/m3	H&P 8260SV	
1,1,1-Trichloroethane	**180**	100	ug/m3	H&P 8260SV	
Benzene	**20**	20	ug/m3	H&P 8260SV	
Trichloroethene	**45000**	100	ug/m3	H&P 8260SV	
Tetrachloroethene	**59000**	100	ug/m3	H&P 8260SV	

Sample ID: **SV-B2-8-17** Laboratory ID: **E803110-05**

Analyte	Result	Reporting Limit	Units	Method	Notes

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Sample ID: **SV-B2-8-17** Laboratory ID: **E803110-05**

Analyte	Result	Reporting Limit	Units	Method	Notes
1,1-Dichloroethene	**1300**	500	ug/m3	H&P 8260SV	
Trichloroethene	**20000**	100	ug/m3	H&P 8260SV	
Tetrachloroethene	**28000**	100	ug/m3	H&P 8260SV	

Sample ID: **SV-B2-4-75** Laboratory ID: **E803110-06**

Analyte	Result	Reporting Limit	Units	Method	Notes
1,1-Dichloroethene	**1600**	500	ug/m3	H&P 8260SV	
Chloroform	**120**	100	ug/m3	H&P 8260SV	
Trichloroethene	**17000**	100	ug/m3	H&P 8260SV	
Tetrachloroethene	**34000**	100	ug/m3	H&P 8260SV	

Sample ID: **SV-B2-4-55** Laboratory ID: **E803110-07**

Analyte	Result	Reporting Limit	Units	Method	Notes
1,1-Dichloroethene	**1800**	500	ug/m3	H&P 8260SV	
Chloroform	**110**	100	ug/m3	H&P 8260SV	
Trichloroethene	**17000**	100	ug/m3	H&P 8260SV	
Tetrachloroethene	**34000**	100	ug/m3	H&P 8260SV	

Sample ID: **SV-B2-4-27** Laboratory ID: **E803110-08**

Analyte	Result	Reporting Limit	Units	Method	Notes
Acetone	**8000**	2000	ug/m3	H&P 8260SV	
1,1-Dichloroethene	**1400**	200	ug/m3	H&P 8260SV	
Chloroform	**100**	40	ug/m3	H&P 8260SV	
Trichloroethene	**15000**	40	ug/m3	H&P 8260SV	
Tetrachloroethene	**33000**	40	ug/m3	H&P 8260SV	

Sample ID: **SV-B2-4-12** Laboratory ID: **E804001-01**

Analyte	Result	Reporting Limit	Units	Method	Notes
1,1-Dichloroethene	**790**	200	ug/m3	H&P 8260SV	
Chloroform	**40**	40	ug/m3	H&P 8260SV	
Trichloroethene	**5800**	40	ug/m3	H&P 8260SV	
Tetrachloroethene	**24000**	40	ug/m3	H&P 8260SV	

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Sample ID: **SV-B2-4-12 REP** Laboratory ID: **E804001-02**

Analyte	Result	Reporting Limit	Units	Method	Notes
1,1-Dichloroethene	**560**	200	ug/m3	H&P 8260SV	
Trichloroethene	**4000**	40	ug/m3	H&P 8260SV	
Tetrachloroethene	**16000**	40	ug/m3	H&P 8260SV	

Sample ID: **SV-B2-1-80** Laboratory ID: **E804001-03**

Analyte	Result	Reporting Limit	Units	Method	Notes
1,1-Dichloroethene	**550**	500	ug/m3	H&P 8260SV	
1,1,2 Trichlorotrifluoroethane (F113)	**1800**	500	ug/m3	H&P 8260SV	
cis-1,2-Dichloroethene	**680**	500	ug/m3	H&P 8260SV	
Trichloroethene	**21000**	100	ug/m3	H&P 8260SV	
Tetrachloroethene	**36000**	100	ug/m3	H&P 8260SV	

Sample ID: **SV-B2-1-52** Laboratory ID: **E804001-04**

Analyte	Result	Reporting Limit	Units	Method	Notes
1,1,2 Trichlorotrifluoroethane (F113)	**1500**	500	ug/m3	H&P 8260SV	
Trichloroethene	**17000**	100	ug/m3	H&P 8260SV	
Tetrachloroethene	**31000**	100	ug/m3	H&P 8260SV	

Sample ID: **SV-B2-1-42** Laboratory ID: **E804001-05**

Analyte	Result	Reporting Limit	Units	Method	Notes
Acetone	**2600**	2000	ug/m3	H&P 8260SV	
1,1-Dichloroethene	**320**	200	ug/m3	H&P 8260SV	
1,1,2 Trichlorotrifluoroethane (F113)	**990**	200	ug/m3	H&P 8260SV	
cis-1,2-Dichloroethene	**330**	200	ug/m3	H&P 8260SV	
Chloroform	**50**	40	ug/m3	H&P 8260SV	
Trichloroethene	**12000**	40	ug/m3	H&P 8260SV	
Tetrachloroethene	**21000**	40	ug/m3	H&P 8260SV	

Sample ID: **SV-B2-1-18** Laboratory ID: **E804001-06**

Analyte	Result	Reporting Limit	Units	Method	Notes
Acetone	**3700**	1000	ug/m3	H&P 8260SV	
1,1-Dichloroethene	**220**	100	ug/m3	H&P 8260SV	
1,1,2 Trichlorotrifluoroethane (F113)	**950**	100	ug/m3	H&P 8260SV	
Chloroform	**30**	20	ug/m3	H&P 8260SV	
Trichloroethene	**5900**	20	ug/m3	H&P 8260SV	

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Sample ID: **SV-B2-1-18** Laboratory ID: **E804001-06**

Analyte	Result	Reporting Limit	Units	Method	Notes
Tetrachloroethene	**11000**	20	ug/m3	H&P 8260SV	

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1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

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Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-7-80 (E803092-07) Vapor Sampled: 28-Mar-18 Received: 28-Mar-18									
1,1-Difluoroethane (LCC)	ND	500	ug/m3	0.05	EC82807	28-Mar-18	28-Mar-18	H&P 8260SV	
Acetone	ND	5000	"	"	"	"	"	"	
Dichlorodifluoromethane (F12)	ND	500	"	"	"	"	"	"	
Chloromethane	ND	500	"	"	"	"	"	"	
Vinyl chloride	ND	50	"	"	"	"	"	"	
Bromomethane	ND	500	"	"	"	"	"	"	
Chloroethane	ND	500	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	500	"	"	"	"	"	"	
1,1-Dichloroethene	**1900**	500	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	**590**	500	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	500	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	500	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	500	"	"	"	"	"	"	
1,1-Dichloroethane	ND	500	"	"	"	"	"	"	
2,2-Dichloropropane	ND	500	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	500	"	"	"	"	"	"	
Chloroform	**120**	100	"	"	"	"	"	"	
Bromochloromethane	ND	500	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	500	"	"	"	"	"	"	
1,1-Dichloropropene	ND	500	"	"	"	"	"	"	
Carbon tetrachloride	ND	100	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	100	"	"	"	"	"	"	
Benzene	ND	100	"	"	"	"	"	"	
Trichloroethene	**37000**	100	"	"	"	"	"	"	
1,2-Dichloropropane	ND	500	"	"	"	"	"	"	
Bromodichloromethane	ND	500	"	"	"	"	"	"	
Dibromomethane	ND	500	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	500	"	"	"	"	"	"	
Toluene	ND	1000	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	500	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	500	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	500	"	"	"	"	"	"	
1,3-Dichloropropane	ND	500	"	"	"	"	"	"	
Tetrachloroethene	**62000**	100	"	"	"	"	"	"	
Dibromochloromethane	ND	500	"	"	"	"	"	"	
Chlorobenzene	ND	100	"	"	"	"	"	"	
Ethylbenzene	ND	500	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	500	"	"	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-7-80 (E803092-07) Vapor Sampled: 28-Mar-18 Received: 28-Mar-18									
m,p-Xylene	ND	500	ug/m3	0.05	EC82807	28-Mar-18	28-Mar-18	H&P 8260SV	
o-Xylene	ND	500	"	"	"	"	"	"	
Styrene	ND	500	"	"	"	"	"	"	
Bromoform	ND	500	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	500	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	500	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	500	"	"	"	"	"	"	
n-Propylbenzene	ND	500	"	"	"	"	"	"	
Bromobenzene	ND	500	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	500	"	"	"	"	"	"	
2-Chlorotoluene	ND	500	"	"	"	"	"	"	
4-Chlorotoluene	ND	500	"	"	"	"	"	"	
tert-Butylbenzene	ND	500	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	500	"	"	"	"	"	"	
sec-Butylbenzene	ND	500	"	"	"	"	"	"	
p-Isopropyltoluene	ND	500	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	500	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	500	"	"	"	"	"	"	
n-Butylbenzene	ND	500	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	500	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	5000	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	500	"	"	"	"	"	"	
Hexachlorobutadiene	ND	500	"	"	"	"	"	"	
Naphthalene	ND	100	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	500	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*101 %*		*75-125*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*89.6 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*104 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*93.8 %*		*75-125*	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-7-80 REP (E803092-08) Vapor	**Sampled: 28-Mar-18**	**Received: 28-Mar-18**							
1,1-Difluoroethane (LCC)	ND	500	ug/m3	0.05	EC82807	28-Mar-18	28-Mar-18	H&P 8260SV	
Acetone	ND	5000	"	"	"	"	"	"	
Dichlorodifluoromethane (F12)	ND	500	"	"	"	"	"	"	
Chloromethane	ND	500	"	"	"	"	"	"	
Vinyl chloride	ND	50	"	"	"	"	"	"	
Bromomethane	ND	500	"	"	"	"	"	"	
Chloroethane	ND	500	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	500	"	"	"	"	"	"	
1,1-Dichloroethene	**1900**	500	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	**580**	500	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	500	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	500	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	500	"	"	"	"	"	"	
1,1-Dichloroethane	ND	500	"	"	"	"	"	"	
2,2-Dichloropropane	ND	500	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	500	"	"	"	"	"	"	
Chloroform	**130**	100	"	"	"	"	"	"	
Bromochloromethane	ND	500	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	500	"	"	"	"	"	"	
1,1-Dichloropropene	ND	500	"	"	"	"	"	"	
Carbon tetrachloride	ND	100	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	100	"	"	"	"	"	"	
Benzene	ND	100	"	"	"	"	"	"	
Trichloroethene	**39000**	100	"	"	"	"	"	"	
1,2-Dichloropropane	ND	500	"	"	"	"	"	"	
Bromodichloromethane	ND	500	"	"	"	"	"	"	
Dibromomethane	ND	500	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	500	"	"	"	"	"	"	
Toluene	ND	1000	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	500	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	500	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	500	"	"	"	"	"	"	
1,3-Dichloropropane	ND	500	"	"	"	"	"	"	
Tetrachloroethene	**66000**	100	"	"	"	"	"	"	
Dibromochloromethane	ND	500	"	"	"	"	"	"	
Chlorobenzene	ND	100	"	"	"	"	"	"	
Ethylbenzene	ND	500	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	500	"	"	"	"	"	"	

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1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-7-80 REP (E803092-08) Vapor Sampled: 28-Mar-18 Received: 28-Mar-18									
m,p-Xylene	ND	500	ug/m3	0.05	EC82807	28-Mar-18	28-Mar-18	H&P 8260SV	
o-Xylene	ND	500	"	"	"	"	"	"	
Styrene	ND	500	"	"	"	"	"	"	
Bromoform	ND	500	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	500	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	500	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	500	"	"	"	"	"	"	
n-Propylbenzene	ND	500	"	"	"	"	"	"	
Bromobenzene	ND	500	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	500	"	"	"	"	"	"	
2-Chlorotoluene	ND	500	"	"	"	"	"	"	
4-Chlorotoluene	ND	500	"	"	"	"	"	"	
tert-Butylbenzene	ND	500	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	500	"	"	"	"	"	"	
sec-Butylbenzene	ND	500	"	"	"	"	"	"	
p-Isopropyltoluene	ND	500	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	500	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	500	"	"	"	"	"	"	
n-Butylbenzene	ND	500	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	500	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	5000	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	500	"	"	"	"	"	"	
Hexachlorobutadiene	ND	500	"	"	"	"	"	"	
Naphthalene	ND	100	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	500	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*103 %*		*75-125*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*92.2 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*103 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*90.8 %*		*75-125*	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-7-13 (E803092-09) Vapor Sampled: 28-Mar-18 Received: 28-Mar-18									
1,1-Difluoroethane (LCC)	ND	500	ug/m3	0.05	EC82807	28-Mar-18	28-Mar-18	H&P 8260SV	
Acetone	ND	5000	"	"	"	"	"	"	
Dichlorodifluoromethane (F12)	ND	500	"	"	"	"	"	"	
Chloromethane	ND	500	"	"	"	"	"	"	
Vinyl chloride	ND	50	"	"	"	"	"	"	
Bromomethane	ND	500	"	"	"	"	"	"	
Chloroethane	ND	500	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	500	"	"	"	"	"	"	
1,1-Dichloroethene	**540**	500	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	ND	500	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	500	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	500	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	500	"	"	"	"	"	"	
1,1-Dichloroethane	ND	500	"	"	"	"	"	"	
2,2-Dichloropropane	ND	500	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	500	"	"	"	"	"	"	
Chloroform	ND	100	"	"	"	"	"	"	
Bromochloromethane	ND	500	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	500	"	"	"	"	"	"	
1,1-Dichloropropene	ND	500	"	"	"	"	"	"	
Carbon tetrachloride	ND	100	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	100	"	"	"	"	"	"	
Benzene	ND	100	"	"	"	"	"	"	
Trichloroethene	**18000**	100	"	"	"	"	"	"	
1,2-Dichloropropane	ND	500	"	"	"	"	"	"	
Bromodichloromethane	ND	500	"	"	"	"	"	"	
Dibromomethane	ND	500	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	500	"	"	"	"	"	"	
Toluene	ND	1000	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	500	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	500	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	500	"	"	"	"	"	"	
1,3-Dichloropropane	ND	500	"	"	"	"	"	"	
Tetrachloroethene	**38000**	100	"	"	"	"	"	"	
Dibromochloromethane	ND	500	"	"	"	"	"	"	
Chlorobenzene	ND	100	"	"	"	"	"	"	
Ethylbenzene	ND	500	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	500	"	"	"	"	"	"	

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1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-7-13 (E803092-09) Vapor Sampled: 28-Mar-18 Received: 28-Mar-18									
m,p-Xylene	ND	500	ug/m3	0.05	EC82807	28-Mar-18	28-Mar-18	H&P 8260SV	
o-Xylene	ND	500	"	"	"	"	"	"	
Styrene	ND	500	"	"	"	"	"	"	
Bromoform	ND	500	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	500	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	500	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	500	"	"	"	"	"	"	
n-Propylbenzene	ND	500	"	"	"	"	"	"	
Bromobenzene	ND	500	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	500	"	"	"	"	"	"	
2-Chlorotoluene	ND	500	"	"	"	"	"	"	
4-Chlorotoluene	ND	500	"	"	"	"	"	"	
tert-Butylbenzene	ND	500	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	500	"	"	"	"	"	"	
sec-Butylbenzene	ND	500	"	"	"	"	"	"	
p-Isopropyltoluene	ND	500	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	500	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	500	"	"	"	"	"	"	
n-Butylbenzene	ND	500	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	500	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	5000	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	500	"	"	"	"	"	"	
Hexachlorobutadiene	ND	500	"	"	"	"	"	"	
Naphthalene	ND	100	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	500	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*102 %*		*75-125*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*87.1 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*104 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*90.4 %*		*75-125*	"	"	"	"	

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1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-6-55 (E803092-10) Vapor Sampled: 28-Mar-18 Received: 28-Mar-18									
1,1-Difluoroethane (LCC)	ND	500	ug/m3	0.05	EC82807	28-Mar-18	28-Mar-18	H&P 8260SV	
Acetone	ND	5000	"	"	"	"	"	"	
Dichlorodifluoromethane (F12)	ND	500	"	"	"	"	"	"	
Chloromethane	ND	500	"	"	"	"	"	"	
Vinyl chloride	ND	50	"	"	"	"	"	"	
Bromomethane	ND	500	"	"	"	"	"	"	
Chloroethane	ND	500	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	500	"	"	"	"	"	"	
1,1-Dichloroethene	**2300**	500	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	ND	500	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	500	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	500	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	500	"	"	"	"	"	"	
1,1-Dichloroethane	ND	500	"	"	"	"	"	"	
2,2-Dichloropropane	ND	500	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	500	"	"	"	"	"	"	
Chloroform	**140**	100	"	"	"	"	"	"	
Bromochloromethane	ND	500	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	500	"	"	"	"	"	"	
1,1-Dichloropropene	ND	500	"	"	"	"	"	"	
Carbon tetrachloride	ND	100	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	100	"	"	"	"	"	"	
Benzene	ND	100	"	"	"	"	"	"	
Trichloroethene	**37000**	100	"	"	"	"	"	"	
1,2-Dichloropropane	ND	500	"	"	"	"	"	"	
Bromodichloromethane	ND	500	"	"	"	"	"	"	
Dibromomethane	ND	500	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	500	"	"	"	"	"	"	
Toluene	ND	1000	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	500	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	500	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	500	"	"	"	"	"	"	
1,3-Dichloropropane	ND	500	"	"	"	"	"	"	
Tetrachloroethene	**68000**	100	"	"	"	"	"	"	
Dibromochloromethane	ND	500	"	"	"	"	"	"	
Chlorobenzene	ND	100	"	"	"	"	"	"	
Ethylbenzene	ND	500	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	500	"	"	"	"	"	"	

H&P Mobile
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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-6-55 (E803092-10) Vapor Sampled: 28-Mar-18 Received: 28-Mar-18									
m,p-Xylene	ND	500	ug/m3	0.05	EC82807	28-Mar-18	28-Mar-18	H&P 8260SV	
o-Xylene	ND	500	"	"	"	"	"	"	
Styrene	ND	500	"	"	"	"	"	"	
Bromoform	ND	500	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	500	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	500	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	500	"	"	"	"	"	"	
n-Propylbenzene	ND	500	"	"	"	"	"	"	
Bromobenzene	ND	500	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	500	"	"	"	"	"	"	
2-Chlorotoluene	ND	500	"	"	"	"	"	"	
4-Chlorotoluene	ND	500	"	"	"	"	"	"	
tert-Butylbenzene	ND	500	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	500	"	"	"	"	"	"	
sec-Butylbenzene	ND	500	"	"	"	"	"	"	
p-Isopropyltoluene	ND	500	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	500	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	500	"	"	"	"	"	"	
n-Butylbenzene	ND	500	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	500	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	5000	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	500	"	"	"	"	"	"	
Hexachlorobutadiene	ND	500	"	"	"	"	"	"	
Naphthalene	ND	100	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	500	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*102 %*		*75-125*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*88.4 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*101 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*89.2 %*		*75-125*	"	"	"	"	

H&P Mobile
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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-7-28 (E803092-11) Vapor Sampled: 28-Mar-18 Received: 28-Mar-18									
1,1-Difluoroethane (LCC)	ND	500	ug/m3	0.05	EC82807	28-Mar-18	28-Mar-18	H&P 8260SV	
Acetone	ND	5000	"	"	"	"	"	"	
Dichlorodifluoromethane (F12)	ND	500	"	"	"	"	"	"	
Chloromethane	ND	500	"	"	"	"	"	"	
Vinyl chloride	ND	50	"	"	"	"	"	"	
Bromomethane	ND	500	"	"	"	"	"	"	
Chloroethane	ND	500	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	500	"	"	"	"	"	"	
1,1-Dichloroethene	**1200**	500	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	ND	500	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	500	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	500	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	500	"	"	"	"	"	"	
1,1-Dichloroethane	ND	500	"	"	"	"	"	"	
2,2-Dichloropropane	ND	500	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	500	"	"	"	"	"	"	
Chloroform	ND	100	"	"	"	"	"	"	
Bromochloromethane	ND	500	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	500	"	"	"	"	"	"	
1,1-Dichloropropene	ND	500	"	"	"	"	"	"	
Carbon tetrachloride	ND	100	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	100	"	"	"	"	"	"	
Benzene	ND	100	"	"	"	"	"	"	
Trichloroethene	**26000**	100	"	"	"	"	"	"	
1,2-Dichloropropane	ND	500	"	"	"	"	"	"	
Bromodichloromethane	ND	500	"	"	"	"	"	"	
Dibromomethane	ND	500	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	500	"	"	"	"	"	"	
Toluene	ND	1000	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	500	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	500	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	500	"	"	"	"	"	"	
1,3-Dichloropropane	ND	500	"	"	"	"	"	"	
Tetrachloroethene	**46000**	100	"	"	"	"	"	"	
Dibromochloromethane	ND	500	"	"	"	"	"	"	
Chlorobenzene	ND	100	"	"	"	"	"	"	
Ethylbenzene	ND	500	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	500	"	"	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-7-28 (E803092-11) Vapor Sampled: 28-Mar-18 Received: 28-Mar-18									
m,p-Xylene	ND	500	ug/m3	0.05	EC82807	28-Mar-18	28-Mar-18	H&P 8260SV	
o-Xylene	ND	500	"	"	"	"	"	"	
Styrene	ND	500	"	"	"	"	"	"	
Bromoform	ND	500	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	500	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	500	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	500	"	"	"	"	"	"	
n-Propylbenzene	ND	500	"	"	"	"	"	"	
Bromobenzene	ND	500	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	500	"	"	"	"	"	"	
2-Chlorotoluene	ND	500	"	"	"	"	"	"	
4-Chlorotoluene	ND	500	"	"	"	"	"	"	
tert-Butylbenzene	ND	500	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	500	"	"	"	"	"	"	
sec-Butylbenzene	ND	500	"	"	"	"	"	"	
p-Isopropyltoluene	ND	500	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	500	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	500	"	"	"	"	"	"	
n-Butylbenzene	ND	500	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	500	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	5000	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	500	"	"	"	"	"	"	
Hexachlorobutadiene	ND	500	"	"	"	"	"	"	
Naphthalene	ND	100	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	500	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*104 %*		*75-125*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*87.9 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*100 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*91.7 %*		*75-125*	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-6-28 (E803092-12) Vapor Sampled: 28-Mar-18 Received: 28-Mar-18									
1,1-Difluoroethane (LCC)	ND	500	ug/m3	0.05	EC82807	28-Mar-18	28-Mar-18	H&P 8260SV	
Acetone	ND	5000	"	"	"	"	"	"	
Dichlorodifluoromethane (F12)	ND	500	"	"	"	"	"	"	
Chloromethane	ND	500	"	"	"	"	"	"	
Vinyl chloride	ND	50	"	"	"	"	"	"	
Bromomethane	ND	500	"	"	"	"	"	"	
Chloroethane	ND	500	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	500	"	"	"	"	"	"	
1,1-Dichloroethene	**1700**	500	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	ND	500	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	500	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	500	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	500	"	"	"	"	"	"	
1,1-Dichloroethane	ND	500	"	"	"	"	"	"	
2,2-Dichloropropane	ND	500	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	500	"	"	"	"	"	"	
Chloroform	**100**	100	"	"	"	"	"	"	
Bromochloromethane	ND	500	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	500	"	"	"	"	"	"	
1,1-Dichloropropene	ND	500	"	"	"	"	"	"	
Carbon tetrachloride	ND	100	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	100	"	"	"	"	"	"	
Benzene	ND	100	"	"	"	"	"	"	
Trichloroethene	**28000**	100	"	"	"	"	"	"	
1,2-Dichloropropane	ND	500	"	"	"	"	"	"	
Bromodichloromethane	ND	500	"	"	"	"	"	"	
Dibromomethane	ND	500	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	500	"	"	"	"	"	"	
Toluene	ND	1000	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	500	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	500	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	500	"	"	"	"	"	"	
1,3-Dichloropropane	ND	500	"	"	"	"	"	"	
Tetrachloroethene	**52000**	100	"	"	"	"	"	"	
Dibromochloromethane	ND	500	"	"	"	"	"	"	
Chlorobenzene	ND	100	"	"	"	"	"	"	
Ethylbenzene	ND	500	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	500	"	"	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-6-28 (E803092-12) Vapor Sampled: 28-Mar-18 Received: 28-Mar-18									
m,p-Xylene	ND	500	ug/m3	0.05	EC82807	28-Mar-18	28-Mar-18	H&P 8260SV	
o-Xylene	ND	500	"	"	"	"	"	"	
Styrene	ND	500	"	"	"	"	"	"	
Bromoform	ND	500	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	500	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	500	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	500	"	"	"	"	"	"	
n-Propylbenzene	ND	500	"	"	"	"	"	"	
Bromobenzene	ND	500	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	500	"	"	"	"	"	"	
2-Chlorotoluene	ND	500	"	"	"	"	"	"	
4-Chlorotoluene	ND	500	"	"	"	"	"	"	
tert-Butylbenzene	ND	500	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	500	"	"	"	"	"	"	
sec-Butylbenzene	ND	500	"	"	"	"	"	"	
p-Isopropyltoluene	ND	500	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	500	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	500	"	"	"	"	"	"	
n-Butylbenzene	ND	500	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	500	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	5000	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	500	"	"	"	"	"	"	
Hexachlorobutadiene	ND	500	"	"	"	"	"	"	
Naphthalene	ND	100	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	500	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*101 %*		*75-125*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*92.5 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*103 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*91.8 %*		*75-125*	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-6-16 (E803092-13) Vapor Sampled: 28-Mar-18 Received: 28-Mar-18									
1,1-Difluoroethane (LCC)	ND	500	ug/m3	0.05	EC82807	28-Mar-18	28-Mar-18	H&P 8260SV	
Acetone	ND	5000	"	"	"	"	"	"	
Dichlorodifluoromethane (F12)	ND	500	"	"	"	"	"	"	
Chloromethane	ND	500	"	"	"	"	"	"	
Vinyl chloride	ND	50	"	"	"	"	"	"	
Bromomethane	ND	500	"	"	"	"	"	"	
Chloroethane	ND	500	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	500	"	"	"	"	"	"	
1,1-Dichloroethene	**1000**	500	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	ND	500	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	500	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	500	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	500	"	"	"	"	"	"	
1,1-Dichloroethane	ND	500	"	"	"	"	"	"	
2,2-Dichloropropane	ND	500	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	500	"	"	"	"	"	"	
Chloroform	ND	100	"	"	"	"	"	"	
Bromochloromethane	ND	500	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	500	"	"	"	"	"	"	
1,1-Dichloropropene	ND	500	"	"	"	"	"	"	
Carbon tetrachloride	ND	100	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	100	"	"	"	"	"	"	
Benzene	ND	100	"	"	"	"	"	"	
Trichloroethene	**19000**	100	"	"	"	"	"	"	
1,2-Dichloropropane	ND	500	"	"	"	"	"	"	
Bromodichloromethane	ND	500	"	"	"	"	"	"	
Dibromomethane	ND	500	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	500	"	"	"	"	"	"	
Toluene	ND	1000	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	500	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	500	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	500	"	"	"	"	"	"	
1,3-Dichloropropane	ND	500	"	"	"	"	"	"	
Tetrachloroethene	**32000**	100	"	"	"	"	"	"	
Dibromochloromethane	ND	500	"	"	"	"	"	"	
Chlorobenzene	ND	100	"	"	"	"	"	"	
Ethylbenzene	ND	500	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	500	"	"	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-6-16 (E803092-13) Vapor Sampled: 28-Mar-18 Received: 28-Mar-18									
m,p-Xylene	ND	500	ug/m3	0.05	EC82807	28-Mar-18	28-Mar-18	H&P 8260SV	
o-Xylene	ND	500	"	"	"	"	"	"	
Styrene	ND	500	"	"	"	"	"	"	
Bromoform	ND	500	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	500	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	500	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	500	"	"	"	"	"	"	
n-Propylbenzene	ND	500	"	"	"	"	"	"	
Bromobenzene	ND	500	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	500	"	"	"	"	"	"	
2-Chlorotoluene	ND	500	"	"	"	"	"	"	
4-Chlorotoluene	ND	500	"	"	"	"	"	"	
tert-Butylbenzene	ND	500	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	500	"	"	"	"	"	"	
sec-Butylbenzene	ND	500	"	"	"	"	"	"	
p-Isopropyltoluene	ND	500	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	500	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	500	"	"	"	"	"	"	
n-Butylbenzene	ND	500	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	500	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	5000	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	500	"	"	"	"	"	"	
Hexachlorobutadiene	ND	500	"	"	"	"	"	"	
Naphthalene	ND	100	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	500	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*102 %*		*75-125*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*86.6 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*104 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*89.7 %*		*75-125*	"	"	"	"	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-3-63 (E803092-14) Vapor Sampled: 28-Mar-18 Received: 28-Mar-18									
1,1-Difluoroethane (LCC)	ND	500	ug/m3	0.05	EC82807	28-Mar-18	28-Mar-18	H&P 8260SV	
Acetone	ND	5000	"	"	"	"	"	"	
Dichlorodifluoromethane (F12)	ND	500	"	"	"	"	"	"	
Chloromethane	ND	500	"	"	"	"	"	"	
Vinyl chloride	ND	50	"	"	"	"	"	"	
Bromomethane	ND	500	"	"	"	"	"	"	
Chloroethane	ND	500	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	**1100**	500	"	"	"	"	"	"	
1,1-Dichloroethene	ND	500	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	ND	500	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	500	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	500	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	500	"	"	"	"	"	"	
1,1-Dichloroethane	ND	500	"	"	"	"	"	"	
2,2-Dichloropropane	ND	500	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	500	"	"	"	"	"	"	
Chloroform	**150**	100	"	"	"	"	"	"	
Bromochloromethane	ND	500	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	500	"	"	"	"	"	"	
1,1-Dichloropropene	ND	500	"	"	"	"	"	"	
Carbon tetrachloride	ND	100	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	100	"	"	"	"	"	"	
Benzene	ND	100	"	"	"	"	"	"	
Trichloroethene	**7900**	100	"	"	"	"	"	"	
1,2-Dichloropropane	ND	500	"	"	"	"	"	"	
Bromodichloromethane	ND	500	"	"	"	"	"	"	
Dibromomethane	ND	500	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	500	"	"	"	"	"	"	
Toluene	ND	1000	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	500	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	500	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	500	"	"	"	"	"	"	
1,3-Dichloropropane	ND	500	"	"	"	"	"	"	
Tetrachloroethene	**21000**	100	"	"	"	"	"	"	
Dibromochloromethane	ND	500	"	"	"	"	"	"	
Chlorobenzene	ND	100	"	"	"	"	"	"	
Ethylbenzene	ND	500	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	500	"	"	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-3-63 (E803092-14) Vapor Sampled: 28-Mar-18 Received: 28-Mar-18									
m,p-Xylene	ND	500	ug/m3	0.05	EC82807	28-Mar-18	28-Mar-18	H&P 8260SV	
o-Xylene	ND	500	"	"	"	"	"	"	
Styrene	ND	500	"	"	"	"	"	"	
Bromoform	ND	500	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	500	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	500	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	500	"	"	"	"	"	"	
n-Propylbenzene	ND	500	"	"	"	"	"	"	
Bromobenzene	ND	500	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	500	"	"	"	"	"	"	
2-Chlorotoluene	ND	500	"	"	"	"	"	"	
4-Chlorotoluene	ND	500	"	"	"	"	"	"	
tert-Butylbenzene	ND	500	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	500	"	"	"	"	"	"	
sec-Butylbenzene	ND	500	"	"	"	"	"	"	
p-Isopropyltoluene	ND	500	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	500	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	500	"	"	"	"	"	"	
n-Butylbenzene	ND	500	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	500	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	5000	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	500	"	"	"	"	"	"	
Hexachlorobutadiene	ND	500	"	"	"	"	"	"	
Naphthalene	ND	100	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	500	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*104 %*		*75-125*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*89.7 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*105 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*91.5 %*		*75-125*	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-7-55 (E803097-01) Vapor Sampled: 29-Mar-18 Received: 29-Mar-18									
1,1-Difluoroethane (LCC)	ND	500	ug/m3	0.05	EC82903	29-Mar-18	29-Mar-18	H&P 8260SV	
Acetone	ND	5000	"	"	"	"	"	"	
Dichlorodifluoromethane (F12)	ND	500	"	"	"	"	"	"	
Chloromethane	ND	500	"	"	"	"	"	"	
Vinyl chloride	ND	50	"	"	"	"	"	"	
Bromomethane	ND	500	"	"	"	"	"	"	
Chloroethane	ND	500	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	500	"	"	"	"	"	"	
1,1-Dichloroethene	**1600**	500	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	**520**	500	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	500	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	500	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	500	"	"	"	"	"	"	
1,1-Dichloroethane	ND	500	"	"	"	"	"	"	
2,2-Dichloropropane	ND	500	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	500	"	"	"	"	"	"	
Chloroform	**120**	100	"	"	"	"	"	"	
Bromochloromethane	ND	500	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	500	"	"	"	"	"	"	
1,1-Dichloropropene	ND	500	"	"	"	"	"	"	
Carbon tetrachloride	ND	100	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	100	"	"	"	"	"	"	
Benzene	ND	100	"	"	"	"	"	"	
Trichloroethene	**30000**	100	"	"	"	"	"	"	
1,2-Dichloropropane	ND	500	"	"	"	"	"	"	
Bromodichloromethane	ND	500	"	"	"	"	"	"	
Dibromomethane	ND	500	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	500	"	"	"	"	"	"	
Toluene	ND	1000	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	500	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	500	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	500	"	"	"	"	"	"	
1,3-Dichloropropane	ND	500	"	"	"	"	"	"	
Tetrachloroethene	**54000**	100	"	"	"	"	"	"	
Dibromochloromethane	ND	500	"	"	"	"	"	"	
Chlorobenzene	ND	100	"	"	"	"	"	"	
Ethylbenzene	ND	500	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	500	"	"	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-7-55 (E803097-01) Vapor Sampled: 29-Mar-18 Received: 29-Mar-18									
m,p-Xylene	ND	500	ug/m3	0.05	EC82903	29-Mar-18	29-Mar-18	H&P 8260SV	
o-Xylene	ND	500	"	"	"	"	"	"	
Styrene	ND	500	"	"	"	"	"	"	
Bromoform	ND	500	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	500	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	500	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	500	"	"	"	"	"	"	
n-Propylbenzene	ND	500	"	"	"	"	"	"	
Bromobenzene	ND	500	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	500	"	"	"	"	"	"	
2-Chlorotoluene	ND	500	"	"	"	"	"	"	
4-Chlorotoluene	ND	500	"	"	"	"	"	"	
tert-Butylbenzene	ND	500	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	500	"	"	"	"	"	"	
sec-Butylbenzene	ND	500	"	"	"	"	"	"	
p-Isopropyltoluene	ND	500	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	500	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	500	"	"	"	"	"	"	
n-Butylbenzene	ND	500	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	500	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	5000	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	500	"	"	"	"	"	"	
Hexachlorobutadiene	ND	500	"	"	"	"	"	"	
Naphthalene	ND	100	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	500	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*103 %*		*75-125*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*89.2 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*102 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*88.9 %*		*75-125*	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-6-80 (E803097-02) Vapor Sampled: 29-Mar-18 Received: 29-Mar-18									
1,1-Difluoroethane (LCC)	ND	500	ug/m3	0.05	EC82903	29-Mar-18	29-Mar-18	H&P 8260SV	
Acetone	ND	5000	"	"	"	"	"	"	
Dichlorodifluoromethane (F12)	ND	500	"	"	"	"	"	"	
Chloromethane	ND	500	"	"	"	"	"	"	
Vinyl chloride	ND	50	"	"	"	"	"	"	
Bromomethane	ND	500	"	"	"	"	"	"	
Chloroethane	ND	500	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	500	"	"	"	"	"	"	
1,1-Dichloroethene	**1900**	500	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	ND	500	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	500	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	500	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	500	"	"	"	"	"	"	
1,1-Dichloroethane	ND	500	"	"	"	"	"	"	
2,2-Dichloropropane	ND	500	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	500	"	"	"	"	"	"	
Chloroform	**130**	100	"	"	"	"	"	"	
Bromochloromethane	ND	500	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	500	"	"	"	"	"	"	
1,1-Dichloropropene	ND	500	"	"	"	"	"	"	
Carbon tetrachloride	ND	100	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	100	"	"	"	"	"	"	
Benzene	ND	100	"	"	"	"	"	"	
Trichloroethene	**30000**	100	"	"	"	"	"	"	
1,2-Dichloropropane	ND	500	"	"	"	"	"	"	
Bromodichloromethane	ND	500	"	"	"	"	"	"	
Dibromomethane	ND	500	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	500	"	"	"	"	"	"	
Toluene	ND	1000	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	500	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	500	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	500	"	"	"	"	"	"	
1,3-Dichloropropane	ND	500	"	"	"	"	"	"	
Tetrachloroethene	**51000**	100	"	"	"	"	"	"	
Dibromochloromethane	ND	500	"	"	"	"	"	"	
Chlorobenzene	ND	100	"	"	"	"	"	"	
Ethylbenzene	ND	500	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	500	"	"	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-6-80 (E803097-02) Vapor Sampled: 29-Mar-18 Received: 29-Mar-18									
m,p-Xylene	ND	500	ug/m3	0.05	EC82903	29-Mar-18	29-Mar-18	H&P 8260SV	
o-Xylene	ND	500	"	"	"	"	"	"	
Styrene	ND	500	"	"	"	"	"	"	
Bromoform	ND	500	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	500	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	500	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	500	"	"	"	"	"	"	
n-Propylbenzene	ND	500	"	"	"	"	"	"	
Bromobenzene	ND	500	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	500	"	"	"	"	"	"	
2-Chlorotoluene	ND	500	"	"	"	"	"	"	
4-Chlorotoluene	ND	500	"	"	"	"	"	"	
tert-Butylbenzene	ND	500	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	500	"	"	"	"	"	"	
sec-Butylbenzene	ND	500	"	"	"	"	"	"	
p-Isopropyltoluene	ND	500	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	500	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	500	"	"	"	"	"	"	
n-Butylbenzene	ND	500	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	500	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	5000	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	500	"	"	"	"	"	"	
Hexachlorobutadiene	ND	500	"	"	"	"	"	"	
Naphthalene	ND	100	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	500	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*101 %*		*75-125*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*91.3 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*104 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*89.5 %*		*75-125*	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-3-54 (E803097-03) Vapor Sampled: 29-Mar-18 Received: 29-Mar-18									
1,1-Difluoroethane (LCC)	ND	500	ug/m3	0.05	EC82903	29-Mar-18	29-Mar-18	H&P 8260SV	
Acetone	ND	5000	"	"	"	"	"	"	
Dichlorodifluoromethane (F12)	ND	500	"	"	"	"	"	"	
Chloromethane	ND	500	"	"	"	"	"	"	
Vinyl chloride	ND	50	"	"	"	"	"	"	
Bromomethane	ND	500	"	"	"	"	"	"	
Chloroethane	ND	500	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	**1200**	500	"	"	"	"	"	"	
1,1-Dichloroethene	ND	500	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	ND	500	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	500	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	500	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	500	"	"	"	"	"	"	
1,1-Dichloroethane	ND	500	"	"	"	"	"	"	
2,2-Dichloropropane	ND	500	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	500	"	"	"	"	"	"	
Chloroform	**120**	100	"	"	"	"	"	"	
Bromochloromethane	ND	500	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	500	"	"	"	"	"	"	
1,1-Dichloropropene	ND	500	"	"	"	"	"	"	
Carbon tetrachloride	ND	100	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	100	"	"	"	"	"	"	
Benzene	ND	100	"	"	"	"	"	"	
Trichloroethene	**6400**	100	"	"	"	"	"	"	
1,2-Dichloropropane	ND	500	"	"	"	"	"	"	
Bromodichloromethane	ND	500	"	"	"	"	"	"	
Dibromomethane	ND	500	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	500	"	"	"	"	"	"	
Toluene	ND	1000	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	500	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	500	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	500	"	"	"	"	"	"	
1,3-Dichloropropane	ND	500	"	"	"	"	"	"	
Tetrachloroethene	**17000**	100	"	"	"	"	"	"	
Dibromochloromethane	ND	500	"	"	"	"	"	"	
Chlorobenzene	ND	100	"	"	"	"	"	"	
Ethylbenzene	ND	500	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	500	"	"	"	"	"	"	

H&P Mobile
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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-3-54 (E803097-03) Vapor Sampled: 29-Mar-18 Received: 29-Mar-18									
m,p-Xylene	ND	500	ug/m3	0.05	EC82903	29-Mar-18	29-Mar-18	H&P 8260SV	
o-Xylene	ND	500	"	"	"	"	"	"	
Styrene	ND	500	"	"	"	"	"	"	
Bromoform	ND	500	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	500	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	500	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	500	"	"	"	"	"	"	
n-Propylbenzene	ND	500	"	"	"	"	"	"	
Bromobenzene	ND	500	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	500	"	"	"	"	"	"	
2-Chlorotoluene	ND	500	"	"	"	"	"	"	
4-Chlorotoluene	ND	500	"	"	"	"	"	"	
tert-Butylbenzene	ND	500	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	500	"	"	"	"	"	"	
sec-Butylbenzene	ND	500	"	"	"	"	"	"	
p-Isopropyltoluene	ND	500	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	500	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	500	"	"	"	"	"	"	
n-Butylbenzene	ND	500	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	500	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	5000	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	500	"	"	"	"	"	"	
Hexachlorobutadiene	ND	500	"	"	"	"	"	"	
Naphthalene	ND	100	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	500	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*105 %*		*75-125*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*91.3 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*106 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*88.7 %*		*75-125*	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-3-29 (E803097-04) Vapor Sampled: 29-Mar-18 Received: 29-Mar-18									
1,1-Difluoroethane (LCC)	ND	100	ug/m3	0.01	EC82903	29-Mar-18	29-Mar-18	H&P 8260SV	
Acetone	**4600**	1000	"	"	"	"	"	"	
Dichlorodifluoromethane (F12)	ND	100	"	"	"	"	"	"	
Chloromethane	ND	100	"	"	"	"	"	"	
Vinyl chloride	ND	10	"	"	"	"	"	"	
Bromomethane	ND	100	"	"	"	"	"	"	
Chloroethane	ND	100	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	**1600**	100	"	"	"	"	"	"	
1,1-Dichloroethene	**310**	100	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	**270**	100	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	100	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	100	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	100	"	"	"	"	"	"	
1,1-Dichloroethane	ND	100	"	"	"	"	"	"	
2,2-Dichloropropane	ND	100	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	100	"	"	"	"	"	"	
Chloroform	**80**	20	"	"	"	"	"	"	
Bromochloromethane	ND	100	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	100	"	"	"	"	"	"	
1,1-Dichloropropene	ND	100	"	"	"	"	"	"	
Carbon tetrachloride	ND	20	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	20	"	"	"	"	"	"	
Benzene	ND	20	"	"	"	"	"	"	
Trichloroethene	**4700**	20	"	"	"	"	"	"	
1,2-Dichloropropane	ND	100	"	"	"	"	"	"	
Bromodichloromethane	ND	100	"	"	"	"	"	"	
Dibromomethane	ND	100	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	100	"	"	"	"	"	"	
Toluene	ND	200	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	100	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	100	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	100	"	"	"	"	"	"	
1,3-Dichloropropane	ND	100	"	"	"	"	"	"	
Tetrachloroethene	**10000**	20	"	"	"	"	"	"	
Dibromochloromethane	ND	100	"	"	"	"	"	"	
Chlorobenzene	ND	20	"	"	"	"	"	"	
Ethylbenzene	ND	100	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	100	"	"	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-3-29 (E803097-04) Vapor Sampled: 29-Mar-18 Received: 29-Mar-18									
m,p-Xylene	ND	100	ug/m3	0.01	EC82903	29-Mar-18	29-Mar-18	H&P 8260SV	
o-Xylene	ND	100	"	"	"	"	"	"	
Styrene	ND	100	"	"	"	"	"	"	
Bromoform	ND	100	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	100	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	100	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	100	"	"	"	"	"	"	
n-Propylbenzene	ND	100	"	"	"	"	"	"	
Bromobenzene	ND	100	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	100	"	"	"	"	"	"	
2-Chlorotoluene	ND	100	"	"	"	"	"	"	
4-Chlorotoluene	ND	100	"	"	"	"	"	"	
tert-Butylbenzene	ND	100	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	100	"	"	"	"	"	"	
sec-Butylbenzene	ND	100	"	"	"	"	"	"	
p-Isopropyltoluene	ND	100	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	100	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	100	"	"	"	"	"	"	
n-Butylbenzene	ND	100	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	100	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	1000	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	100	"	"	"	"	"	"	
Hexachlorobutadiene	ND	100	"	"	"	"	"	"	
Naphthalene	ND	20	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	100	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*103 %*		*75-125*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*90.2 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*107 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*87.0 %*		*75-125*	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-3-17 (E803097-05) Vapor Sampled: 29-Mar-18 Received: 29-Mar-18									
1,1-Difluoroethane (LCC)	ND	100	ug/m3	0.01	EC82903	29-Mar-18	29-Mar-18	H&P 8260SV	
Acetone	**3900**	1000	"	"	"	"	"	"	
Dichlorodifluoromethane (F12)	ND	100	"	"	"	"	"	"	
Chloromethane	ND	100	"	"	"	"	"	"	
Vinyl chloride	ND	10	"	"	"	"	"	"	
Bromomethane	ND	100	"	"	"	"	"	"	
Chloroethane	ND	100	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	**2400**	100	"	"	"	"	"	"	
1,1-Dichloroethene	**270**	100	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	**250**	100	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	100	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	100	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	100	"	"	"	"	"	"	
1,1-Dichloroethane	ND	100	"	"	"	"	"	"	
2,2-Dichloropropane	ND	100	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	100	"	"	"	"	"	"	
Chloroform	**80**	20	"	"	"	"	"	"	
Bromochloromethane	ND	100	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	100	"	"	"	"	"	"	
1,1-Dichloropropene	ND	100	"	"	"	"	"	"	
Carbon tetrachloride	ND	20	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	20	"	"	"	"	"	"	
Benzene	**20**	20	"	"	"	"	"	"	
Trichloroethene	**4300**	20	"	"	"	"	"	"	
1,2-Dichloropropane	ND	100	"	"	"	"	"	"	
Bromodichloromethane	ND	100	"	"	"	"	"	"	
Dibromomethane	ND	100	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	100	"	"	"	"	"	"	
Toluene	ND	200	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	100	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	100	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	100	"	"	"	"	"	"	
1,3-Dichloropropane	ND	100	"	"	"	"	"	"	
Tetrachloroethene	**10000**	20	"	"	"	"	"	"	
Dibromochloromethane	ND	100	"	"	"	"	"	"	
Chlorobenzene	ND	20	"	"	"	"	"	"	
Ethylbenzene	ND	100	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	100	"	"	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-3-17 (E803097-05) Vapor Sampled: 29-Mar-18 Received: 29-Mar-18									
m,p-Xylene	ND	100	ug/m3	0.01	EC82903	29-Mar-18	29-Mar-18	H&P 8260SV	
o-Xylene	ND	100	"	"	"	"	"	"	
Styrene	ND	100	"	"	"	"	"	"	
Bromoform	ND	100	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	100	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	100	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	100	"	"	"	"	"	"	
n-Propylbenzene	ND	100	"	"	"	"	"	"	
Bromobenzene	ND	100	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	100	"	"	"	"	"	"	
2-Chlorotoluene	ND	100	"	"	"	"	"	"	
4-Chlorotoluene	ND	100	"	"	"	"	"	"	
tert-Butylbenzene	ND	100	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	100	"	"	"	"	"	"	
sec-Butylbenzene	ND	100	"	"	"	"	"	"	
p-Isopropyltoluene	ND	100	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	100	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	100	"	"	"	"	"	"	
n-Butylbenzene	ND	100	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	100	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	1000	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	100	"	"	"	"	"	"	
Hexachlorobutadiene	ND	100	"	"	"	"	"	"	
Naphthalene	ND	20	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	100	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*98.3 %*		*75-125*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*89.0 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*103 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*92.7 %*		*75-125*	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-5-80 (E803097-06) Vapor Sampled: 29-Mar-18 Received: 29-Mar-18									
1,1-Difluoroethane (LCC)	ND	500	ug/m3	0.05	EC82903	29-Mar-18	29-Mar-18	H&P 8260SV	
Acetone	ND	5000	"	"	"	"	"	"	
Dichlorodifluoromethane (F12)	ND	500	"	"	"	"	"	"	
Chloromethane	ND	500	"	"	"	"	"	"	
Vinyl chloride	ND	50	"	"	"	"	"	"	
Bromomethane	ND	500	"	"	"	"	"	"	
Chloroethane	ND	500	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	500	"	"	"	"	"	"	
1,1-Dichloroethene	**820**	500	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	ND	500	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	500	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	500	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	500	"	"	"	"	"	"	
1,1-Dichloroethane	ND	500	"	"	"	"	"	"	
2,2-Dichloropropane	ND	500	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	500	"	"	"	"	"	"	
Chloroform	**200**	100	"	"	"	"	"	"	
Bromochloromethane	ND	500	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	500	"	"	"	"	"	"	
1,1-Dichloropropene	ND	500	"	"	"	"	"	"	
Carbon tetrachloride	ND	100	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	100	"	"	"	"	"	"	
Benzene	ND	100	"	"	"	"	"	"	
Trichloroethene	**9300**	100	"	"	"	"	"	"	
1,2-Dichloropropane	ND	500	"	"	"	"	"	"	
Bromodichloromethane	ND	500	"	"	"	"	"	"	
Dibromomethane	ND	500	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	500	"	"	"	"	"	"	
Toluene	ND	1000	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	500	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	500	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	500	"	"	"	"	"	"	
1,3-Dichloropropane	ND	500	"	"	"	"	"	"	
Tetrachloroethene	**28000**	100	"	"	"	"	"	"	
Dibromochloromethane	ND	500	"	"	"	"	"	"	
Chlorobenzene	ND	100	"	"	"	"	"	"	
Ethylbenzene	ND	500	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	500	"	"	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-5-80 (E803097-06) Vapor Sampled: 29-Mar-18 Received: 29-Mar-18									
m,p-Xylene	ND	500	ug/m3	0.05	EC82903	29-Mar-18	29-Mar-18	H&P 8260SV	
o-Xylene	ND	500	"	"	"	"	"	"	
Styrene	ND	500	"	"	"	"	"	"	
Bromoform	ND	500	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	500	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	500	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	500	"	"	"	"	"	"	
n-Propylbenzene	ND	500	"	"	"	"	"	"	
Bromobenzene	ND	500	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	500	"	"	"	"	"	"	
2-Chlorotoluene	ND	500	"	"	"	"	"	"	
4-Chlorotoluene	ND	500	"	"	"	"	"	"	
tert-Butylbenzene	ND	500	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	500	"	"	"	"	"	"	
sec-Butylbenzene	ND	500	"	"	"	"	"	"	
p-Isopropyltoluene	ND	500	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	500	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	500	"	"	"	"	"	"	
n-Butylbenzene	ND	500	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	500	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	5000	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	500	"	"	"	"	"	"	
Hexachlorobutadiene	ND	500	"	"	"	"	"	"	
Naphthalene	ND	100	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	500	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*104 %*		*75-125*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*90.3 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*103 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*87.5 %*		*75-125*	"	"	"	"	

H&P Mobile
Geochemistry Inc.

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-5-80 REP (E803097-07) Vapor	**Sampled: 29-Mar-18**	**Received: 29-Mar-18**							
1,1-Difluoroethane (LCC)	ND	500	ug/m3	0.05	EC82903	29-Mar-18	29-Mar-18	H&P 8260SV	
Acetone	ND	5000	"	"	"	"	"	"	
Dichlorodifluoromethane (F12)	ND	500	"	"	"	"	"	"	
Chloromethane	ND	500	"	"	"	"	"	"	
Vinyl chloride	ND	50	"	"	"	"	"	"	
Bromomethane	ND	500	"	"	"	"	"	"	
Chloroethane	ND	500	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	500	"	"	"	"	"	"	
1,1-Dichloroethene	**780**	500	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	ND	500	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	500	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	500	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	500	"	"	"	"	"	"	
1,1-Dichloroethane	ND	500	"	"	"	"	"	"	
2,2-Dichloropropane	ND	500	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	500	"	"	"	"	"	"	
Chloroform	**210**	100	"	"	"	"	"	"	
Bromochloromethane	ND	500	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	500	"	"	"	"	"	"	
1,1-Dichloropropene	ND	500	"	"	"	"	"	"	
Carbon tetrachloride	ND	100	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	100	"	"	"	"	"	"	
Benzene	ND	100	"	"	"	"	"	"	
Trichloroethene	**9800**	100	"	"	"	"	"	"	
1,2-Dichloropropane	ND	500	"	"	"	"	"	"	
Bromodichloromethane	ND	500	"	"	"	"	"	"	
Dibromomethane	ND	500	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	500	"	"	"	"	"	"	
Toluene	ND	1000	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	500	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	500	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	500	"	"	"	"	"	"	
1,3-Dichloropropane	ND	500	"	"	"	"	"	"	
Tetrachloroethene	**31000**	100	"	"	"	"	"	"	
Dibromochloromethane	ND	500	"	"	"	"	"	"	
Chlorobenzene	ND	100	"	"	"	"	"	"	
Ethylbenzene	ND	500	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	500	"	"	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-5-80 REP (E803097-07) Vapor Sampled: 29-Mar-18 Received: 29-Mar-18									
m,p-Xylene	ND	500	ug/m3	0.05	EC82903	29-Mar-18	29-Mar-18	H&P 8260SV	
o-Xylene	ND	500	"	"	"	"	"	"	
Styrene	ND	500	"	"	"	"	"	"	
Bromoform	ND	500	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	500	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	500	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	500	"	"	"	"	"	"	
n-Propylbenzene	ND	500	"	"	"	"	"	"	
Bromobenzene	ND	500	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	500	"	"	"	"	"	"	
2-Chlorotoluene	ND	500	"	"	"	"	"	"	
4-Chlorotoluene	ND	500	"	"	"	"	"	"	
tert-Butylbenzene	ND	500	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	500	"	"	"	"	"	"	
sec-Butylbenzene	ND	500	"	"	"	"	"	"	
p-Isopropyltoluene	ND	500	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	500	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	500	"	"	"	"	"	"	
n-Butylbenzene	ND	500	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	500	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	5000	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	500	"	"	"	"	"	"	
Hexachlorobutadiene	ND	500	"	"	"	"	"	"	
Naphthalene	ND	100	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	500	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*100 %*		*75-125*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*88.7 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*104 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*91.1 %*		*75-125*	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-5-55 (E803097-08) Vapor Sampled: 29-Mar-18 Received: 29-Mar-18									
1,1-Difluoroethane (LCC)	ND	500	ug/m3	0.05	EC82903	29-Mar-18	29-Mar-18	H&P 8260SV	
Acetone	ND	5000	"	"	"	"	"	"	
Dichlorodifluoromethane (F12)	ND	500	"	"	"	"	"	"	
Chloromethane	ND	500	"	"	"	"	"	"	
Vinyl chloride	ND	50	"	"	"	"	"	"	
Bromomethane	ND	500	"	"	"	"	"	"	
Chloroethane	ND	500	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	500	"	"	"	"	"	"	
1,1-Dichloroethene	**650**	500	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	ND	500	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	500	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	500	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	500	"	"	"	"	"	"	
1,1-Dichloroethane	ND	500	"	"	"	"	"	"	
2,2-Dichloropropane	ND	500	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	500	"	"	"	"	"	"	
Chloroform	**140**	100	"	"	"	"	"	"	
Bromochloromethane	ND	500	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	500	"	"	"	"	"	"	
1,1-Dichloropropene	ND	500	"	"	"	"	"	"	
Carbon tetrachloride	ND	100	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	100	"	"	"	"	"	"	
Benzene	ND	100	"	"	"	"	"	"	
Trichloroethene	**6700**	100	"	"	"	"	"	"	
1,2-Dichloropropane	ND	500	"	"	"	"	"	"	
Bromodichloromethane	ND	500	"	"	"	"	"	"	
Dibromomethane	ND	500	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	500	"	"	"	"	"	"	
Toluene	ND	1000	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	500	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	500	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	500	"	"	"	"	"	"	
1,3-Dichloropropane	ND	500	"	"	"	"	"	"	
Tetrachloroethene	**18000**	100	"	"	"	"	"	"	
Dibromochloromethane	ND	500	"	"	"	"	"	"	
Chlorobenzene	ND	100	"	"	"	"	"	"	
Ethylbenzene	ND	500	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	500	"	"	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-5-55 (E803097-08) Vapor Sampled: 29-Mar-18 Received: 29-Mar-18									
m,p-Xylene	ND	500	ug/m3	0.05	EC82903	29-Mar-18	29-Mar-18	H&P 8260SV	
o-Xylene	ND	500	"	"	"	"	"	"	
Styrene	ND	500	"	"	"	"	"	"	
Bromoform	ND	500	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	500	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	500	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	500	"	"	"	"	"	"	
n-Propylbenzene	ND	500	"	"	"	"	"	"	
Bromobenzene	ND	500	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	500	"	"	"	"	"	"	
2-Chlorotoluene	ND	500	"	"	"	"	"	"	
4-Chlorotoluene	ND	500	"	"	"	"	"	"	
tert-Butylbenzene	ND	500	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	500	"	"	"	"	"	"	
sec-Butylbenzene	ND	500	"	"	"	"	"	"	
p-Isopropyltoluene	ND	500	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	500	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	500	"	"	"	"	"	"	
n-Butylbenzene	ND	500	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	500	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	5000	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	500	"	"	"	"	"	"	
Hexachlorobutadiene	ND	500	"	"	"	"	"	"	
Naphthalene	ND	100	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	500	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*106 %*		*75-125*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*90.8 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*106 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*88.8 %*		*75-125*	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-5-39 (E803097-09) Vapor Sampled: 29-Mar-18 Received: 29-Mar-18									
1,1-Difluoroethane (LCC)	ND	100	ug/m3	0.01	EC82903	29-Mar-18	29-Mar-18	H&P 8260SV	
Acetone	**4300**	1000	"	"	"	"	"	"	
Dichlorodifluoromethane (F12)	ND	100	"	"	"	"	"	"	
Chloromethane	ND	100	"	"	"	"	"	"	
Vinyl chloride	ND	10	"	"	"	"	"	"	
Bromomethane	ND	100	"	"	"	"	"	"	
Chloroethane	ND	100	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	**180**	100	"	"	"	"	"	"	
1,1-Dichloroethene	**530**	100	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	**110**	100	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	100	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	100	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	100	"	"	"	"	"	"	
1,1-Dichloroethane	ND	100	"	"	"	"	"	"	
2,2-Dichloropropane	ND	100	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	100	"	"	"	"	"	"	
Chloroform	**120**	20	"	"	"	"	"	"	
Bromochloromethane	ND	100	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	100	"	"	"	"	"	"	
1,1-Dichloropropene	ND	100	"	"	"	"	"	"	
Carbon tetrachloride	ND	20	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	20	"	"	"	"	"	"	
Benzene	ND	20	"	"	"	"	"	"	
Trichloroethene	**4900**	20	"	"	"	"	"	"	
1,2-Dichloropropane	ND	100	"	"	"	"	"	"	
Bromodichloromethane	ND	100	"	"	"	"	"	"	
Dibromomethane	ND	100	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	100	"	"	"	"	"	"	
Toluene	ND	200	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	100	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	100	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	100	"	"	"	"	"	"	
1,3-Dichloropropane	ND	100	"	"	"	"	"	"	
Tetrachloroethene	**12000**	20	"	"	"	"	"	"	
Dibromochloromethane	ND	100	"	"	"	"	"	"	
Chlorobenzene	ND	20	"	"	"	"	"	"	
Ethylbenzene	ND	100	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	100	"	"	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-5-39 (E803097-09) Vapor Sampled: 29-Mar-18 Received: 29-Mar-18									
m,p-Xylene	ND	100	ug/m3	0.01	EC82903	29-Mar-18	29-Mar-18	H&P 8260SV	
o-Xylene	ND	100	"	"	"	"	"	"	
Styrene	ND	100	"	"	"	"	"	"	
Bromoform	ND	100	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	100	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	100	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	100	"	"	"	"	"	"	
n-Propylbenzene	ND	100	"	"	"	"	"	"	
Bromobenzene	ND	100	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	100	"	"	"	"	"	"	
2-Chlorotoluene	ND	100	"	"	"	"	"	"	
4-Chlorotoluene	ND	100	"	"	"	"	"	"	
tert-Butylbenzene	ND	100	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	100	"	"	"	"	"	"	
sec-Butylbenzene	ND	100	"	"	"	"	"	"	
p-Isopropyltoluene	ND	100	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	100	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	100	"	"	"	"	"	"	
n-Butylbenzene	ND	100	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	100	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	1000	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	100	"	"	"	"	"	"	
Hexachlorobutadiene	ND	100	"	"	"	"	"	"	
Naphthalene	ND	20	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	100	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*100 %*		*75-125*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*86.6 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*104 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*93.8 %*		*75-125*	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-5-15 (E803097-10) Vapor Sampled: 29-Mar-18 Received: 29-Mar-18									
1,1-Difluoroethane (LCC)	ND	100	ug/m3	0.01	EC82903	29-Mar-18	29-Mar-18	H&P 8260SV	
Acetone	**2800**	1000	"	"	"	"	"	"	
Dichlorodifluoromethane (F12)	ND	100	"	"	"	"	"	"	
Chloromethane	ND	100	"	"	"	"	"	"	
Vinyl chloride	ND	10	"	"	"	"	"	"	
Bromomethane	ND	100	"	"	"	"	"	"	
Chloroethane	ND	100	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	**130**	100	"	"	"	"	"	"	
1,1-Dichloroethene	**290**	100	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	ND	100	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	100	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	100	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	100	"	"	"	"	"	"	
1,1-Dichloroethane	ND	100	"	"	"	"	"	"	
2,2-Dichloropropane	ND	100	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	100	"	"	"	"	"	"	
Chloroform	**60**	20	"	"	"	"	"	"	
Bromochloromethane	ND	100	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	100	"	"	"	"	"	"	
1,1-Dichloropropene	ND	100	"	"	"	"	"	"	
Carbon tetrachloride	ND	20	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	20	"	"	"	"	"	"	
Benzene	ND	20	"	"	"	"	"	"	
Trichloroethene	**2700**	20	"	"	"	"	"	"	
1,2-Dichloropropane	ND	100	"	"	"	"	"	"	
Bromodichloromethane	ND	100	"	"	"	"	"	"	
Dibromomethane	ND	100	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	100	"	"	"	"	"	"	
Toluene	ND	200	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	100	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	100	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	100	"	"	"	"	"	"	
1,3-Dichloropropane	ND	100	"	"	"	"	"	"	
Tetrachloroethene	**8100**	20	"	"	"	"	"	"	
Dibromochloromethane	ND	100	"	"	"	"	"	"	
Chlorobenzene	ND	20	"	"	"	"	"	"	
Ethylbenzene	ND	100	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	100	"	"	"	"	"	"	

H&P Mobile
Geochemistry Inc.

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-5-15 (E803097-10) Vapor Sampled: 29-Mar-18 Received: 29-Mar-18									
m,p-Xylene	ND	100	ug/m3	0.01	EC82903	29-Mar-18	29-Mar-18	H&P 8260SV	
o-Xylene	ND	100	"	"	"	"	"	"	
Styrene	ND	100	"	"	"	"	"	"	
Bromoform	ND	100	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	100	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	100	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	100	"	"	"	"	"	"	
n-Propylbenzene	ND	100	"	"	"	"	"	"	
Bromobenzene	ND	100	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	100	"	"	"	"	"	"	
2-Chlorotoluene	ND	100	"	"	"	"	"	"	
4-Chlorotoluene	ND	100	"	"	"	"	"	"	
tert-Butylbenzene	ND	100	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	100	"	"	"	"	"	"	
sec-Butylbenzene	ND	100	"	"	"	"	"	"	
p-Isopropyltoluene	ND	100	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	100	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	100	"	"	"	"	"	"	
n-Butylbenzene	ND	100	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	100	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	1000	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	100	"	"	"	"	"	"	
Hexachlorobutadiene	ND	100	"	"	"	"	"	"	
Naphthalene	ND	20	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	100	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*98.9 %*		*75-125*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*88.7 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*101 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*89.0 %*		*75-125*	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-2-65 (E803097-11) Vapor Sampled: 29-Mar-18 Received: 29-Mar-18									
1,1-Difluoroethane (LCC)	ND	500	ug/m3	0.05	EC82903	29-Mar-18	29-Mar-18	H&P 8260SV	
Acetone	ND	5000	"	"	"	"	"	"	
Dichlorodifluoromethane (F12)	ND	500	"	"	"	"	"	"	
Chloromethane	ND	500	"	"	"	"	"	"	
Vinyl chloride	ND	50	"	"	"	"	"	"	
Bromomethane	ND	500	"	"	"	"	"	"	
Chloroethane	ND	500	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	500	"	"	"	"	"	"	
1,1-Dichloroethene	**1600**	500	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	**770**	500	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	500	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	500	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	500	"	"	"	"	"	"	
1,1-Dichloroethane	ND	500	"	"	"	"	"	"	
2,2-Dichloropropane	ND	500	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	500	"	"	"	"	"	"	
Chloroform	**120**	100	"	"	"	"	"	"	
Bromochloromethane	ND	500	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	500	"	"	"	"	"	"	
1,1-Dichloropropene	ND	500	"	"	"	"	"	"	
Carbon tetrachloride	ND	100	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	100	"	"	"	"	"	"	
Benzene	ND	100	"	"	"	"	"	"	
Trichloroethene	**38000**	100	"	"	"	"	"	"	
1,2-Dichloropropane	ND	500	"	"	"	"	"	"	
Bromodichloromethane	ND	500	"	"	"	"	"	"	
Dibromomethane	ND	500	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	500	"	"	"	"	"	"	
Toluene	ND	1000	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	500	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	500	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	500	"	"	"	"	"	"	
1,3-Dichloropropane	ND	500	"	"	"	"	"	"	
Tetrachloroethene	**66000**	100	"	"	"	"	"	"	
Dibromochloromethane	ND	500	"	"	"	"	"	"	
Chlorobenzene	ND	100	"	"	"	"	"	"	
Ethylbenzene	ND	500	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	500	"	"	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-2-65 (E803097-11) Vapor Sampled: 29-Mar-18 Received: 29-Mar-18									
m,p-Xylene	ND	500	ug/m3	0.05	EC82903	29-Mar-18	29-Mar-18	H&P 8260SV	
o-Xylene	ND	500	"	"	"	"	"	"	
Styrene	ND	500	"	"	"	"	"	"	
Bromoform	ND	500	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	500	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	500	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	500	"	"	"	"	"	"	
n-Propylbenzene	ND	500	"	"	"	"	"	"	
Bromobenzene	ND	500	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	500	"	"	"	"	"	"	
2-Chlorotoluene	ND	500	"	"	"	"	"	"	
4-Chlorotoluene	ND	500	"	"	"	"	"	"	
tert-Butylbenzene	ND	500	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	500	"	"	"	"	"	"	
sec-Butylbenzene	ND	500	"	"	"	"	"	"	
p-Isopropyltoluene	ND	500	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	500	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	500	"	"	"	"	"	"	
n-Butylbenzene	ND	500	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	500	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	5000	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	500	"	"	"	"	"	"	
Hexachlorobutadiene	ND	500	"	"	"	"	"	"	
Naphthalene	ND	100	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	500	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*105 %*		*75-125*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*92.8 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*104 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*90.6 %*		*75-125*	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-2-46 (E803097-12) Vapor Sampled: 29-Mar-18 Received: 29-Mar-18									
1,1-Difluoroethane (LCC)	ND	500	ug/m3	0.05	EC82903	29-Mar-18	29-Mar-18	H&P 8260SV	
Acetone	ND	5000	"	"	"	"	"	"	
Dichlorodifluoromethane (F12)	ND	500	"	"	"	"	"	"	
Chloromethane	ND	500	"	"	"	"	"	"	
Vinyl chloride	ND	50	"	"	"	"	"	"	
Bromomethane	ND	500	"	"	"	"	"	"	
Chloroethane	ND	500	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	500	"	"	"	"	"	"	
1,1-Dichloroethene	**1400**	500	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	**710**	500	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	500	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	500	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	500	"	"	"	"	"	"	
1,1-Dichloroethane	ND	500	"	"	"	"	"	"	
2,2-Dichloropropane	ND	500	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	500	"	"	"	"	"	"	
Chloroform	**110**	100	"	"	"	"	"	"	
Bromochloromethane	ND	500	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	500	"	"	"	"	"	"	
1,1-Dichloropropene	ND	500	"	"	"	"	"	"	
Carbon tetrachloride	ND	100	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	100	"	"	"	"	"	"	
Benzene	ND	100	"	"	"	"	"	"	
Trichloroethene	**37000**	100	"	"	"	"	"	"	
1,2-Dichloropropane	ND	500	"	"	"	"	"	"	
Bromodichloromethane	ND	500	"	"	"	"	"	"	
Dibromomethane	ND	500	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	500	"	"	"	"	"	"	
Toluene	ND	1000	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	500	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	500	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	500	"	"	"	"	"	"	
1,3-Dichloropropane	ND	500	"	"	"	"	"	"	
Tetrachloroethene	**66000**	100	"	"	"	"	"	"	
Dibromochloromethane	ND	500	"	"	"	"	"	"	
Chlorobenzene	ND	100	"	"	"	"	"	"	
Ethylbenzene	ND	500	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	500	"	"	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-2-46 (E803097-12) Vapor Sampled: 29-Mar-18 Received: 29-Mar-18									
m,p-Xylene	ND	500	ug/m3	0.05	EC82903	29-Mar-18	29-Mar-18	H&P 8260SV	
o-Xylene	ND	500	"	"	"	"	"	"	
Styrene	ND	500	"	"	"	"	"	"	
Bromoform	ND	500	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	500	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	500	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	500	"	"	"	"	"	"	
n-Propylbenzene	ND	500	"	"	"	"	"	"	
Bromobenzene	ND	500	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	500	"	"	"	"	"	"	
2-Chlorotoluene	ND	500	"	"	"	"	"	"	
4-Chlorotoluene	ND	500	"	"	"	"	"	"	
tert-Butylbenzene	ND	500	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	500	"	"	"	"	"	"	
sec-Butylbenzene	ND	500	"	"	"	"	"	"	
p-Isopropyltoluene	ND	500	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	500	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	500	"	"	"	"	"	"	
n-Butylbenzene	ND	500	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	500	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	5000	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	500	"	"	"	"	"	"	
Hexachlorobutadiene	ND	500	"	"	"	"	"	"	
Naphthalene	ND	100	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	500	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*107 %*		*75-125*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*92.8 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*102 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*89.0 %*		*75-125*	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-2-80 (E803097-13) Vapor Sampled: 29-Mar-18 Received: 29-Mar-18									
1,1-Difluoroethane (LCC)	ND	500	ug/m3	0.05	EC82903	29-Mar-18	29-Mar-18	H&P 8260SV	
Acetone	ND	5000	"	"	"	"	"	"	
Dichlorodifluoromethane (F12)	ND	500	"	"	"	"	"	"	
Chloromethane	ND	500	"	"	"	"	"	"	
Vinyl chloride	ND	50	"	"	"	"	"	"	
Bromomethane	ND	500	"	"	"	"	"	"	
Chloroethane	ND	500	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	500	"	"	"	"	"	"	
1,1-Dichloroethene	**1500**	500	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	**790**	500	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	500	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	500	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	500	"	"	"	"	"	"	
1,1-Dichloroethane	ND	500	"	"	"	"	"	"	
2,2-Dichloropropane	ND	500	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	500	"	"	"	"	"	"	
Chloroform	ND	100	"	"	"	"	"	"	
Bromochloromethane	ND	500	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	500	"	"	"	"	"	"	
1,1-Dichloropropene	ND	500	"	"	"	"	"	"	
Carbon tetrachloride	ND	100	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	100	"	"	"	"	"	"	
Benzene	ND	100	"	"	"	"	"	"	
Trichloroethene	**31000**	100	"	"	"	"	"	"	
1,2-Dichloropropane	ND	500	"	"	"	"	"	"	
Bromodichloromethane	ND	500	"	"	"	"	"	"	
Dibromomethane	ND	500	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	500	"	"	"	"	"	"	
Toluene	ND	1000	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	500	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	500	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	500	"	"	"	"	"	"	
1,3-Dichloropropane	ND	500	"	"	"	"	"	"	
Tetrachloroethene	**57000**	100	"	"	"	"	"	"	
Dibromochloromethane	ND	500	"	"	"	"	"	"	
Chlorobenzene	ND	100	"	"	"	"	"	"	
Ethylbenzene	ND	500	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	500	"	"	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-2-80 (E803097-13) Vapor Sampled: 29-Mar-18 Received: 29-Mar-18									
m,p-Xylene	ND	500	ug/m3	0.05	EC82903	29-Mar-18	29-Mar-18	H&P 8260SV	
o-Xylene	ND	500	"	"	"	"	"	"	
Styrene	ND	500	"	"	"	"	"	"	
Bromoform	ND	500	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	500	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	500	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	500	"	"	"	"	"	"	
n-Propylbenzene	ND	500	"	"	"	"	"	"	
Bromobenzene	ND	500	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	500	"	"	"	"	"	"	
2-Chlorotoluene	ND	500	"	"	"	"	"	"	
4-Chlorotoluene	ND	500	"	"	"	"	"	"	
tert-Butylbenzene	ND	500	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	500	"	"	"	"	"	"	
sec-Butylbenzene	ND	500	"	"	"	"	"	"	
p-Isopropyltoluene	ND	500	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	500	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	500	"	"	"	"	"	"	
n-Butylbenzene	ND	500	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	500	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	5000	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	500	"	"	"	"	"	"	
Hexachlorobutadiene	ND	500	"	"	"	"	"	"	
Naphthalene	ND	100	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	500	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*99.6 %*		*75-125*		"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*90.0 %*		*75-125*		"	"	"	
Surrogate: Toluene-d8		*103 %*		*75-125*		"	"	"	
Surrogate: 4-Bromofluorobenzene		*91.4 %*		*75-125*		"	"	"	

H&P Mobile
Geochemistry Inc.

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-2-19 (E803097-14) Vapor Sampled: 29-Mar-18 Received: 29-Mar-18									
1,1-Difluoroethane (LCC)	ND	100	ug/m3	0.01	EC82903	29-Mar-18	29-Mar-18	H&P 8260SV	
Acetone	**9800**	1000	"	"	"	"	"	"	
Dichlorodifluoromethane (F12)	ND	100	"	"	"	"	"	"	
Chloromethane	ND	100	"	"	"	"	"	"	
Vinyl chloride	ND	10	"	"	"	"	"	"	
Bromomethane	ND	100	"	"	"	"	"	"	
Chloroethane	ND	100	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	100	"	"	"	"	"	"	
1,1-Dichloroethene	**510**	100	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	**330**	100	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	100	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	100	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	100	"	"	"	"	"	"	
1,1-Dichloroethane	ND	100	"	"	"	"	"	"	
2,2-Dichloropropane	ND	100	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	100	"	"	"	"	"	"	
Chloroform	**50**	20	"	"	"	"	"	"	
Bromochloromethane	ND	100	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	100	"	"	"	"	"	"	
1,1-Dichloropropene	ND	100	"	"	"	"	"	"	
Carbon tetrachloride	ND	20	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	20	"	"	"	"	"	"	
Benzene	**40**	20	"	"	"	"	"	"	
Trichloroethene	**7900**	20	"	"	"	"	"	"	
1,2-Dichloropropane	ND	100	"	"	"	"	"	"	
Bromodichloromethane	ND	100	"	"	"	"	"	"	
Dibromomethane	ND	100	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	100	"	"	"	"	"	"	
Toluene	ND	200	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	100	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	100	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	100	"	"	"	"	"	"	
1,3-Dichloropropane	ND	100	"	"	"	"	"	"	
Tetrachloroethene	**9200**	20	"	"	"	"	"	"	
Dibromochloromethane	ND	100	"	"	"	"	"	"	
Chlorobenzene	ND	20	"	"	"	"	"	"	
Ethylbenzene	ND	100	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	100	"	"	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-2-19 (E803097-14) Vapor Sampled: 29-Mar-18 Received: 29-Mar-18									
m,p-Xylene	ND	100	ug/m3	0.01	EC82903	29-Mar-18	29-Mar-18	H&P 8260SV	
o-Xylene	ND	100	"	"	"	"	"	"	
Styrene	ND	100	"	"	"	"	"	"	
Bromoform	ND	100	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	100	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	100	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	100	"	"	"	"	"	"	
n-Propylbenzene	ND	100	"	"	"	"	"	"	
Bromobenzene	ND	100	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	100	"	"	"	"	"	"	
2-Chlorotoluene	ND	100	"	"	"	"	"	"	
4-Chlorotoluene	ND	100	"	"	"	"	"	"	
tert-Butylbenzene	ND	100	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	100	"	"	"	"	"	"	
sec-Butylbenzene	ND	100	"	"	"	"	"	"	
p-Isopropyltoluene	ND	100	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	100	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	100	"	"	"	"	"	"	
n-Butylbenzene	ND	100	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	100	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	1000	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	100	"	"	"	"	"	"	
Hexachlorobutadiene	ND	100	"	"	"	"	"	"	
Naphthalene	ND	20	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	100	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*102 %*		*75-125*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*91.4 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*105 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*87.3 %*		*75-125*	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-8-80 (E803110-01) Vapor Sampled: 30-Mar-18 Received: 30-Mar-18									
1,1-Difluoroethane (LCC)	ND	500	ug/m3	0.05	EC83003	30-Mar-18	30-Mar-18	H&P 8260SV	
Acetone	ND	5000	"	"	"	"	"	"	
Dichlorodifluoromethane (F12)	ND	500	"	"	"	"	"	"	
Chloromethane	ND	500	"	"	"	"	"	"	
Vinyl chloride	ND	50	"	"	"	"	"	"	
Bromomethane	ND	500	"	"	"	"	"	"	
Chloroethane	ND	500	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	500	"	"	"	"	"	"	
1,1-Dichloroethene	**3600**	500	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	**620**	500	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	500	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	500	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	500	"	"	"	"	"	"	
1,1-Dichloroethane	ND	500	"	"	"	"	"	"	
2,2-Dichloropropane	ND	500	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**550**	500	"	"	"	"	"	"	
Chloroform	**140**	100	"	"	"	"	"	"	
Bromochloromethane	ND	500	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	500	"	"	"	"	"	"	
1,1-Dichloropropene	ND	500	"	"	"	"	"	"	
Carbon tetrachloride	ND	100	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	100	"	"	"	"	"	"	
Benzene	ND	100	"	"	"	"	"	"	
Trichloroethene	**48000**	100	"	"	"	"	"	"	
1,2-Dichloropropane	ND	500	"	"	"	"	"	"	
Bromodichloromethane	ND	500	"	"	"	"	"	"	
Dibromomethane	ND	500	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	500	"	"	"	"	"	"	
Toluene	ND	1000	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	500	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	500	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	500	"	"	"	"	"	"	
1,3-Dichloropropane	ND	500	"	"	"	"	"	"	
Tetrachloroethene	**57000**	100	"	"	"	"	"	"	
Dibromochloromethane	ND	500	"	"	"	"	"	"	
Chlorobenzene	ND	100	"	"	"	"	"	"	
Ethylbenzene	ND	500	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	500	"	"	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-8-80 (E803110-01) Vapor Sampled: 30-Mar-18 Received: 30-Mar-18									
m,p-Xylene	ND	500	ug/m3	0.05	EC83003	30-Mar-18	30-Mar-18	H&P 8260SV	
o-Xylene	ND	500	"	"	"	"	"	"	
Styrene	ND	500	"	"	"	"	"	"	
Bromoform	ND	500	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	500	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	500	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	500	"	"	"	"	"	"	
n-Propylbenzene	ND	500	"	"	"	"	"	"	
Bromobenzene	ND	500	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	500	"	"	"	"	"	"	
2-Chlorotoluene	ND	500	"	"	"	"	"	"	
4-Chlorotoluene	ND	500	"	"	"	"	"	"	
tert-Butylbenzene	ND	500	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	500	"	"	"	"	"	"	
sec-Butylbenzene	ND	500	"	"	"	"	"	"	
p-Isopropyltoluene	ND	500	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	500	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	500	"	"	"	"	"	"	
n-Butylbenzene	ND	500	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	500	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	5000	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	500	"	"	"	"	"	"	
Hexachlorobutadiene	ND	500	"	"	"	"	"	"	
Naphthalene	ND	100	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	500	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*101 %*		*75-125*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*91.6 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*103 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*89.4 %*		*75-125*	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-8-55 (E803110-02) Vapor Sampled: 30-Mar-18 Received: 30-Mar-18									
1,1-Difluoroethane (LCC)	ND	500	ug/m3	0.05	EC83003	30-Mar-18	30-Mar-18	H&P 8260SV	
Acetone	ND	5000	"	"	"	"	"	"	
Dichlorodifluoromethane (F12)	ND	500	"	"	"	"	"	"	
Chloromethane	ND	500	"	"	"	"	"	"	
Vinyl chloride	ND	50	"	"	"	"	"	"	
Bromomethane	ND	500	"	"	"	"	"	"	
Chloroethane	ND	500	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	500	"	"	"	"	"	"	
1,1-Dichloroethene	**3300**	500	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	**520**	500	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	500	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	500	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	500	"	"	"	"	"	"	
1,1-Dichloroethane	ND	500	"	"	"	"	"	"	
2,2-Dichloropropane	ND	500	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**580**	500	"	"	"	"	"	"	
Chloroform	**140**	100	"	"	"	"	"	"	
Bromochloromethane	ND	500	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	500	"	"	"	"	"	"	
1,1-Dichloropropene	ND	500	"	"	"	"	"	"	
Carbon tetrachloride	ND	100	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	100	"	"	"	"	"	"	
Benzene	ND	100	"	"	"	"	"	"	
Trichloroethene	**52000**	100	"	"	"	"	"	"	
1,2-Dichloropropane	ND	500	"	"	"	"	"	"	
Bromodichloromethane	ND	500	"	"	"	"	"	"	
Dibromomethane	ND	500	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	500	"	"	"	"	"	"	
Toluene	ND	1000	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	500	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	500	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	500	"	"	"	"	"	"	
1,3-Dichloropropane	ND	500	"	"	"	"	"	"	
Tetrachloroethene	**73000**	100	"	"	"	"	"	"	
Dibromochloromethane	ND	500	"	"	"	"	"	"	
Chlorobenzene	ND	100	"	"	"	"	"	"	
Ethylbenzene	ND	500	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	500	"	"	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-8-55 (E803110-02) Vapor Sampled: 30-Mar-18 Received: 30-Mar-18									
m,p-Xylene	ND	500	ug/m3	0.05	EC83003	30-Mar-18	30-Mar-18	H&P 8260SV	
o-Xylene	ND	500	"	"	"	"	"	"	
Styrene	ND	500	"	"	"	"	"	"	
Bromoform	ND	500	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	500	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	500	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	500	"	"	"	"	"	"	
n-Propylbenzene	ND	500	"	"	"	"	"	"	
Bromobenzene	ND	500	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	500	"	"	"	"	"	"	
2-Chlorotoluene	ND	500	"	"	"	"	"	"	
4-Chlorotoluene	ND	500	"	"	"	"	"	"	
tert-Butylbenzene	ND	500	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	500	"	"	"	"	"	"	
sec-Butylbenzene	ND	500	"	"	"	"	"	"	
p-Isopropyltoluene	ND	500	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	500	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	500	"	"	"	"	"	"	
n-Butylbenzene	ND	500	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	500	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	5000	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	500	"	"	"	"	"	"	
Hexachlorobutadiene	ND	500	"	"	"	"	"	"	
Naphthalene	ND	100	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	500	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*104 %*		*75-125*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*90.8 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*105 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*92.3 %*		*75-125*	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-8-55 REP (E803110-03) Vapor	**Sampled: 30-Mar-18**	**Received: 30-Mar-18**							
1,1-Difluoroethane (LCC)	ND	500	ug/m3	0.05	EC83003	30-Mar-18	30-Mar-18	H&P 8260SV	
Acetone	ND	5000	"	"	"	"	"	"	
Dichlorodifluoromethane (F12)	ND	500	"	"	"	"	"	"	
Chloromethane	ND	500	"	"	"	"	"	"	
Vinyl chloride	ND	50	"	"	"	"	"	"	
Bromomethane	ND	500	"	"	"	"	"	"	
Chloroethane	ND	500	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	500	"	"	"	"	"	"	
1,1-Dichloroethene	**3400**	500	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	**560**	500	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	500	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	500	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	500	"	"	"	"	"	"	
1,1-Dichloroethane	ND	500	"	"	"	"	"	"	
2,2-Dichloropropane	ND	500	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**600**	500	"	"	"	"	"	"	
Chloroform	**170**	100	"	"	"	"	"	"	
Bromochloromethane	ND	500	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	500	"	"	"	"	"	"	
1,1-Dichloropropene	ND	500	"	"	"	"	"	"	
Carbon tetrachloride	ND	100	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	100	"	"	"	"	"	"	
Benzene	ND	100	"	"	"	"	"	"	
Trichloroethene	**51000**	100	"	"	"	"	"	"	
1,2-Dichloropropane	ND	500	"	"	"	"	"	"	
Bromodichloromethane	ND	500	"	"	"	"	"	"	
Dibromomethane	ND	500	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	500	"	"	"	"	"	"	
Toluene	ND	1000	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	500	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	500	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	500	"	"	"	"	"	"	
1,3-Dichloropropane	ND	500	"	"	"	"	"	"	
Tetrachloroethene	**68000**	100	"	"	"	"	"	"	
Dibromochloromethane	ND	500	"	"	"	"	"	"	
Chlorobenzene	ND	100	"	"	"	"	"	"	
Ethylbenzene	ND	500	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	500	"	"	"	"	"	"	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-8-55 REP (E803110-03) Vapor Sampled: 30-Mar-18 Received: 30-Mar-18									
m,p-Xylene	ND	500	ug/m3	0.05	EC83003	30-Mar-18	30-Mar-18	H&P 8260SV	
o-Xylene	ND	500	"	"	"	"	"	"	
Styrene	ND	500	"	"	"	"	"	"	
Bromoform	ND	500	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	500	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	500	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	500	"	"	"	"	"	"	
n-Propylbenzene	ND	500	"	"	"	"	"	"	
Bromobenzene	ND	500	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	500	"	"	"	"	"	"	
2-Chlorotoluene	ND	500	"	"	"	"	"	"	
4-Chlorotoluene	ND	500	"	"	"	"	"	"	
tert-Butylbenzene	ND	500	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	500	"	"	"	"	"	"	
sec-Butylbenzene	ND	500	"	"	"	"	"	"	
p-Isopropyltoluene	ND	500	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	500	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	500	"	"	"	"	"	"	
n-Butylbenzene	ND	500	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	500	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	5000	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	500	"	"	"	"	"	"	
Hexachlorobutadiene	ND	500	"	"	"	"	"	"	
Naphthalene	ND	100	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	500	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*102 %*	*75-125*		"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*88.7 %*	*75-125*		"	"	"	"	
Surrogate: Toluene-d8		*103 %*	*75-125*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*85.7 %*	*75-125*		"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-8-28 (E803110-04) Vapor Sampled: 30-Mar-18 Received: 30-Mar-18									
1,1-Difluoroethane (LCC)	ND	100	ug/m3	0.01	EC83003	30-Mar-18	30-Mar-18	H&P 8260SV	
Acetone	**8800**	1000	"	"	"	"	"	"	
Dichlorodifluoromethane (F12)	ND	100	"	"	"	"	"	"	
Chloromethane	ND	100	"	"	"	"	"	"	
Vinyl chloride	ND	10	"	"	"	"	"	"	
Bromomethane	ND	100	"	"	"	"	"	"	
Chloroethane	ND	100	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	100	"	"	"	"	"	"	
1,1-Dichloroethene	**2200**	100	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	**380**	100	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	100	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	100	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	100	"	"	"	"	"	"	
1,1-Dichloroethane	ND	100	"	"	"	"	"	"	
2,2-Dichloropropane	ND	100	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**410**	100	"	"	"	"	"	"	
Chloroform	**130**	20	"	"	"	"	"	"	
Bromochloromethane	ND	100	"	"	"	"	"	"	
1,1,1-Trichloroethane	**180**	100	"	"	"	"	"	"	
1,1-Dichloropropene	ND	100	"	"	"	"	"	"	
Carbon tetrachloride	ND	20	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	20	"	"	"	"	"	"	
Benzene	**20**	20	"	"	"	"	"	"	
Trichloroethene	**45000**	100	"	0.05	"	"	"	"	
1,2-Dichloropropane	ND	100	"	0.01	"	"	"	"	
Bromodichloromethane	ND	100	"	"	"	"	"	"	
Dibromomethane	ND	100	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	100	"	"	"	"	"	"	
Toluene	ND	200	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	100	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	100	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	100	"	"	"	"	"	"	
1,3-Dichloropropane	ND	100	"	"	"	"	"	"	
Tetrachloroethene	**59000**	100	"	0.05	"	"	"	"	
Dibromochloromethane	ND	100	"	0.01	"	"	"	"	
Chlorobenzene	ND	20	"	"	"	"	"	"	
Ethylbenzene	ND	100	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	100	"	"	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-8-28 (E803110-04) Vapor Sampled: 30-Mar-18 Received: 30-Mar-18									
m,p-Xylene	ND	100	ug/m3	0.01	EC83003	30-Mar-18	30-Mar-18	H&P 8260SV	
o-Xylene	ND	100	"	"	"	"	"	"	
Styrene	ND	100	"	"	"	"	"	"	
Bromoform	ND	100	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	100	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	100	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	100	"	"	"	"	"	"	
n-Propylbenzene	ND	100	"	"	"	"	"	"	
Bromobenzene	ND	100	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	100	"	"	"	"	"	"	
2-Chlorotoluene	ND	100	"	"	"	"	"	"	
4-Chlorotoluene	ND	100	"	"	"	"	"	"	
tert-Butylbenzene	ND	100	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	100	"	"	"	"	"	"	
sec-Butylbenzene	ND	100	"	"	"	"	"	"	
p-Isopropyltoluene	ND	100	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	100	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	100	"	"	"	"	"	"	
n-Butylbenzene	ND	100	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	100	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	1000	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	100	"	"	"	"	"	"	
Hexachlorobutadiene	ND	100	"	"	"	"	"	"	
Naphthalene	ND	20	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	100	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*98.0 %*		*75-125*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*90.0 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*106 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*87.8 %*		*75-125*	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-8-17 (E803110-05) Vapor Sampled: 30-Mar-18 Received: 30-Mar-18									
1,1-Difluoroethane (LCC)	ND	500	ug/m3	0.05	EC83003	30-Mar-18	30-Mar-18	H&P 8260SV	
Acetone	ND	5000	"	"	"	"	"	"	
Dichlorodifluoromethane (F12)	ND	500	"	"	"	"	"	"	
Chloromethane	ND	500	"	"	"	"	"	"	
Vinyl chloride	ND	50	"	"	"	"	"	"	
Bromomethane	ND	500	"	"	"	"	"	"	
Chloroethane	ND	500	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	500	"	"	"	"	"	"	
1,1-Dichloroethene	**1300**	500	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	ND	500	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	500	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	500	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	500	"	"	"	"	"	"	
1,1-Dichloroethane	ND	500	"	"	"	"	"	"	
2,2-Dichloropropane	ND	500	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	500	"	"	"	"	"	"	
Chloroform	ND	100	"	"	"	"	"	"	
Bromochloromethane	ND	500	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	500	"	"	"	"	"	"	
1,1-Dichloropropene	ND	500	"	"	"	"	"	"	
Carbon tetrachloride	ND	100	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	100	"	"	"	"	"	"	
Benzene	ND	100	"	"	"	"	"	"	
Trichloroethene	**20000**	100	"	"	"	"	"	"	
1,2-Dichloropropane	ND	500	"	"	"	"	"	"	
Bromodichloromethane	ND	500	"	"	"	"	"	"	
Dibromomethane	ND	500	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	500	"	"	"	"	"	"	
Toluene	ND	1000	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	500	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	500	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	500	"	"	"	"	"	"	
1,3-Dichloropropane	ND	500	"	"	"	"	"	"	
Tetrachloroethene	**28000**	100	"	"	"	"	"	"	
Dibromochloromethane	ND	500	"	"	"	"	"	"	
Chlorobenzene	ND	100	"	"	"	"	"	"	
Ethylbenzene	ND	500	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	500	"	"	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-8-17 (E803110-05) Vapor Sampled: 30-Mar-18 Received: 30-Mar-18									
m,p-Xylene	ND	500	ug/m3	0.05	EC83003	30-Mar-18	30-Mar-18	H&P 8260SV	
o-Xylene	ND	500	"	"	"	"	"	"	
Styrene	ND	500	"	"	"	"	"	"	
Bromoform	ND	500	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	500	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	500	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	500	"	"	"	"	"	"	
n-Propylbenzene	ND	500	"	"	"	"	"	"	
Bromobenzene	ND	500	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	500	"	"	"	"	"	"	
2-Chlorotoluene	ND	500	"	"	"	"	"	"	
4-Chlorotoluene	ND	500	"	"	"	"	"	"	
tert-Butylbenzene	ND	500	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	500	"	"	"	"	"	"	
sec-Butylbenzene	ND	500	"	"	"	"	"	"	
p-Isopropyltoluene	ND	500	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	500	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	500	"	"	"	"	"	"	
n-Butylbenzene	ND	500	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	500	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	5000	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	500	"	"	"	"	"	"	
Hexachlorobutadiene	ND	500	"	"	"	"	"	"	
Naphthalene	ND	100	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	500	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*104 %*		*75-125*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*89.1 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*105 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*90.1 %*		*75-125*	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-4-75 (E803110-06) Vapor Sampled: 30-Mar-18 Received: 30-Mar-18									
1,1-Difluoroethane (LCC)	ND	500	ug/m3	0.05	EC83003	30-Mar-18	30-Mar-18	H&P 8260SV	
Acetone	ND	5000	"	"	"	"	"	"	
Dichlorodifluoromethane (F12)	ND	500	"	"	"	"	"	"	
Chloromethane	ND	500	"	"	"	"	"	"	
Vinyl chloride	ND	50	"	"	"	"	"	"	
Bromomethane	ND	500	"	"	"	"	"	"	
Chloroethane	ND	500	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	500	"	"	"	"	"	"	
1,1-Dichloroethene	**1600**	500	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	ND	500	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	500	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	500	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	500	"	"	"	"	"	"	
1,1-Dichloroethane	ND	500	"	"	"	"	"	"	
2,2-Dichloropropane	ND	500	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	500	"	"	"	"	"	"	
Chloroform	**120**	100	"	"	"	"	"	"	
Bromochloromethane	ND	500	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	500	"	"	"	"	"	"	
1,1-Dichloropropene	ND	500	"	"	"	"	"	"	
Carbon tetrachloride	ND	100	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	100	"	"	"	"	"	"	
Benzene	ND	100	"	"	"	"	"	"	
Trichloroethene	**17000**	100	"	"	"	"	"	"	
1,2-Dichloropropane	ND	500	"	"	"	"	"	"	
Bromodichloromethane	ND	500	"	"	"	"	"	"	
Dibromomethane	ND	500	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	500	"	"	"	"	"	"	
Toluene	ND	1000	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	500	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	500	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	500	"	"	"	"	"	"	
1,3-Dichloropropane	ND	500	"	"	"	"	"	"	
Tetrachloroethene	**34000**	100	"	"	"	"	"	"	
Dibromochloromethane	ND	500	"	"	"	"	"	"	
Chlorobenzene	ND	100	"	"	"	"	"	"	
Ethylbenzene	ND	500	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	500	"	"	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-4-75 (E803110-06) Vapor Sampled: 30-Mar-18 Received: 30-Mar-18									
m,p-Xylene	ND	500	ug/m3	0.05	EC83003	30-Mar-18	30-Mar-18	H&P 8260SV	
o-Xylene	ND	500	"	"	"	"	"	"	
Styrene	ND	500	"	"	"	"	"	"	
Bromoform	ND	500	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	500	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	500	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	500	"	"	"	"	"	"	
n-Propylbenzene	ND	500	"	"	"	"	"	"	
Bromobenzene	ND	500	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	500	"	"	"	"	"	"	
2-Chlorotoluene	ND	500	"	"	"	"	"	"	
4-Chlorotoluene	ND	500	"	"	"	"	"	"	
tert-Butylbenzene	ND	500	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	500	"	"	"	"	"	"	
sec-Butylbenzene	ND	500	"	"	"	"	"	"	
p-Isopropyltoluene	ND	500	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	500	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	500	"	"	"	"	"	"	
n-Butylbenzene	ND	500	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	500	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	5000	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	500	"	"	"	"	"	"	
Hexachlorobutadiene	ND	500	"	"	"	"	"	"	
Naphthalene	ND	100	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	500	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*96.9 %*		*75-125*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*81.7 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*106 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*88.3 %*		*75-125*	"	"	"	"	

H&P Mobile
Geochemistry Inc.

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-4-55 (E803110-07) Vapor Sampled: 30-Mar-18 Received: 30-Mar-18									
1,1-Difluoroethane (LCC)	ND	500	ug/m3	0.05	EC83003	30-Mar-18	30-Mar-18	H&P 8260SV	
Acetone	ND	5000	"	"	"	"	"	"	
Dichlorodifluoromethane (F12)	ND	500	"	"	"	"	"	"	
Chloromethane	ND	500	"	"	"	"	"	"	
Vinyl chloride	ND	50	"	"	"	"	"	"	
Bromomethane	ND	500	"	"	"	"	"	"	
Chloroethane	ND	500	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	500	"	"	"	"	"	"	
1,1-Dichloroethene	**1800**	500	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	ND	500	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	500	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	500	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	500	"	"	"	"	"	"	
1,1-Dichloroethane	ND	500	"	"	"	"	"	"	
2,2-Dichloropropane	ND	500	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	500	"	"	"	"	"	"	
Chloroform	**110**	100	"	"	"	"	"	"	
Bromochloromethane	ND	500	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	500	"	"	"	"	"	"	
1,1-Dichloropropene	ND	500	"	"	"	"	"	"	
Carbon tetrachloride	ND	100	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	100	"	"	"	"	"	"	
Benzene	ND	100	"	"	"	"	"	"	
Trichloroethene	**17000**	100	"	"	"	"	"	"	
1,2-Dichloropropane	ND	500	"	"	"	"	"	"	
Bromodichloromethane	ND	500	"	"	"	"	"	"	
Dibromomethane	ND	500	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	500	"	"	"	"	"	"	
Toluene	ND	1000	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	500	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	500	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	500	"	"	"	"	"	"	
1,3-Dichloropropane	ND	500	"	"	"	"	"	"	
Tetrachloroethene	**34000**	100	"	"	"	"	"	"	
Dibromochloromethane	ND	500	"	"	"	"	"	"	
Chlorobenzene	ND	100	"	"	"	"	"	"	
Ethylbenzene	ND	500	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	500	"	"	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-4-55 (E803110-07) Vapor Sampled: 30-Mar-18 Received: 30-Mar-18									
m,p-Xylene	ND	500	ug/m3	0.05	EC83003	30-Mar-18	30-Mar-18	H&P 8260SV	
o-Xylene	ND	500	"	"	"	"	"	"	
Styrene	ND	500	"	"	"	"	"	"	
Bromoform	ND	500	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	500	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	500	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	500	"	"	"	"	"	"	
n-Propylbenzene	ND	500	"	"	"	"	"	"	
Bromobenzene	ND	500	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	500	"	"	"	"	"	"	
2-Chlorotoluene	ND	500	"	"	"	"	"	"	
4-Chlorotoluene	ND	500	"	"	"	"	"	"	
tert-Butylbenzene	ND	500	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	500	"	"	"	"	"	"	
sec-Butylbenzene	ND	500	"	"	"	"	"	"	
p-Isopropyltoluene	ND	500	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	500	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	500	"	"	"	"	"	"	
n-Butylbenzene	ND	500	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	500	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	5000	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	500	"	"	"	"	"	"	
Hexachlorobutadiene	ND	500	"	"	"	"	"	"	
Naphthalene	ND	100	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	500	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*101 %*		*75-125*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*89.0 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*102 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*90.4 %*		*75-125*	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-4-27 (E803110-08) Vapor Sampled: 30-Mar-18 Received: 30-Mar-18									
1,1-Difluoroethane (LCC)	ND	200	ug/m3	0.02	EC83003	30-Mar-18	30-Mar-18	H&P 8260SV	
Acetone	**8000**	2000	"	"	"	"	"	"	
Dichlorodifluoromethane (F12)	ND	200	"	"	"	"	"	"	
Chloromethane	ND	200	"	"	"	"	"	"	
Vinyl chloride	ND	20	"	"	"	"	"	"	
Bromomethane	ND	200	"	"	"	"	"	"	
Chloroethane	ND	200	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	200	"	"	"	"	"	"	
1,1-Dichloroethene	**1400**	200	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	ND	200	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	200	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	200	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	200	"	"	"	"	"	"	
1,1-Dichloroethane	ND	200	"	"	"	"	"	"	
2,2-Dichloropropane	ND	200	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	200	"	"	"	"	"	"	
Chloroform	**100**	40	"	"	"	"	"	"	
Bromochloromethane	ND	200	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	200	"	"	"	"	"	"	
1,1-Dichloropropene	ND	200	"	"	"	"	"	"	
Carbon tetrachloride	ND	40	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	40	"	"	"	"	"	"	
Benzene	ND	40	"	"	"	"	"	"	
Trichloroethene	**15000**	40	"	"	"	"	"	"	
1,2-Dichloropropane	ND	200	"	"	"	"	"	"	
Bromodichloromethane	ND	200	"	"	"	"	"	"	
Dibromomethane	ND	200	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	200	"	"	"	"	"	"	
Toluene	ND	400	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	200	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	200	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	200	"	"	"	"	"	"	
1,3-Dichloropropane	ND	200	"	"	"	"	"	"	
Tetrachloroethene	**33000**	40	"	"	"	"	"	"	
Dibromochloromethane	ND	200	"	"	"	"	"	"	
Chlorobenzene	ND	40	"	"	"	"	"	"	
Ethylbenzene	ND	200	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	200	"	"	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-4-27 (E803110-08) Vapor Sampled: 30-Mar-18 Received: 30-Mar-18									
m,p-Xylene	ND	200	ug/m3	0.02	EC83003	30-Mar-18	30-Mar-18	H&P 8260SV	
o-Xylene	ND	200	"	"	"	"	"	"	
Styrene	ND	200	"	"	"	"	"	"	
Bromoform	ND	200	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	200	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	200	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	200	"	"	"	"	"	"	
n-Propylbenzene	ND	200	"	"	"	"	"	"	
Bromobenzene	ND	200	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	200	"	"	"	"	"	"	
2-Chlorotoluene	ND	200	"	"	"	"	"	"	
4-Chlorotoluene	ND	200	"	"	"	"	"	"	
tert-Butylbenzene	ND	200	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	200	"	"	"	"	"	"	
sec-Butylbenzene	ND	200	"	"	"	"	"	"	
p-Isopropyltoluene	ND	200	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	200	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	200	"	"	"	"	"	"	
n-Butylbenzene	ND	200	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	200	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	2000	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	200	"	"	"	"	"	"	
Hexachlorobutadiene	ND	200	"	"	"	"	"	"	
Naphthalene	ND	40	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	200	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*103 %*		*75-125*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*93.4 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*104 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*90.8 %*		*75-125*	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-4-12 (E804001-01) Vapor Sampled: 02-Apr-18 Received: 02-Apr-18									
1,1-Difluoroethane (LCC)	ND	200	ug/m3	0.02	ED80204	02-Apr-18	02-Apr-18	H&P 8260SV	
Acetone	ND	2000	"	"	"	"	"	"	
Dichlorodifluoromethane (F12)	ND	200	"	"	"	"	"	"	
Chloromethane	ND	200	"	"	"	"	"	"	
Vinyl chloride	ND	20	"	"	"	"	"	"	
Bromomethane	ND	200	"	"	"	"	"	"	
Chloroethane	ND	200	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	200	"	"	"	"	"	"	
1,1-Dichloroethene	**790**	200	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	ND	200	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	200	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	200	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	200	"	"	"	"	"	"	
1,1-Dichloroethane	ND	200	"	"	"	"	"	"	
2,2-Dichloropropane	ND	200	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	200	"	"	"	"	"	"	
Chloroform	**40**	40	"	"	"	"	"	"	
Bromochloromethane	ND	200	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	200	"	"	"	"	"	"	
1,1-Dichloropropene	ND	200	"	"	"	"	"	"	
Carbon tetrachloride	ND	40	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	40	"	"	"	"	"	"	
Benzene	ND	40	"	"	"	"	"	"	
Trichloroethene	**5800**	40	"	"	"	"	"	"	
1,2-Dichloropropane	ND	200	"	"	"	"	"	"	
Bromodichloromethane	ND	200	"	"	"	"	"	"	
Dibromomethane	ND	200	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	200	"	"	"	"	"	"	
Toluene	ND	400	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	200	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	200	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	200	"	"	"	"	"	"	
1,3-Dichloropropane	ND	200	"	"	"	"	"	"	
Tetrachloroethene	**24000**	40	"	"	"	"	"	"	
Dibromochloromethane	ND	200	"	"	"	"	"	"	
Chlorobenzene	ND	40	"	"	"	"	"	"	
Ethylbenzene	ND	200	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	200	"	"	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-4-12 (E804001-01) Vapor Sampled: 02-Apr-18 Received: 02-Apr-18									
m,p-Xylene	ND	200	ug/m3	0.02	ED80204	02-Apr-18	02-Apr-18	H&P 8260SV	
o-Xylene	ND	200	"	"	"	"	"	"	
Styrene	ND	200	"	"	"	"	"	"	
Bromoform	ND	200	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	200	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	200	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	200	"	"	"	"	"	"	
n-Propylbenzene	ND	200	"	"	"	"	"	"	
Bromobenzene	ND	200	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	200	"	"	"	"	"	"	
2-Chlorotoluene	ND	200	"	"	"	"	"	"	
4-Chlorotoluene	ND	200	"	"	"	"	"	"	
tert-Butylbenzene	ND	200	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	200	"	"	"	"	"	"	
sec-Butylbenzene	ND	200	"	"	"	"	"	"	
p-Isopropyltoluene	ND	200	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	200	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	200	"	"	"	"	"	"	
n-Butylbenzene	ND	200	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	200	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	2000	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	200	"	"	"	"	"	"	
Hexachlorobutadiene	ND	200	"	"	"	"	"	"	
Naphthalene	ND	40	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	200	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*106 %*		*75-125*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*87.4 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*104 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*87.0 %*		*75-125*	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-4-12 REP (E804001-02) Vapor	**Sampled: 02-Apr-18**	**Received: 02-Apr-18**							
1,1-Difluoroethane (LCC)	ND	200	ug/m3	0.02	ED80204	02-Apr-18	02-Apr-18	H&P 8260SV	
Acetone	ND	2000	"	"	"	"	"	"	
Dichlorodifluoromethane (F12)	ND	200	"	"	"	"	"	"	
Chloromethane	ND	200	"	"	"	"	"	"	
Vinyl chloride	ND	20	"	"	"	"	"	"	
Bromomethane	ND	200	"	"	"	"	"	"	
Chloroethane	ND	200	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	200	"	"	"	"	"	"	
1,1-Dichloroethene	**560**	200	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	ND	200	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	200	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	200	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	200	"	"	"	"	"	"	
1,1-Dichloroethane	ND	200	"	"	"	"	"	"	
2,2-Dichloropropane	ND	200	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	200	"	"	"	"	"	"	
Chloroform	ND	40	"	"	"	"	"	"	
Bromochloromethane	ND	200	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	200	"	"	"	"	"	"	
1,1-Dichloropropene	ND	200	"	"	"	"	"	"	
Carbon tetrachloride	ND	40	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	40	"	"	"	"	"	"	
Benzene	ND	40	"	"	"	"	"	"	
Trichloroethene	**4000**	40	"	"	"	"	"	"	
1,2-Dichloropropane	ND	200	"	"	"	"	"	"	
Bromodichloromethane	ND	200	"	"	"	"	"	"	
Dibromomethane	ND	200	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	200	"	"	"	"	"	"	
Toluene	ND	400	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	200	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	200	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	200	"	"	"	"	"	"	
1,3-Dichloropropane	ND	200	"	"	"	"	"	"	
Tetrachloroethene	**16000**	40	"	"	"	"	"	"	
Dibromochloromethane	ND	200	"	"	"	"	"	"	
Chlorobenzene	ND	40	"	"	"	"	"	"	
Ethylbenzene	ND	200	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	200	"	"	"	"	"	"	

H&P Mobile
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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-4-12 REP (E804001-02) Vapor Sampled: 02-Apr-18 Received: 02-Apr-18									
m,p-Xylene	ND	200	ug/m3	0.02	ED80204	02-Apr-18	02-Apr-18	H&P 8260SV	
o-Xylene	ND	200	"	"	"	"	"	"	
Styrene	ND	200	"	"	"	"	"	"	
Bromoform	ND	200	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	200	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	200	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	200	"	"	"	"	"	"	
n-Propylbenzene	ND	200	"	"	"	"	"	"	
Bromobenzene	ND	200	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	200	"	"	"	"	"	"	
2-Chlorotoluene	ND	200	"	"	"	"	"	"	
4-Chlorotoluene	ND	200	"	"	"	"	"	"	
tert-Butylbenzene	ND	200	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	200	"	"	"	"	"	"	
sec-Butylbenzene	ND	200	"	"	"	"	"	"	
p-Isopropyltoluene	ND	200	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	200	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	200	"	"	"	"	"	"	
n-Butylbenzene	ND	200	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	200	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	2000	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	200	"	"	"	"	"	"	
Hexachlorobutadiene	ND	200	"	"	"	"	"	"	
Naphthalene	ND	40	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	200	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*103 %*	*75-125*		"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*96.5 %*	*75-125*		"	"	"	"	
Surrogate: Toluene-d8		*104 %*	*75-125*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*90.1 %*	*75-125*		"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-1-80 (E804001-03) Vapor Sampled: 02-Apr-18 Received: 02-Apr-18									
1,1-Difluoroethane (LCC)	ND	500	ug/m3	0.05	ED80204	02-Apr-18	02-Apr-18	H&P 8260SV	
Acetone	ND	5000	"	"	"	"	"	"	
Dichlorodifluoromethane (F12)	ND	500	"	"	"	"	"	"	
Chloromethane	ND	500	"	"	"	"	"	"	
Vinyl chloride	ND	50	"	"	"	"	"	"	
Bromomethane	ND	500	"	"	"	"	"	"	
Chloroethane	ND	500	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	500	"	"	"	"	"	"	
1,1-Dichloroethene	**550**	500	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	**1800**	500	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	500	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	500	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	500	"	"	"	"	"	"	
1,1-Dichloroethane	ND	500	"	"	"	"	"	"	
2,2-Dichloropropane	ND	500	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**680**	500	"	"	"	"	"	"	
Chloroform	ND	100	"	"	"	"	"	"	
Bromochloromethane	ND	500	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	500	"	"	"	"	"	"	
1,1-Dichloropropene	ND	500	"	"	"	"	"	"	
Carbon tetrachloride	ND	100	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	100	"	"	"	"	"	"	
Benzene	ND	100	"	"	"	"	"	"	
Trichloroethene	**21000**	100	"	"	"	"	"	"	
1,2-Dichloropropane	ND	500	"	"	"	"	"	"	
Bromodichloromethane	ND	500	"	"	"	"	"	"	
Dibromomethane	ND	500	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	500	"	"	"	"	"	"	
Toluene	ND	1000	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	500	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	500	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	500	"	"	"	"	"	"	
1,3-Dichloropropane	ND	500	"	"	"	"	"	"	
Tetrachloroethene	**36000**	100	"	"	"	"	"	"	
Dibromochloromethane	ND	500	"	"	"	"	"	"	
Chlorobenzene	ND	100	"	"	"	"	"	"	
Ethylbenzene	ND	500	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	500	"	"	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-1-80 (E804001-03) Vapor Sampled: 02-Apr-18 Received: 02-Apr-18									
m,p-Xylene	ND	500	ug/m3	0.05	ED80204	02-Apr-18	02-Apr-18	H&P 8260SV	
o-Xylene	ND	500	"	"	"	"	"	"	
Styrene	ND	500	"	"	"	"	"	"	
Bromoform	ND	500	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	500	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	500	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	500	"	"	"	"	"	"	
n-Propylbenzene	ND	500	"	"	"	"	"	"	
Bromobenzene	ND	500	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	500	"	"	"	"	"	"	
2-Chlorotoluene	ND	500	"	"	"	"	"	"	
4-Chlorotoluene	ND	500	"	"	"	"	"	"	
tert-Butylbenzene	ND	500	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	500	"	"	"	"	"	"	
sec-Butylbenzene	ND	500	"	"	"	"	"	"	
p-Isopropyltoluene	ND	500	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	500	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	500	"	"	"	"	"	"	
n-Butylbenzene	ND	500	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	500	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	5000	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	500	"	"	"	"	"	"	
Hexachlorobutadiene	ND	500	"	"	"	"	"	"	
Naphthalene	ND	100	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	500	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*100 %*		*75-125*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*92.5 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*105 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*87.2 %*		*75-125*	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-1-52 (E804001-04) Vapor Sampled: 02-Apr-18 Received: 02-Apr-18									
1,1-Difluoroethane (LCC)	ND	500	ug/m3	0.05	ED80204	02-Apr-18	02-Apr-18	H&P 8260SV	
Acetone	ND	5000	"	"	"	"	"	"	
Dichlorodifluoromethane (F12)	ND	500	"	"	"	"	"	"	
Chloromethane	ND	500	"	"	"	"	"	"	
Vinyl chloride	ND	50	"	"	"	"	"	"	
Bromomethane	ND	500	"	"	"	"	"	"	
Chloroethane	ND	500	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	500	"	"	"	"	"	"	
1,1-Dichloroethene	ND	500	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	**1500**	500	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	500	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	500	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	500	"	"	"	"	"	"	
1,1-Dichloroethane	ND	500	"	"	"	"	"	"	
2,2-Dichloropropane	ND	500	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	500	"	"	"	"	"	"	
Chloroform	ND	100	"	"	"	"	"	"	
Bromochloromethane	ND	500	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	500	"	"	"	"	"	"	
1,1-Dichloropropene	ND	500	"	"	"	"	"	"	
Carbon tetrachloride	ND	100	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	100	"	"	"	"	"	"	
Benzene	ND	100	"	"	"	"	"	"	
Trichloroethene	**17000**	100	"	"	"	"	"	"	
1,2-Dichloropropane	ND	500	"	"	"	"	"	"	
Bromodichloromethane	ND	500	"	"	"	"	"	"	
Dibromomethane	ND	500	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	500	"	"	"	"	"	"	
Toluene	ND	1000	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	500	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	500	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	500	"	"	"	"	"	"	
1,3-Dichloropropane	ND	500	"	"	"	"	"	"	
Tetrachloroethene	**31000**	100	"	"	"	"	"	"	
Dibromochloromethane	ND	500	"	"	"	"	"	"	
Chlorobenzene	ND	100	"	"	"	"	"	"	
Ethylbenzene	ND	500	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	500	"	"	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-1-52 (E804001-04) Vapor Sampled: 02-Apr-18 Received: 02-Apr-18									
m,p-Xylene	ND	500	ug/m3	0.05	ED80204	02-Apr-18	02-Apr-18	H&P 8260SV	
o-Xylene	ND	500	"	"	"	"	"	"	
Styrene	ND	500	"	"	"	"	"	"	
Bromoform	ND	500	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	500	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	500	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	500	"	"	"	"	"	"	
n-Propylbenzene	ND	500	"	"	"	"	"	"	
Bromobenzene	ND	500	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	500	"	"	"	"	"	"	
2-Chlorotoluene	ND	500	"	"	"	"	"	"	
4-Chlorotoluene	ND	500	"	"	"	"	"	"	
tert-Butylbenzene	ND	500	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	500	"	"	"	"	"	"	
sec-Butylbenzene	ND	500	"	"	"	"	"	"	
p-Isopropyltoluene	ND	500	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	500	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	500	"	"	"	"	"	"	
n-Butylbenzene	ND	500	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	500	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	5000	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	500	"	"	"	"	"	"	
Hexachlorobutadiene	ND	500	"	"	"	"	"	"	
Naphthalene	ND	100	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	500	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*97.6 %*		*75-125*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*93.2 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*105 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*91.0 %*		*75-125*	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-1-42 (E804001-05) Vapor Sampled: 02-Apr-18 Received: 02-Apr-18									
1,1-Difluoroethane (LCC)	ND	200	ug/m3	0.02	ED80204	02-Apr-18	02-Apr-18	H&P 8260SV	
Acetone	**2600**	2000	"	"	"	"	"	"	
Dichlorodifluoromethane (F12)	ND	200	"	"	"	"	"	"	
Chloromethane	ND	200	"	"	"	"	"	"	
Vinyl chloride	ND	20	"	"	"	"	"	"	
Bromomethane	ND	200	"	"	"	"	"	"	
Chloroethane	ND	200	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	200	"	"	"	"	"	"	
1,1-Dichloroethene	**320**	200	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	**990**	200	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	200	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	200	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	200	"	"	"	"	"	"	
1,1-Dichloroethane	ND	200	"	"	"	"	"	"	
2,2-Dichloropropane	ND	200	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**330**	200	"	"	"	"	"	"	
Chloroform	**50**	40	"	"	"	"	"	"	
Bromochloromethane	ND	200	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	200	"	"	"	"	"	"	
1,1-Dichloropropene	ND	200	"	"	"	"	"	"	
Carbon tetrachloride	ND	40	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	40	"	"	"	"	"	"	
Benzene	ND	40	"	"	"	"	"	"	
Trichloroethene	**12000**	40	"	"	"	"	"	"	
1,2-Dichloropropane	ND	200	"	"	"	"	"	"	
Bromodichloromethane	ND	200	"	"	"	"	"	"	
Dibromomethane	ND	200	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	200	"	"	"	"	"	"	
Toluene	ND	400	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	200	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	200	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	200	"	"	"	"	"	"	
1,3-Dichloropropane	ND	200	"	"	"	"	"	"	
Tetrachloroethene	**21000**	40	"	"	"	"	"	"	
Dibromochloromethane	ND	200	"	"	"	"	"	"	
Chlorobenzene	ND	40	"	"	"	"	"	"	
Ethylbenzene	ND	200	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	200	"	"	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-1-42 (E804001-05) Vapor Sampled: 02-Apr-18 Received: 02-Apr-18									
m,p-Xylene	ND	200	ug/m3	0.02	ED80204	02-Apr-18	02-Apr-18	H&P 8260SV	
o-Xylene	ND	200	"	"	"	"	"	"	
Styrene	ND	200	"	"	"	"	"	"	
Bromoform	ND	200	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	200	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	200	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	200	"	"	"	"	"	"	
n-Propylbenzene	ND	200	"	"	"	"	"	"	
Bromobenzene	ND	200	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	200	"	"	"	"	"	"	
2-Chlorotoluene	ND	200	"	"	"	"	"	"	
4-Chlorotoluene	ND	200	"	"	"	"	"	"	
tert-Butylbenzene	ND	200	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	200	"	"	"	"	"	"	
sec-Butylbenzene	ND	200	"	"	"	"	"	"	
p-Isopropyltoluene	ND	200	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	200	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	200	"	"	"	"	"	"	
n-Butylbenzene	ND	200	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	200	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	2000	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	200	"	"	"	"	"	"	
Hexachlorobutadiene	ND	200	"	"	"	"	"	"	
Naphthalene	ND	40	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	200	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*93.0 %*		*75-125*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*91.9 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*104 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*91.1 %*		*75-125*	"	"	"	"	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-1-18 (E804001-06) Vapor Sampled: 02-Apr-18 Received: 02-Apr-18									
1,1-Difluoroethane (LCC)	ND	100	ug/m3	0.01	ED80204	02-Apr-18	02-Apr-18	H&P 8260SV	
Acetone	**3700**	1000	"	"	"	"	"	"	
Dichlorodifluoromethane (F12)	ND	100	"	"	"	"	"	"	
Chloromethane	ND	100	"	"	"	"	"	"	
Vinyl chloride	ND	10	"	"	"	"	"	"	
Bromomethane	ND	100	"	"	"	"	"	"	
Chloroethane	ND	100	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	100	"	"	"	"	"	"	
1,1-Dichloroethene	**220**	100	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	**950**	100	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	100	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	100	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	100	"	"	"	"	"	"	
1,1-Dichloroethane	ND	100	"	"	"	"	"	"	
2,2-Dichloropropane	ND	100	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	100	"	"	"	"	"	"	
Chloroform	**30**	20	"	"	"	"	"	"	
Bromochloromethane	ND	100	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	100	"	"	"	"	"	"	
1,1-Dichloropropene	ND	100	"	"	"	"	"	"	
Carbon tetrachloride	ND	20	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	20	"	"	"	"	"	"	
Benzene	ND	20	"	"	"	"	"	"	
Trichloroethene	**5900**	20	"	"	"	"	"	"	
1,2-Dichloropropane	ND	100	"	"	"	"	"	"	
Bromodichloromethane	ND	100	"	"	"	"	"	"	
Dibromomethane	ND	100	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	100	"	"	"	"	"	"	
Toluene	ND	200	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	100	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	100	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	100	"	"	"	"	"	"	
1,3-Dichloropropane	ND	100	"	"	"	"	"	"	
Tetrachloroethene	**11000**	20	"	"	"	"	"	"	
Dibromochloromethane	ND	100	"	"	"	"	"	"	
Chlorobenzene	ND	20	"	"	"	"	"	"	
Ethylbenzene	ND	100	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	100	"	"	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV-B2-1-18 (E804001-06) Vapor Sampled: 02-Apr-18 Received: 02-Apr-18									
m,p-Xylene	ND	100	ug/m3	0.01	ED80204	02-Apr-18	02-Apr-18	H&P 8260SV	
o-Xylene	ND	100	"	"	"	"	"	"	
Styrene	ND	100	"	"	"	"	"	"	
Bromoform	ND	100	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	100	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	100	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	100	"	"	"	"	"	"	
n-Propylbenzene	ND	100	"	"	"	"	"	"	
Bromobenzene	ND	100	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	100	"	"	"	"	"	"	
2-Chlorotoluene	ND	100	"	"	"	"	"	"	
4-Chlorotoluene	ND	100	"	"	"	"	"	"	
tert-Butylbenzene	ND	100	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	100	"	"	"	"	"	"	
sec-Butylbenzene	ND	100	"	"	"	"	"	"	
p-Isopropyltoluene	ND	100	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	100	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	100	"	"	"	"	"	"	
n-Butylbenzene	ND	100	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	100	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	1000	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	100	"	"	"	"	"	"	
Hexachlorobutadiene	ND	100	"	"	"	"	"	"	
Naphthalene	ND	20	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	100	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*91.4 %*		*75-125*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*93.1 %*		*75-125*	"	"	"	"	
Surrogate: Toluene-d8		*106 %*		*75-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*90.8 %*		*75-125*	"	"	"	"	

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EC82807 - EPA 5030										
Blank (EC82807-BLK1)				Prepared & Analyzed: 28-Mar-18						
1,1-Difluoroethane (LCC)	ND	100	ug/m3							
Acetone	ND	1000	"							
Dichlorodifluoromethane (F12)	ND	100	"							
Chloromethane	ND	100	"							
Vinyl chloride	ND	10	"							
Bromomethane	ND	100	"							
Chloroethane	ND	100	"							
Trichlorofluoromethane (F11)	ND	100	"							
1,1-Dichloroethene	ND	100	"							
1,1,2 Trichlorotrifluoroethane (F113)	ND	100	"							
Methylene chloride (Dichloromethane)	ND	100	"							
Methyl tertiary-butyl ether (MTBE)	ND	100	"							
trans-1,2-Dichloroethene	ND	100	"							
1,1-Dichloroethane	ND	100	"							
2,2-Dichloropropane	ND	100	"							
cis-1,2-Dichloroethene	ND	100	"							
Chloroform	ND	20	"							
Bromochloromethane	ND	100	"							
1,1,1-Trichloroethane	ND	100	"							
1,1-Dichloropropene	ND	100	"							
Carbon tetrachloride	ND	20	"							
1,2-Dichloroethane (EDC)	ND	20	"							
Benzene	ND	20	"							
Trichloroethene	ND	20	"							
1,2-Dichloropropane	ND	100	"							
Bromodichloromethane	ND	100	"							
Dibromomethane	ND	100	"							
cis-1,3-Dichloropropene	ND	100	"							
Toluene	ND	200	"							
trans-1,3-Dichloropropene	ND	100	"							
1,1,2-Trichloroethane	ND	100	"							
1,2-Dibromoethane (EDB)	ND	100	"							
1,3-Dichloropropane	ND	100	"							
Tetrachloroethene	ND	20	"							

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Volatile Organic Compounds by H&P 8260SV - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EC82807 - EPA 5030										
Blank (EC82807-BLK1)				Prepared & Analyzed: 28-Mar-18						
Dibromochloromethane	ND	100	ug/m3							
Chlorobenzene	ND	20	"							
Ethylbenzene	ND	100	"							
1,1,1,2-Tetrachloroethane	ND	100	"							
m,p-Xylene	ND	100	"							
o-Xylene	ND	100	"							
Styrene	ND	100	"							
Bromoform	ND	100	"							
Isopropylbenzene (Cumene)	ND	100	"							
1,1,2,2-Tetrachloroethane	ND	100	"							
1,2,3-Trichloropropane	ND	100	"							
n-Propylbenzene	ND	100	"							
Bromobenzene	ND	100	"							
1,3,5-Trimethylbenzene	ND	100	"							
2-Chlorotoluene	ND	100	"							
4-Chlorotoluene	ND	100	"							
tert-Butylbenzene	ND	100	"							
1,2,4-Trimethylbenzene	ND	100	"							
sec-Butylbenzene	ND	100	"							
p-Isopropyltoluene	ND	100	"							
1,3-Dichlorobenzene	ND	100	"							
1,4-Dichlorobenzene	ND	100	"							
n-Butylbenzene	ND	100	"							
1,2-Dichlorobenzene	ND	100	"							
1,2-Dibromo-3-chloropropane	ND	1000	"							
1,2,4-Trichlorobenzene	ND	100	"							
Hexachlorobutadiene	ND	100	"							
Naphthalene	ND	20	"							
1,2,3-Trichlorobenzene	ND	100	"							
Surrogate: Dibromofluoromethane	*536*		*"*	*500*		*107*	*75-125*			
Surrogate: 1,2-Dichloroethane-d4	*471*		*"*	*500*		*94.3*	*75-125*			
Surrogate: Toluene-d8	*520*		*"*	*500*		*104*	*75-125*			
Surrogate: 4-Bromofluorobenzene	*458*		*"*	*500*		*91.7*	*75-125*			

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Volatile Organic Compounds by H&P 8260SV - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EC82807 - EPA 5030										
LCS (EC82807-BS1)				Prepared & Analyzed: 28-Mar-18						
Dichlorodifluoromethane (F12)	3600	500	ug/m3	5000		71.8	70-130			
Vinyl chloride	4200	50	"	5000		83.5	70-130			
Chloroethane	4600	500	"	5000		91.3	70-130			
Trichlorofluoromethane (F11)	4300	500	"	5000		86.4	70-130			
1,1-Dichloroethene	5400	500	"	5000		107	70-130			
1,1,2 Trichlorotrifluoroethane (F113)	5500	500	"	5000		109	70-130			
Methylene chloride (Dichloromethane)	5100	500	"	5000		103	70-130			
trans-1,2-Dichloroethene	5500	500	"	5000		110	70-130			
1,1-Dichloroethane	5000	500	"	5000		100	70-130			
cis-1,2-Dichloroethene	5400	500	"	5000		109	70-130			
Chloroform	5100	100	"	5000		102	70-130			
1,1,1-Trichloroethane	4600	500	"	5000		92.8	70-130			
Carbon tetrachloride	4700	100	"	5000		94.4	70-130			
1,2-Dichloroethane (EDC)	4900	100	"	5000		97.0	70-130			
Benzene	5100	100	"	5000		102	70-130			
Trichloroethene	5500	100	"	5000		110	70-130			
Toluene	4700	1000	"	5000		94.6	70-130			
1,1,2-Trichloroethane	5400	500	"	5000		108	70-130			
Tetrachloroethene	5500	100	"	5000		110	70-130			
Ethylbenzene	5400	500	"	5000		107	70-130			
1,1,1,2-Tetrachloroethane	5500	500	"	5000		110	70-130			
m,p-Xylene	11000	500	"	10000		105	70-130			
o-Xylene	5200	500	"	5000		104	70-130			
1,1,2,2-Tetrachloroethane	4800	500	"	5000		95.8	70-130			
Surrogate: Dibromofluoromethane	*2570*		*"*	*2500*		*103*	*75-125*			
Surrogate: 1,2-Dichloroethane-d4	*2240*		*"*	*2500*		*89.6*	*75-125*			
Surrogate: Toluene-d8	*2710*		*"*	*2500*		*108*	*75-125*			
Surrogate: 4-Bromofluorobenzene	*2410*		*"*	*2500*		*96.5*	*75-125*			

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EC82903 - EPA 5030										
Blank (EC82903-BLK1)				Prepared & Analyzed: 29-Mar-18						
1,1-Difluoroethane (LCC)	ND	100	ug/m3							
Acetone	ND	1000	"							
Dichlorodifluoromethane (F12)	ND	100	"							
Chloromethane	ND	100	"							
Vinyl chloride	ND	10	"							
Bromomethane	ND	100	"							
Chloroethane	ND	100	"							
Trichlorofluoromethane (F11)	ND	100	"							
1,1-Dichloroethene	ND	100	"							
1,1,2 Trichlorotrifluoroethane (F113)	ND	100	"							
Methylene chloride (Dichloromethane)	ND	100	"							
Methyl tertiary-butyl ether (MTBE)	ND	100	"							
trans-1,2-Dichloroethene	ND	100	"							
1,1-Dichloroethane	ND	100	"							
2,2-Dichloropropane	ND	100	"							
cis-1,2-Dichloroethene	ND	100	"							
Chloroform	ND	20	"							
Bromochloromethane	ND	100	"							
1,1,1-Trichloroethane	ND	100	"							
1,1-Dichloropropene	ND	100	"							
Carbon tetrachloride	ND	20	"							
1,2-Dichloroethane (EDC)	ND	20	"							
Benzene	ND	20	"							
Trichloroethene	ND	20	"							
1,2-Dichloropropane	ND	100	"							
Bromodichloromethane	ND	100	"							
Dibromomethane	ND	100	"							
cis-1,3-Dichloropropene	ND	100	"							
Toluene	ND	200	"							
trans-1,3-Dichloropropene	ND	100	"							
1,1,2-Trichloroethane	ND	100	"							
1,2-Dibromoethane (EDB)	ND	100	"							
1,3-Dichloropropane	ND	100	"							
Tetrachloroethene	ND	20	"							

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Volatile Organic Compounds by H&P 8260SV - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EC82903 - EPA 5030										
Blank (EC82903-BLK1)				Prepared & Analyzed: 29-Mar-18						
Dibromochloromethane	ND	100	ug/m3							
Chlorobenzene	ND	20	"							
Ethylbenzene	ND	100	"							
1,1,1,2-Tetrachloroethane	ND	100	"							
m,p-Xylene	ND	100	"							
o-Xylene	ND	100	"							
Styrene	ND	100	"							
Bromoform	ND	100	"							
Isopropylbenzene (Cumene)	ND	100	"							
1,1,2,2-Tetrachloroethane	ND	100	"							
1,2,3-Trichloropropane	ND	100	"							
n-Propylbenzene	ND	100	"							
Bromobenzene	ND	100	"							
1,3,5-Trimethylbenzene	ND	100	"							
2-Chlorotoluene	ND	100	"							
4-Chlorotoluene	ND	100	"							
tert-Butylbenzene	ND	100	"							
1,2,4-Trimethylbenzene	ND	100	"							
sec-Butylbenzene	ND	100	"							
p-Isopropyltoluene	ND	100	"							
1,3-Dichlorobenzene	ND	100	"							
1,4-Dichlorobenzene	ND	100	"							
n-Butylbenzene	ND	100	"							
1,2-Dichlorobenzene	ND	100	"							
1,2-Dibromo-3-chloropropane	ND	1000	"							
1,2,4-Trichlorobenzene	ND	100	"							
Hexachlorobutadiene	ND	100	"							
Naphthalene	ND	20	"							
1,2,3-Trichlorobenzene	ND	100	"							
Surrogate: Dibromofluoromethane	*523*		*"*	*500*		*105*	*75-125*			
Surrogate: 1,2-Dichloroethane-d4	*446*		*"*	*500*		*89.3*	*75-125*			
Surrogate: Toluene-d8	*514*		*"*	*500*		*103*	*75-125*			
Surrogate: 4-Bromofluorobenzene	*452*		*"*	*500*		*90.3*	*75-125*			

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Volatile Organic Compounds by H&P 8260SV - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EC82903 - EPA 5030										
LCS (EC82903-BS1)				Prepared & Analyzed: 29-Mar-18						
Dichlorodifluoromethane (F12)	3600	500	ug/m3	5000		71.2	70-130			
Vinyl chloride	4400	50	"	5000		87.9	70-130			
Chloroethane	4400	500	"	5000		88.7	70-130			
Trichlorofluoromethane (F11)	3600	500	"	5000		71.3	70-130			
1,1-Dichloroethene	5100	500	"	5000		102	70-130			
1,1,2 Trichlorotrifluoroethane (F113)	5400	500	"	5000		108	70-130			
Methylene chloride (Dichloromethane)	5100	500	"	5000		102	70-130			
trans-1,2-Dichloroethene	5600	500	"	5000		112	70-130			
1,1-Dichloroethane	5000	500	"	5000		100	70-130			
cis-1,2-Dichloroethene	5400	500	"	5000		108	70-130			
Chloroform	5000	100	"	5000		100	70-130			
1,1,1-Trichloroethane	4700	500	"	5000		93.8	70-130			
Carbon tetrachloride	4800	100	"	5000		96.6	70-130			
1,2-Dichloroethane (EDC)	4900	100	"	5000		97.0	70-130			
Benzene	5000	100	"	5000		100	70-130			
Trichloroethene	5400	100	"	5000		108	70-130			
Toluene	4600	1000	"	5000		93.0	70-130			
1,1,2-Trichloroethane	5600	500	"	5000		112	70-130			
Tetrachloroethene	5600	100	"	5000		113	70-130			
Ethylbenzene	5400	500	"	5000		108	70-130			
1,1,1,2-Tetrachloroethane	5700	500	"	5000		113	70-130			
m,p-Xylene	11000	500	"	10000		106	70-130			
o-Xylene	5200	500	"	5000		105	70-130			
1,1,2,2-Tetrachloroethane	5000	500	"	5000		101	70-130			
Surrogate: Dibromofluoromethane	*2540*		*"*	*2500*		*102*	*75-125*			
Surrogate: 1,2-Dichloroethane-d4	*2360*		*"*	*2500*		*94.4*	*75-125*			
Surrogate: Toluene-d8	*2710*		*"*	*2500*		*109*	*75-125*			
Surrogate: 4-Bromofluorobenzene	*2550*		*"*	*2500*		*102*	*75-125*			

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ERM - Irvine	Project: ERM032718-L6A	
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Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EC83003 - EPA 5030										
Blank (EC83003-BLK1)				Prepared & Analyzed: 30-Mar-18						
1,1-Difluoroethane (LCC)	ND	100	ug/m3							
Acetone	ND	1000	"							
Dichlorodifluoromethane (F12)	ND	100	"							
Chloromethane	ND	100	"							
Vinyl chloride	ND	10	"							
Bromomethane	ND	100	"							
Chloroethane	ND	100	"							
Trichlorofluoromethane (F11)	ND	100	"							
1,1-Dichloroethene	ND	100	"							
1,1,2 Trichlorotrifluoroethane (F113)	ND	100	"							
Methylene chloride (Dichloromethane)	ND	100	"							
Methyl tertiary-butyl ether (MTBE)	ND	100	"							
trans-1,2-Dichloroethene	ND	100	"							
1,1-Dichloroethane	ND	100	"							
2,2-Dichloropropane	ND	100	"							
cis-1,2-Dichloroethene	ND	100	"							
Chloroform	ND	20	"							
Bromochloromethane	ND	100	"							
1,1,1-Trichloroethane	ND	100	"							
1,1-Dichloropropene	ND	100	"							
Carbon tetrachloride	ND	20	"							
1,2-Dichloroethane (EDC)	ND	20	"							
Benzene	ND	20	"							
Trichloroethene	ND	20	"							
1,2-Dichloropropane	ND	100	"							
Bromodichloromethane	ND	100	"							
Dibromomethane	ND	100	"							
cis-1,3-Dichloropropene	ND	100	"							
Toluene	ND	200	"							
trans-1,3-Dichloropropene	ND	100	"							
1,1,2-Trichloroethane	ND	100	"							
1,2-Dibromoethane (EDB)	ND	100	"							
1,3-Dichloropropane	ND	100	"							
Tetrachloroethene	ND	20	"							

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
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760-804-9678 Phone
760-804-9159 Fax

ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EC83003 - EPA 5030										
Blank (EC83003-BLK1)				Prepared & Analyzed: 30-Mar-18						
Dibromochloromethane	ND	100	ug/m3							
Chlorobenzene	ND	20	"							
Ethylbenzene	ND	100	"							
1,1,1,2-Tetrachloroethane	ND	100	"							
m,p-Xylene	ND	100	"							
o-Xylene	ND	100	"							
Styrene	ND	100	"							
Bromoform	ND	100	"							
Isopropylbenzene (Cumene)	ND	100	"							
1,1,2,2-Tetrachloroethane	ND	100	"							
1,2,3-Trichloropropane	ND	100	"							
n-Propylbenzene	ND	100	"							
Bromobenzene	ND	100	"							
1,3,5-Trimethylbenzene	ND	100	"							
2-Chlorotoluene	ND	100	"							
4-Chlorotoluene	ND	100	"							
tert-Butylbenzene	ND	100	"							
1,2,4-Trimethylbenzene	ND	100	"							
sec-Butylbenzene	ND	100	"							
p-Isopropyltoluene	ND	100	"							
1,3-Dichlorobenzene	ND	100	"							
1,4-Dichlorobenzene	ND	100	"							
n-Butylbenzene	ND	100	"							
1,2-Dichlorobenzene	ND	100	"							
1,2-Dibromo-3-chloropropane	ND	1000	"							
1,2,4-Trichlorobenzene	ND	100	"							
Hexachlorobutadiene	ND	100	"							
Naphthalene	ND	20	"							
1,2,3-Trichlorobenzene	ND	100	"							
Surrogate: Dibromofluoromethane	*508*		*"*	*500*		*102*	*75-125*			
Surrogate: 1,2-Dichloroethane-d4	*445*		*"*	*500*		*89.0*	*75-125*			
Surrogate: Toluene-d8	*522*		*"*	*500*		*104*	*75-125*			
Surrogate: 4-Bromofluorobenzene	*450*		*"*	*500*		*89.9*	*75-125*			

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EC83003 - EPA 5030										
LCS (EC83003-BS1)				Prepared & Analyzed: 30-Mar-18						
Dichlorodifluoromethane (F12)	3700	500	ug/m3	5000		75.0	70-130			
Vinyl chloride	4500	50	"	5000		91.0	70-130			
Chloroethane	4900	500	"	5000		98.7	70-130			
Trichlorofluoromethane (F11)	4000	500	"	5000		80.9	70-130			
1,1-Dichloroethene	5400	500	"	5000		108	70-130			
1,1,2 Trichlorotrifluoroethane (F113)	5600	500	"	5000		112	70-130			
Methylene chloride (Dichloromethane)	5100	500	"	5000		102	70-130			
trans-1,2-Dichloroethene	5800	500	"	5000		116	70-130			
1,1-Dichloroethane	5100	500	"	5000		102	70-130			
cis-1,2-Dichloroethene	5600	500	"	5000		111	70-130			
Chloroform	5000	100	"	5000		101	70-130			
1,1,1-Trichloroethane	4800	500	"	5000		96.0	70-130			
Carbon tetrachloride	4900	100	"	5000		98.2	70-130			
1,2-Dichloroethane (EDC)	4700	100	"	5000		94.0	70-130			
Benzene	5100	100	"	5000		102	70-130			
Trichloroethene	5600	100	"	5000		112	70-130			
Toluene	4700	1000	"	5000		94.0	70-130			
1,1,2-Trichloroethane	5300	500	"	5000		105	70-130			
Tetrachloroethene	5700	100	"	5000		115	70-130			
Ethylbenzene	5300	500	"	5000		107	70-130			
1,1,1,2-Tetrachloroethane	5300	500	"	5000		107	70-130			
m,p-Xylene	10000	500	"	10000		104	70-130			
o-Xylene	5100	500	"	5000		102	70-130			
1,1,2,2-Tetrachloroethane	4600	500	"	5000		91.5	70-130			
Surrogate: Dibromofluoromethane	*2510*		"	*2500*		*101*	*75-125*			
Surrogate: 1,2-Dichloroethane-d4	*2220*		"	*2500*		*88.9*	*75-125*			
Surrogate: Toluene-d8	*2680*		"	*2500*		*107*	*75-125*			
Surrogate: 4-Bromofluorobenzene	*2510*		"	*2500*		*100*	*75-125*			

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Volatile Organic Compounds by H&P 8260SV - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch ED80204 - EPA 5030										
Blank (ED80204-BLK1)				Prepared & Analyzed: 02-Apr-18						
1,1-Difluoroethane (LCC)	ND	100	ug/m3							
Acetone	ND	1000	"							
Dichlorodifluoromethane (F12)	ND	100	"							
Chloromethane	ND	100	"							
Vinyl chloride	ND	10	"							
Bromomethane	ND	100	"							
Chloroethane	ND	100	"							
Trichlorofluoromethane (F11)	ND	100	"							
1,1-Dichloroethene	ND	100	"							
1,1,2 Trichlorotrifluoroethane (F113)	ND	100	"							
Methylene chloride (Dichloromethane)	ND	100	"							
Methyl tertiary-butyl ether (MTBE)	ND	100	"							
trans-1,2-Dichloroethene	ND	100	"							
1,1-Dichloroethane	ND	100	"							
2,2-Dichloropropane	ND	100	"							
cis-1,2-Dichloroethene	ND	100	"							
Chloroform	ND	20	"							
Bromochloromethane	ND	100	"							
1,1,1-Trichloroethane	ND	100	"							
1,1-Dichloropropene	ND	100	"							
Carbon tetrachloride	ND	20	"							
1,2-Dichloroethane (EDC)	ND	20	"							
Benzene	ND	20	"							
Trichloroethene	ND	20	"							
1,2-Dichloropropane	ND	100	"							
Bromodichloromethane	ND	100	"							
Dibromomethane	ND	100	"							
cis-1,3-Dichloropropene	ND	100	"							
Toluene	ND	200	"							
trans-1,3-Dichloropropene	ND	100	"							
1,1,2-Trichloroethane	ND	100	"							
1,2-Dibromoethane (EDB)	ND	100	"							
1,3-Dichloropropane	ND	100	"							
Tetrachloroethene	ND	20	"							

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch ED80204 - EPA 5030										
Blank (ED80204-BLK1)				Prepared & Analyzed: 02-Apr-18						
Dibromochloromethane	ND	100	ug/m3							
Chlorobenzene	ND	20	"							
Ethylbenzene	ND	100	"							
1,1,1,2-Tetrachloroethane	ND	100	"							
m,p-Xylene	ND	100	"							
o-Xylene	ND	100	"							
Styrene	ND	100	"							
Bromoform	ND	100	"							
Isopropylbenzene (Cumene)	ND	100	"							
1,1,2,2-Tetrachloroethane	ND	100	"							
1,2,3-Trichloropropane	ND	100	"							
n-Propylbenzene	ND	100	"							
Bromobenzene	ND	100	"							
1,3,5-Trimethylbenzene	ND	100	"							
2-Chlorotoluene	ND	100	"							
4-Chlorotoluene	ND	100	"							
tert-Butylbenzene	ND	100	"							
1,2,4-Trimethylbenzene	ND	100	"							
sec-Butylbenzene	ND	100	"							
p-Isopropyltoluene	ND	100	"							
1,3-Dichlorobenzene	ND	100	"							
1,4-Dichlorobenzene	ND	100	"							
n-Butylbenzene	ND	100	"							
1,2-Dichlorobenzene	ND	100	"							
1,2-Dibromo-3-chloropropane	ND	1000	"							
1,2,4-Trichlorobenzene	ND	100	"							
Hexachlorobutadiene	ND	100	"							
Naphthalene	ND	20	"							
1,2,3-Trichlorobenzene	ND	100	"							
Surrogate: Dibromofluoromethane	*513*		*"*	*500*		*103*	*75-125*			
Surrogate: 1,2-Dichloroethane-d4	*459*		*"*	*500*		*91.7*	*75-125*			
Surrogate: Toluene-d8	*536*		*"*	*500*		*107*	*75-125*			
Surrogate: 4-Bromofluorobenzene	*442*		*"*	*500*		*88.4*	*75-125*			

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch ED80204 - EPA 5030										
LCS (ED80204-BS1)				Prepared & Analyzed: 02-Apr-18						
Dichlorodifluoromethane (F12)	3700	500	ug/m3	5000		73.1	70-130			
Vinyl chloride	4500	50	"	5000		89.9	70-130			
Chloroethane	4600	500	"	5000		92.6	70-130			
Trichlorofluoromethane (F11)	3800	500	"	5000		75.7	70-130			
1,1-Dichloroethene	5500	500	"	5000		110	70-130			
1,1,2 Trichlorotrifluoroethane (F113)	5600	500	"	5000		111	70-130			
Methylene chloride (Dichloromethane)	5300	500	"	5000		107	70-130			
trans-1,2-Dichloroethene	5800	500	"	5000		117	70-130			
1,1-Dichloroethane	5200	500	"	5000		104	70-130			
cis-1,2-Dichloroethene	5700	500	"	5000		114	70-130			
Chloroform	5200	100	"	5000		104	70-130			
1,1,1-Trichloroethane	4800	500	"	5000		96.8	70-130			
Carbon tetrachloride	5000	100	"	5000		99.6	70-130			
1,2-Dichloroethane (EDC)	5100	100	"	5000		102	70-130			
Benzene	5200	100	"	5000		105	70-130			
Trichloroethene	5600	100	"	5000		112	70-130			
Toluene	4800	1000	"	5000		96.1	70-130			
1,1,2-Trichloroethane	5600	500	"	5000		112	70-130			
Tetrachloroethene	5600	100	"	5000		111	70-130			
Ethylbenzene	5000	500	"	5000		101	70-130			
1,1,1,2-Tetrachloroethane	5500	500	"	5000		109	70-130			
m,p-Xylene	11000	500	"	10000		105	70-130			
o-Xylene	5200	500	"	5000		103	70-130			
1,1,2,2-Tetrachloroethane	5100	500	"	5000		102	70-130			
Surrogate: Dibromofluoromethane	*2620*		*"*	*2500*		*105*	*75-125*			
Surrogate: 1,2-Dichloroethane-d4	*2250*		*"*	*2500*		*90.1*	*75-125*			
Surrogate: Toluene-d8	*2720*		*"*	*2500*		*109*	*75-125*			
Surrogate: 4-Bromofluorobenzene	*2430*		*"*	*2500*		*97.4*	*75-125*			

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ERM - Irvine	Project: ERM032718-L6A	
1920 Main Street, Suite 300	Project Number: 0444392 / 233 Kansas Ave	Reported:
Irvine, CA 92614	Project Manager: Ms. Maggie Tymkow	10-Apr-18 13:20

Notes and Definitions

LCC	Leak Check Compound
ND	Analyte NOT DETECTED at or above the reporting limit
MDL	Method Detection Limit
%REC	Percent Recovery
RPD	Relative Percent Difference

All soil results are reported in wet weight.

Appendix

H&P Mobile Geochemistry, Inc. is approved as an Environmental Testing Laboratory and Mobile Laboratory in accordance with the DoD-ELAP Program and ISO/IEC 17025:2005 programs through PJLA, accreditation number 69070 for EPA Method TO-15, H&P Method TO-15, EPA Method 8260B and H&P 8260SV.

H&P is approved by the State of Arizona as an Environmental Testing Laboratory and Mobile Laboratory, certification numbers AZM758 and AZ0779.

H&P is approved by the State of California as an Environmental Laboratory and Mobile Laboratory in conformance with the Environmental Laboratory Accreditation Program (ELAP) for the category of Volatile and Semi-Volatile Organic Chemistry of Hazardous Waste, certification numbers 2740, 2741, 2743, 2744, 2745, 2754 & 2930.

H&P is approved by the State of Florida Department of Health under the National Environmental Laboratory Accreditation Conference (NELAC) certification number E871100.

The complete list of stationary and mobile laboratory certifications along with the fields of testing (FOTs) and analyte lists are available at www.handpmg.com/about/certifications.

H&P Mobile Geochemistry, Inc.

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& Field Office - Signal Hill, CA
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VAPOR / AIR Chain of Custody

DATE: 3/28/18
Page 1 of 2

Lab Client and Project Information

Lab Client/Consultant: ERM	Project Name / #: 0444392
Lab Client Project Manager: Maggie Tymkow	Project Location: 2333 Kansas Ave
Lab Client Address: 1920 Main St Suite 300	Report E-Mail(s):
Lab Client City, State, Zip: Irvine, CA 92614	
Phone Number: 949-623-4700	

Sample Receipt (Lab Use Only)

Date Rec'd: 3/28/18	Control #: 180327-[illegible]
H&P Project #: ERM032718-L6	
Lab Work Order #: E803092	
Sample Intact: ☐ Yes ☐ No ☐ See Notes Below	
Receipt Gauge ID:	Temp:
Outside Lab:	
Receipt Notes/Tracking #:	
	Lab PM Initials:

Reporting Requirements

☒ Standard Report ☐ Level III ☐ Level IV
☐ Excel EDD ☐ Other EDD:________
☐ CA Geotracker Global ID:________

Turnaround Time

☐ 5-7 day Stnd ☐ 24-Hr Rush
☐ 3-day Rush ☑ Mobile Lab
☐ 48-Hr Rush ☐ Other:____

Sampler Information

Sampler(s): S. Mayfield
Signature: [signature]
Date: 3.28.18

Additional Instructions to Laboratory:

EC82807

* *Preferred VOC units (please choose one):*
☐ μg/L ☒ μg/m³ ☐ ppbv ☐ ppmv

SAMPLE NAME	FIELD POINT NAME (if applicable)	DATE mm/dd/yy	TIME 24hr clock	SAMPLE TYPE Indoor Air (IA), Ambient Air (AA), Subslab (SS), Soil Vapor (SV)	CONTAINER SIZE & TYPE 400mL/1L/6L Summa, Tedlar, Tube, etc.	CONTAINER ID (###)	Lab use only: Receipt Vac	VOCs Standard Full List ☒ 8260SV ☐ TO-15 + Acetone, 1,4-Dioxane	VOCs Short List / Project List ☐ 8260SV ☐ TO-15	Oxygenates ☐ 8260SV ☐ TO-15	Naphthalene ☐ 8260SV ☐ TO-15	TPHv as Gas ☐ 8260SVm ☐ TO-15m	Aromatic/Aliphatic Fractions ☐ 8260SVm ☐ TO-15m	Leak Check Compound ☒ DFA ☐ IPA ☐ He	Methane by EPA 8015m	Fixed Gases by ASTM D1945 ☐ CO2 ☐ O2 ☐ N2				
~~SV-B1-4-32~~		~~3/28/18~~	~~7:53~~	~~SV~~	~~6L Summa~~			~~X~~						~~X~~						
~~SV-B1-4-22~~		↓	~~8:16~~	↓	↓			~~X~~						~~X~~						
~~SV-B1-5-80~~			~~8:51~~					~~X~~						~~X~~						
~~SV-B1-5-53~~			~~9:12~~					~~X~~						~~X~~						
~~SV-B1-5-33~~			~~9:35~~					~~X~~						~~X~~						
~~SV-B1-5-22~~			~~10:22~~					~~X~~						~~X~~						
SV-B2-7-80			11:15					X						X						
SV-B2-7-80 REP			11:44					X						X						
SV-B2-7-13			12:18					X						X						
SV-B2-6-55		↓	12:54	↓	↓			X						X						

Approved/Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:
Manuel Leon	ERM	3/30/2018	15:32	[signature]	H&P	3/28/18	
Approved/Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:
Approved/Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:

**Approval constitutes as authorization to proceed with analysis and acceptance of conditions on back*

H&P Mobile Geochemistry, Inc.

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VAPOR / AIR Chain of Custody

DATE: 3/28/18
Page 2 of 2

Lab Client and Project Information

Lab Client/Consultant: ERM	Project Name / #: 0444392
Lab Client Project Manager: Maggi Tymkow	Project Location: 233 Kansas Ave
Lab Client Address: 1920 Main St Suite 300	Report E-Mail(s):
Lab Client City, State, Zip: Irvine, CA 92614	
Phone Number: 949-623-4700	

Sample Receipt (Lab Use Only)

Date Rec'd: 3/28/18	Control #: 180279.00/.01
H&P Project # ERM032718-L6	
Lab Work Order # E803092	
Sample Intact: ☐ Yes ☐ No ☐ See Notes Below	
Receipt Gauge ID:	Temp:
Outside Lab:	
Receipt Notes/Tracking #:	
	Lab PM Initials:

Reporting Requirements

☒ Standard Report ☐ Level III ☐ Level IV
☐ Excel EDD ☐ Other EDD:
☐ CA Geotracker Global ID:

Turnaround Time

☐ 5-7 day Stnd ☐ 24-Hr Rush
☐ 3-day Rush ☒ Mobile Lab
☐ 48-Hr Rush ☐ Other:

Sampler Information

Sampler(s): S. Mayfield
Signature: [signature]
Date: 3.28.18

Additional Instructions to Laboratory: EC82807

* Preferred VOC units (please choose one): ☐ µg/L ☒ µg/m³ ☐ ppbv ☐ ppmv

SAMPLE NAME	FIELD POINT NAME (if applicable)	DATE mm/dd/yy	TIME 24hr clock	SAMPLE TYPE Indoor Air (IA), Ambient Air (AA), Subslab (SS), Soil Vapor (SV)	CONTAINER SIZE & TYPE 400mL/1L/6L Summa, Tedlar, Tube, etc.	CONTAINER ID (###)	Lab use only: Receipt Vac	VOCs Standard Full List ☒ 8260SV ☐ TO-15 (+ Acetone/Naphthalene)	VOCs Short List / Project List ☐ 8260SV ☐ TO-15	Oxygenates ☐ 8260SV ☐ TO-15	Naphthalene ☐ 8260SV ☐ TO-15	TPHv as Gas ☐ 8260SVm ☐ TO-15m	Aromatic/Aliphatic Fractions ☐ 8260SVm ☐ TO-15m	Leak Check Compound ☒ DFA ☐ IPA ☐ He	Methane by EPA 8015m	Fixed Gases by ASTM D1945 ☐ CO2 ☐ O2 ☐ N2				
SV-B2-7-28		3/28/18	13:23	SV	Glass			X						X						
SV-B2-6.28		↓	13:47	↓	↓			X						X						
SV-B2-6.16		↓	14:08	↓	↓			X						X						
SV-B2-3.63		↓	14:36	↓	↓			X						X						

[initials] 3/30/18 - 1532

Approved/Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:
[signature]	ERM	3/30/18	1532	[signature]	H&P	3/28/18	

*Approval constitutes as authorization to proceed with analysis and acceptance of conditions on back

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VAPOR / AIR Chain of Custody

DATE: 3/29/18
Page 1 of 2

Lab Client and Project Information

Lab Client/Consultant: ERM	Project Name / #: 0444392
Lab Client Project Manager: Maggie Tymkow	Project Location: 233 Kansas Ave
Lab Client Address: 1970 Main St. Suite 300	Report E-Mail(s):
Lab Client City, State, Zip: Irvine, CA 92614	
Phone Number: 949-623-4700	

Reporting Requirements
- [x] Standard Report ☐ Level III ☐ Level IV
- ☐ Excel EDD ☐ Other EDD:_____
- ☐ CA Geotracker Global ID:_____

Turnaround Time
- ☐ 5-7 day Stnd ☐ 24-Hr Rush
- ☐ 3-day Rush ☒ Mobile Lab
- ☐ 48-Hr Rush ☐ Other:____

Sampler Information
- Sampler(s): S. Mayfield
- Signature:
- Date: 3.30.18

Sample Receipt (Lab Use Only)

Date Rec'd: 3/29/18	Control #: 180279-06/07
H&P Project #	ERM032718-L6
Lab Work Order #	E803097
Sample Intact: ☐ Yes ☐ No ☐ See Notes Below	
Receipt Gauge ID:	Temp:
Outside Lab:	
Receipt Notes/Tracking #:	Lab PM Initials:

Additional Instructions to Laboratory:

EC62903

** Preferred VOC units (please choose one):*
☐ µg/L ☒ µg/m³ ☐ ppbv ☐ ppmv

SAMPLE NAME	FIELD POINT NAME (if applicable)	DATE mm/dd/yy	TIME 24hr clock	SAMPLE TYPE Indoor Air (IA), Ambient Air (AA), Subslab (SS), Soil Vapor (SV)	CONTAINER SIZE & TYPE 400mL/1L/6L Summa, Tedlar, Tube, etc.	CONTAINER ID (###)	Lab use only: Receipt Vac	VOCs Standard Full List / Acetone ☒ 8260SV ☐ TO-15	VOCs Short List / Project List ☐ 8260SV ☐ TO-15	Oxygenates ☐ 8260SV ☐ TO-15	Naphthalene ☐ 8260SV ☐ TO-15	TPHv as Gas ☐ 8260SVm ☐ TO-15m	Aromatic/Aliphatic Fractions ☐ 8260SVm ☐ TO-15m	Leak Check Compound ☒ DFA ☐ IPA ☐ He	Methane by EPA 8015m	Fixed Gases by ASTM D1945 ☐ CO2 ☐ O2 ☐ N2				
SV-B2-7-55		3/29/18	7:51	SV	6L Summa			X						X						
SV-B2-6-80			8:17					X						X						
SV-B2-3-54			8:45					X						X						
SV-B2-3-29			9:11					X						X						
SV-B2-3-17			9:36					X						X						
SV-B2-5-80			10:05					X						X						
SV-B2-5-80REP			10:32					X						X						
SV-B2-5-55			10:58					X						X						
SV-B2-5-39			11:22					X						X						
SV-B2-5-15			12:07					X						X						

Approved/Relinquished by: Marivel Lion	Company: Eram	Date: 3/30/18	Time: 1532	Received by:	Company: H&P	Date: 3/29/18	Time:
Approved/Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:
Approved/Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:

**Approval constitutes as authorization to proceed with analysis and acceptance of conditions on back*

H&P Mobile Geochemistry, Inc.
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VAPOR / AIR Chain of Custody

DATE: 3/29/18
Page 2 of 2

Lab Client and Project Information

Lab Client/Consultant: ERM	Project Name / #: 0444292
Lab Client Project Manager: Maggie Tymkow	Project Location: 233 Kansas Ave
Lab Client Address: 1920 Main St Suite 300	Report E-Mail(s):
Lab Client City, State, Zip: Irvine, CA 92614	
Phone Number: 949-623-4700	

Sample Receipt (Lab Use Only)

Date Rec'd: 2/29/18	Control #: 180279.00/.01
H&P Project #: ERM032718-L6	
Lab Work Order #: E803097	
Sample Intact: ☐ Yes ☐ No ☐ See Notes Below	
Receipt Gauge ID:	Temp:
Outside Lab:	
Receipt Notes/Tracking #:	
Lab PM Initials:	

Reporting Requirements

☒ Standard Report ☐ Level III ☐ Level IV
☐ Excel EDD ☐ Other EDD:____________
☐ CA Geotracker Global ID:____________

Turnaround Time

☐ 5-7 day Stnd ☐ 24-Hr Rush
☐ 3-day Rush ☒ Mobile Lab
☐ 48-Hr Rush ☐ Other:_____

Sampler Information

Sampler(s): S. Maxfield
Signature: [signature]
Date: 3-30-18

Additional Instructions to Laboratory:

EC82903

*** Preferred VOC units (please choose one):**
☐ µg/L ☒ µg/m³ ☐ ppbv ☐ ppmv

SAMPLE NAME	FIELD POINT NAME (if applicable)	DATE mm/dd/yy	TIME 24hr clock	SAMPLE TYPE Indoor Air (IA), Ambient Air (AA), Subslab (SS), Soil Vapor (SV)	CONTAINER SIZE & TYPE 400mL/1L/6L Summa, Tedlar, Tube, etc.	CONTAINER ID (###)	Lab use only: Receipt Vac	VOCs Standard Full List ☒ 8260SV ☐ TO-15 + Acetone + IPA + Isopropyl Alcohol	VOCs Short List / Project List ☐ 8260SV ☐ TO-15	Oxygenates ☐ 8260SV ☐ TO-15	Naphthalene ☐ 8260SV ☐ TO-15	TPHv as Gas ☐ 8260SVm ☐ TO-15m	Aromatic/Aliphatic Fractions ☐ 8260SVm ☐ TO-15m	Leak Check Compound ☒ DFA ☐ IPA ☐ He	Methane by EPA 8015m	Fixed Gases by ASTM D1945 ☐ CO2 ☐ O2 ☐ N2				
SV-B2-2-65		3/29/18	12:46	SV	Glass S.			X						X						
SV-B2-2-46		↓	13:10	↓	↓			X						X						
SV-B2-2-80		↓	13:37	↓	↓			X						X						
SV-B2-2-19		↓	14:04	↓	↓			X						X						

3/30/18 1532

Approved/Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:
Manuel Lew	ERM	3/30/18	1532	[signature]	H&P		

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VAPOR / AIR Chain of Custody

DATE: 3/30/18
Page 1 of 1

Lab Client and Project Information

Lab Client/Consultant: ERM	Project Name / #: 0144392
Lab Client Project Manager: Maggie Trimbeau	Project Location: 233 Kansas Ave
Lab Client Address: 1920 Main St Suite 300	Report E-Mail(s):
Lab Client City, State, Zip: Irvine, CA 92614	
Phone Number: 949-623-4700	

Reporting Requirements
☒ Standard Report ☐ Level III ☐ Level IV
☐ Excel EDD ☐ Other EDD:_____
☐ CA Geotracker Global ID:_____

Turnaround Time
☐ 5-7 day Stnd ☐ 24-Hr Rush
☐ 3-day Rush ☒ Mobile Lab
☐ 48-Hr Rush ☐ Other:____

Sampler Information
Sampler(s): S. Mayfield
Signature:
Date: 3.30.18

Sample Receipt (Lab Use Only)

Date Rec'd: 3/30/18 Control #: 180279-001A
H&P Project # ERM032718-L6
Lab Work Order # E803110
Sample Intact: ☐ Yes ☐ No ☐ See Notes Below
Receipt Gauge ID: Temp:
Outside Lab:
Receipt Notes/Tracking #:
Lab PM Initials:

Additional Instructions to Laboratory: EC83003

** Preferred VOC units (please choose one):*
☐ µg/L ☒ µg/m³ ☐ ppbv ☐ ppmv

SAMPLE NAME	FIELD POINT NAME (if applicable)	DATE mm/dd/yy	TIME 24hr clock	SAMPLE TYPE Indoor Air (IA), Ambient Air (AA), Subslab (SS), Soil Vapor (SV)	CONTAINER SIZE & TYPE 400mL/1L/6L Summa, Tedlar, Tube, etc.	CONTAINER ID (###)	Lab use only: Receipt Vac	VOCs Standard Full List ☒ 8260SV ☐ TO-15	VOCs Short List / Project List 4 ☐ 8260SV ☐ TO-15	Oxygenates ☐ 8260SV ☐ TO-15	Naphthalene ☐ 8260SV ☐ TO-15	TPHv as Gas ☐ 8260SVm ☐ TO-15m	Aromatic/Aliphatic Fractions ☐ 8260SVm ☐ TO-15m	Leak Check Compound ☒ DFA ☐ IPA ☐ He	Methane by EPA 8015m	Fixed Gases by ASTM D1945 ☐ CO2 ☐ O2 ☐ N2				
SV-B2-8-80		3/30/18	11:36	SV	6L Summa			X						X						
SV-B2-8-55			11:57					X						X						
SV-B2-8-55 DUP			12:27					X						X						
SV-B2-8-20			12:49					X						X						
SV-B2-8-17			14:03					X						X						
SV-B2-4-75			14:24					X						X						
SV-B2-4-55			14:46					X						X						
SV-B2-4-27			15:26					X						X						

3/30/18 - 1535

Approved/Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:
Manuel Leon	ERM	3/30/18	1535		H&P		
Approved/Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:
Approved/Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:

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VAPOR / AIR Chain of Custody

DATE: 4/2/18
Page 1 of 1

Lab Client and Project Information

Lab Client/Consultant: ERM	Project Name / #: 0444392
Lab Client Project Manager: Maggie Tymkow	Project Location: 233 Kansas Ave
Lab Client Address: 1920 Main St. Suite 300	Report E-Mail(s):
Lab Client City, State, Zip: Irvine, CA 92614	
Phone Number: 949-623-4700	

Sample Receipt (Lab Use Only)

Date Rec'd: 4/2/18	Control #: 180279.00/01
H&P Project # ERM032718-L6	
Lab Work Order # E804001	
Sample Intact: ☐ Yes ☐ No ☐ See Notes Below	
Receipt Gauge ID:	Temp:
Outside Lab:	
Receipt Notes/Tracking #:	
Lab PM Initials:	

Reporting Requirements

☒ Standard Report ☐ Level III ☐ Level IV
☐ Excel EDD ☐ Other EDD:______
☐ CA Geotracker Global ID:______

Turnaround Time

☐ 5-7 day Stnd ☐ 24-Hr Rush
☐ 3-day Rush ☒ Mobile Lab
☐ 48-Hr Rush ☐ Other:____

Sampler Information

Sampler(s): S. Mayfield
Signature: [signature]
Date: 4.2.18

Additional Instructions to Laboratory:

ED80204

*** Preferred VOC units (please choose one):**

☐ µg/L ☒ µg/m³ ☐ ppbv ☐ ppmv

SAMPLE NAME	FIELD POINT NAME (if applicable)	DATE mm/dd/yy	TIME 24hr clock	SAMPLE TYPE Indoor Air (IA), Ambient Air (AA), Subslab (SS), Soil Vapor (SV)	CONTAINER SIZE & TYPE 400mL/1L/6L Summa, Tedlar, Tube, etc.	CONTAINER ID (###)	Lab use only: Receipt Vac	VOCs Standard Full List ☒ 8260SV ☐ TO-15 (+Acetone, 4/2/18)	VOCs Short List / Project List ☐ 8260SV ☐ TO-15	Oxygenates ☐ 8260SV ☐ TO-15	Naphthalene ☐ 8260SV ☐ TO-15	TPHv as Gas ☐ 8260SVm ☐ TO-15m	Aromatic/Aliphatic Fractions ☐ 8260SVm ☐ TO-15m	Leak Check Compound ☒ DFA ☐ IPA ☐ He	Methane by EPA 8015m	Fixed Gases by ASTM D1945 ☐ CO2 ☐ O2 ☐ N2			
SV-B2-4-12		4/2/18	7:24	SV	6 (gas)			X						X					
SV-B2-4-12 REP		↓	7:51	↓	↓			X						X					
SV-B2-1-80		↓	8:11	↓	↓			X						X					
SV-B2-1-52		↓	8:33	↓	↓			X						X					
SV-B2-1-42		↓	9:02	↓	↓			X						X					
SV-B2-1-18		↓	9:32	↓	↓			X						X					

Approved/Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:
Maggie Tymkow	ERM	4/2/18	9:45	[signature]	H&P	4/2/18	

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Appendix 6A1, Rev 5/23/2016, Effective 5/23/2016

Mobile Geochemistry Inc.

FMS004
Revision: 4
Revised: 3/22/2017
Effective: 3/24/2017
Page 1 of 1

Log Sheet: Soil Vapor Sampling with Syringe

H&P Project #: ERM032718-L6/Tech Date: 3.28.18

Site Address: 233 Kansas st., El Segundo Page: 1 of 2

Consultant: ERM H&P Rep(s): S. mayfield

Consultant Rep(s): Manuel T. Chu

Reviewed: DM

Scanned: TTorres

Equipment Info
Inline Gauge ID#: /
Pump ID#: 026

Purge Volume Information
PV Amount: 3PV
PV Includes: ☐ Tubing ☐ Sand 40% ☒ Dry Bent 50%

Leak Check Compound ☒ 1,1-DFA ☐ 1,1,1,2-TFA ☐ IPA ☐ Other:
A cloth saturated with LCC is placed around tubing connections and probe seal. This is done for all samples unless otherwise noted.

Resample Key
RS = Resample
RD = for Dilution
RL = for LCC Fail

	Sample Information				Probe Specs							Purge & Collection Information							
	Point ID	Syringe ID	Sample Volume (cc)	Sample Time	Probe Depth (ft)	Tubing Length (ft)	Tubing OD (in.)	Sand Ht (in.)	Sand Dia (in.)	Dry Bent. Ht (in.)	Dry Bent. Dia (in.)	Shut In Test 60 sec (✓)	Leak Check (✓)	Purge Vol (mL)	Purge Flow Rate (mL/min)	Pump Time (min:sec)	Sample Flow Rate (mL/min)	ProbeVac ☒ Hg ☐ H_2O	
1	~~SV-B1-4-32~~	~~268~~	~~50~~	~~0753~~	~~32'~~	~~34'~~	~~1/4"~~	~~24"~~	~~8"~~	~~48"~~	~~8"~~	✓	✓	~~83523~~	~~5L/m~~	~~16'42"~~	~~200~~	~~1"~~	
2	~~SV-B1-4-22~~	~~263~~	~~50~~	~~0816~~	~~22'~~	~~23'~~	~~1/4~~	~~24~~	~~8~~	~~48~~	~~8~~	✓	✓	~~83378~~	~~5L/m~~	~~16'41"~~	~~200~~	~~1"~~	
3	~~SV-B1-5-80~~	~~209~~	~~50~~	~~0851~~	~~80~~	~~82'~~	~~1/4~~	~~24~~	~~8~~	~~48~~	~~8~~	✓	✓	~~84220~~	~~5L/m~~	~~16'51"~~	~~200~~	~~2"~~ (4m)	*A
4	~~SV-B1-5-53~~	~~255~~	~~50~~	~~0912~~	~~53'~~	~~55'~~	~~1/4~~	~~24~~	~~8~~	~~48~~	~~8~~	✓	✓	~~83828~~	~~5L/m~~	~~16'46"~~	~~200~~	~~1"~~	*A
5	~~SV-B1-5-33~~	~~232~~	~~50~~	~~0935~~	~~33'~~	~~35'~~	~~1/4~~	~~24~~	~~8~~	~~48~~	~~8~~	✓	✓	~~83537~~	~~5L/m~~	~~16'42"~~	~~200~~	~~1"~~	*A
6	~~SV-B1-5-22~~	~~218~~	~~50~~	~~1022~~	~~22'~~	~~24'~~	~~1/4~~	~~24~~	~~8~~	~~48~~	~~8~~	✓	✓	~~83378~~	~~5L/m~~	~~16'41"~~	~~200~~	~~2"~~	*A
7	~~SV-B1-5-33 RD~~	~~179~~	~~50~~	~~0958~~	~~33'~~	~~35'~~	~~1/4~~	~~24~~	~~8~~	~~48~~	~~8~~	✓	✓	~~83587~~	~~—~~	~~—~~	~~200~~	~~1"~~	
8	SV-B2-7-80	247	50	1115	80'	82'	1/4	24	8	48	8	✓	✓	84220	5L/m	16'51"	200	1"	
9	SV-B2-7-80 Rep	268	50	1144	80'	82'	1/4	24	8	48	8	✓	✓	84290	—	—	200	1"	
10	SV-B2-7-55	209	50	No sample	55'	57'	1/4	24	8	48	8	✓	✓						*C
11	SV-B2-7-28	218	50	1323	28'	30'	1/4	24	8	48	8	✓	✓	83464	2L/m*	41'44"	200	45" H_2O	*B
12	SV-B2-7-13	255	50	1218	13'	15'	1/4	24	8	~~48~~	8	✓	✓	83365	5L/m	16"39"	200	2"	

Site Notes such as weather, visitors, scope deviations, health & safety issues, etc. (When making sample specific notes, reference the line number above):

*A: All valves in well-box B1-5 were open when opened well-box

*B: Due to reduced flow, lowered Purge rate to 2L/m.

*Replaced old valves w/ new 1-ways w/ stopcocks on all probes

*C: Low flow. Flow at 300ml/m. No sample on 3.28; will try on 3.29 *S. mayfield sampled probes

H&P Mobile Geochemistry Inc.

FMS004
Revision: 4
Revised: 3/22/2017
Effective: 3/24/2017
Page 1 of 1

Log Sheet: Soil Vapor Sampling with Syringe

H&P Project #: ERM032718-L6/Tech Date: 3·28·18

Site Address: 223 Kansas St., El Segundo Page: 2 of 2

Consultant: ERM H&P Rep(s): S. Mayfield

Consultant Rep(s): Manuel T. Chu

Reviewed: DB

Scanned: TTorres

Equipment Info	Purge Volume Information	Leak Check Compound
Inline Gauge ID#: —	PV Amount: 3PV	☒ 1,1-DFA
Pump ID#: 026	PV Includes: ☐ Tubing	☐ 1,1,1,2-TFA
	☐ Sand 40%	☐ IPA
	☐ Dry Bent 50%	☐ Other:
		A cloth saturated with LCC is placed around tubing connections and probe seal. This is done for all samples unless otherwise noted.

Resample Key
RS = Resample
RD = for Dilution
RL = for LCC Fail

	Sample Information				Probe Specs							Purge & Collection Information							
	Point ID	Syringe ID	Sample Volume (cc)	Sample Time	Probe Depth (ft)	Tubing Length (ft)	Tubing OD (in.)	Sand Ht (in.)	Sand Dia (in.)	Dry Bent. Ht (in.)	Dry Bent. Dia (in.)	Shut In Test 60 sec (✓)	Leak Check (✓)	Purge Vol (mL)	Purge Flow Rate (mL/min)	Pump Time (min:sec)	Sample Flow Rate (mL/min)	ProbeVac ☒ Hg ☐ H_2O	
1	SV-B2-6-80 (6m) 179	—	—	NO sample	80'	82'	1/4"	24"	8"	48"	8"	✓	✓	84220	5L/m	16'51	200	—	*B
2	SV-B2-6-55	179	50	1254	55'	57'	1/4"	24"	8"	48"	8"	✓	✓	83857	5L/m	16'46"	200	2"	
3	SV-B2-6-28	263	50	1347	28'	30'	1/4	24	8	48	8	✓	✓	83464	5L/m	16'41"	200	1"	
4	SV-B2-6-16	232	50	1408	16'	18'	1/4	24	8	48	8	✓	✓	83290	5L/m	16'39"	200	1"	
5	SV-B2-3-~~80~~ (5m) 63	209	50	1436	~~80~~ (5m) 63'	~~82~~ (5m) 65'	1/4	24	8	48	8	✓	✓	~~84220~~ (5m)	5L/m	~~16'51"~~ 16'48"	200	2.5"	*A
6																			
7																			
8																			
9																			
10																			
11																			
12																			

Site Notes such as weather, visitors, scope deviations, health & safety issues, etc. (When making sample specific notes, reference the line number above):

*A: B2-3-63: PV is 83973ml = 16'48". Caught before overpurging.

*B: No sample; will try 3.29

*Replaced all valves

H&P Mobile Geochemistry Inc.

FMS004
Revision: 4
Revised: 3/22/2017
Effective: 3/24/2017
Page 1 of 1

Log Sheet: Soil Vapor Sampling with Syringe

H&P Project #: ERM032718-L6/Tech Date: 3·29·18
Site Address: 233 Kansas Ave, El Segundo Page: 1 of 2
Consultant: ERM H&P Rep(s): S. Mayfield
Consultant Rep(s): Manuel T. Chu
Reviewed: DB
Scanned: TTorres

Equipment Info
Inline Gauge ID#: —
Pump ID#: 026

Purge Volume Information
PV Amount: 3PV
PV Includes: ☐ Tubing ☐ Sand 40% ☐ Dry Bent 50%

Leak Check Compound
A cloth saturated with LCC is placed around tubing connections and probe seal. This is done for all samples unless otherwise noted.
☒ 1,1-DFA ☐ 1,1,1,2-TFA ☐ IPA ☐ Other:

Resample Key
RS = Resample
RD = for Dilution
RL = for LCC Fail

	Sample Information				Probe Specs							Purge & Collection Information							
	Point ID	Syringe ID	Sample Volume (cc)	Sample Time	Probe Depth (ft)	Tubing Length (ft)	Tubing OD (in.)	Sand Ht (in.)	Sand Dia (in.)	Dry Bent. Ht (in.)	Dry Bent. Dia (in.)	Shut In Test 60 sec (✓)	Leak Check (✓)	Purge Vol (mL)	Purge Flow Rate (mL/min)	Pump Time (min:sec)	Sample Flow Rate (mL/min)	ProbeVac ☒ Hg ☐ H_2O	
1	SV-B2-7-55	255	50	0751	55'	57'	1/4"	24"	8"	48"	8"	✓	✓	831ml	200ml/m	4'9"	200	50" H_2O	*A
2	SV-B2-6-80	232	50	0817	80'	82'	1/4	24	8	48	8	✓	✓	1191	200ml/m	5'57"	200	55" H_2O	*A
3	SV-B2-3-54	209	50	0845	54'	56'	1/4	24	8	48	8	✓	✓	83842	5L/m	16'46"	200	1" Hg	
4	SV-B2-3-29	268 247	100 50	0911	29'	31'	1/4	24	8	48	8	✓	✓	83479	5L/m	16'42"	200	1"	
5	SV-B2-3-17	268	50	0936	17'	19'	1/4	24	8	48	8	✓	✓	83305	5L/m	16'40"	200	1"	*B
6	SV-B2-5-80	232	50	1005	80'	82'	1/4	24	8	48	8	✓	✓	84220	5L/m	16'51"	200	2"	*C →*D
7	SV-B2-5-55	218	50	1058	55'	57'	1/4	24	8	48	8	✓	✓	83857	5L/m	16'46"	200	1"	*B *C
8	SV-B2-5-80-Rep	255	50	1032	80'	82'	1/4	24	8	48	8	✓	✓	84270	5L/m	—	200	2"	
9	SV-B2-5-39	247 209	100	1122	39'	41'	1/4	24	8	48	8	✓	✓	83624	5L/m	16'48"	200	1"	*C
10	SV-B2-5-15	268 232	100	1207	15'	17'	1/4	24	8	48	8	✓	✓	83395	5L/m	16'39"	200	1"	*C
11	SV-B2-2-80	263	50	1337	80'	82'	1/4	24	8	48	8	✓	✓	1191*	100-200 ml/m	*	<200	100"+	*E
12	SV-B2-2-65	179	50	1246	65'	67'	1/4	24	8	48	8	✓	✓	84002	5L/m	16'48"	200	5"	

Site Notes such as weather, visitors, scope deviations, health & safety issues, etc. (When making sample specific notes, reference the line number above):

(1) *A *Due to high purge volumes & low flow rate, client agreed to reduce purge volume to 3TV.
*B: Syringe #263/179
·S. Mayfield sampled probes
·Replaced all valves w/ 1-way stopcocks

*C: All old valves on B2-5 were open when well-box opened
*D: Tubing was encased in concrete at bottom of well box. So I cut tubing & added new valve.
*E: Low flow ≤100 ml/m. Let purge at 100 ml/m, when 100" H_2O vac reached, shut-off pump, let vac dissipate & repeat

H&P Mobile Geochemistry Inc.

FMS004
Revision: 4
Revised: 3/22/2017
Effective: 3/24/2017
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Log Sheet: Soil Vapor Sampling with Syringe

H&P Project #: ERM032718 - L6/Tech Date: 3.29.18
Site Address: 233 kansas Ave, El segundo Page: 2 of 2
Consultant: ERM H&P Rep(s): S. mayfield
Consultant Rep(s): Manuel T. Chu
Reviewed: BB
Scanned: T Torres

Equipment Info
Inline Gauge ID#: —
Pump ID#: 026

Purge Volume Information
PV Amount: 3PV
PV Includes: ☐ Tubing ☐ Sand 40% ☐ Dry Bent 50%

Leak Check Compound
A cloth saturated with LCC is placed around tubing connections and probe seal. This is done for all samples unless otherwise noted.
☒ 1,1-DFA ☐ 1,1,1,2-TFA ☐ IPA ☐ Other:

Resample Key
RS = Resample
RD = for Dilution
RL = for LCC Fail

	Sample Information				Probe Specs							Purge & Collection Information						
	Point ID	Syringe ID	Sample Volume (cc)	Sample Time	Probe Depth (ft)	Tubing Length (ft)	Tubing OD (in.)	Sand Ht (in.)	Sand Dia (in.)	Dry Bent. Ht (in.)	Dry Bent. Dia (in.)	Shut In Test 60 sec (✓)	Leak Check (✓)	Purge Vol (mL)	Purge Flow Rate (mL/min)	Pump Time (min:sec)	Sample Flow Rate (mL/min)	ProbeVac ☒ Hg ☐ H_2O	
1	SV-B2-2-46	218/209	100	1310	46'	48'	1/4"	24"	8"	48"	8"	✓	✓	87525	16'44"	5m 5:2/m	200	2"	
2	SV-B2-2-19	247/266	100	1357	19'	21"	1/4	24	8	48	8	✓	✓	306	200mL	*	<200	80"	*A
3	—			1404															
4	SV-B2-2-19-RD	255/179	100	1437	19'	21"	1/4	24	8	48	8	✓	✓	406	—	—	<200	80"	*A
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			

Site Notes such as weather, visitors, scope deviations, health & safety issues, etc. (When making sample specific notes, reference the line number above):
*A: Low flow; Reduced purge rate to 200.
*Added new 1-way values w/ stopcocks to all probes

H&P Mobile Geochemistry Inc.

FMS004
Revision: 4
Revised: 3/22/2017
Effective: 3/24/2017
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Log Sheet: Soil Vapor Sampling with Syringe

H&P Project #: ERM032718-L6/Tech Date: 3.30.18

Site Address: 233 Kansas St., El Segundo Page: 1 of 1

Consultant: ERM H&P Rep(s): S. mayfield Reviewed: DB

Consultant Rep(s): Manuel T. Chu Scanned: T Torres

Equipment Info
Inline Gauge ID#: —
Pump ID#: 026

Purge Volume Information
PV Amount: 3PV
PV Includes: ☐ Tubing ☐ Sand 40% ☐ Dry Bent 50%

Leak Check Compound ☒ 1,1-DFA ☐ 1,1,1,2-TFA ☐ IPA ☐ Other:
A cloth saturated with LCC is placed around tubing connections and probe seal. This is done for all samples unless otherwise noted.

Resample Key
RS = Resample
RD = for Dilution
RL = for LCC Fail

	Sample Information				Probe Specs							Purge & Collection Information							
	Point ID	Syringe ID	Sample Volume (cc)	Sample Time	Probe Depth (ft)	Tubing Length (ft)	Tubing OD (in.)	Sand Ht (in.)	Sand Dia (in.)	Dry Bent. Ht (in.)	Dry Bent. Dia (in.)	Shut In Test 60 sec (✓)	Leak Check (✓)	Purge Vol (mL)	Purge Flow Rate (mL/min)	Pump Time (min:sec)	Sample Flow Rate (mL/min)	ProbeVac ☒ Hg ☐ H_2O	
1	SV-B2-8-80	268	50	1136	80'	82'	1/4"	24"	8"	48"	8"	✓	✓	84220	5L/m	16'51"	200	2"	*A
2	SV-B2-8-55	209	50	1159	55'	57'	1/4	24	8	48	8	✓	✓	83857	5L/m	16'47"	200	1"	*A
3	SV-B2-8-28	179/232	100	1249	28'	30'	1/4	24	8	48	8	✓	✓	83464	5L/m	16'42"	200	1"	*A
4	SV-B2-8-55-Rep	247	50	1227	55'	57'	1/4	24	8	48	8	✓	✓	83907	5L/m	—	200	1"	
5	SV-B2-8-17	218/263	100	1403	17'	19'	1/4	24	8	48	8	✓	✓	83305	5L/m	16'40"	200	1"	*A
6	SV-B2-4-75	255	50	1424	75'	77'	1/4	24	8	48	8	✓	✓	84155	5L/m	16'49"	200	1.5"	*A*B
7	SV-B2-8-28 RD	268	50	1315	28'	30'	1/4	24	8	48	8	✓	✓	83564	5L/m	—	200	1"	
8	SV-B2-4-55	263	50	1446	55'	57'	1/4	24	8	48	8	✓	✓	83857	5L/m	16'47"	200	1"	*A
9	SV-B2-4-27	209	50	1526	27'	29'	1/4	24	8	48	8	✓	✓	83449	5L/m	16'42"	200	1"	*A
10																			
11																			
12																			

Site Notes such as weather, visitors, scope deviations, health & safety issues, etc. (When making sample specific notes, reference the line number above):
*A: All old valves were open when well-box opened.
*B: Per field client, 75' installed 3.28-1101; 55' installed 3.28-1300
27' installed 1500-3.28; 12' installed 3.28-1641
* S. mayfield sampled probes
* Replaced existing valves w/ 1-way stopcocks

Mobile Geochemistry Inc.

FMS004
Revision: 4
Revised: 3/22/2017
Effective: 3/24/2017
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Log Sheet: Soil Vapor Sampling with Syringe

H&P Project #: ERM032718 - L6/Tech Date: 4.2.18

Site Address: 233 Kansas Ave, El Segundo Page: 1 of 1

Consultant: Erm H&P Rep(s): S. Mayfield

Consultant Rep(s): Maggie T. Chu

Reviewed: DB

Scanned: TTorres

Equipment Info
Inline Gauge ID#: —
Pump ID#: 026

Purge Volume Information
PV Amount: 3PV
PV Includes: ☐ Tubing ☐ Sand 40% ☐ Dry Bent 50%

Leak Check Compound ☑ 1,1-DFA ☐ 1,1,1,2-TFA ☐ IPA ☐ Other:
A cloth saturated with LCC is placed around tubing connections and probe seal. This is done for all samples unless otherwise noted.

Resample Key
RS = Resample
RD = for Dilution
RL = for LCC Fail

	Sample Information				Probe Specs							Purge & Collection Information							
	Point ID	Syringe ID	Sample Volume (cc)	Sample Time	Probe Depth (ft)	Tubing Length (ft)	Tubing OD (in.)	Sand Ht (in.)	Sand Dia (in.)	Dry Bent. Ht (in.)	Dry Bent. Dia (in.)	Shut In Test 60 sec (✓)	Leak Check (✓)	Purge Vol (mL)	Purge Flow Rate (mL/min)	Pump Time (min:sec)	Sample Flow Rate (mL/min)	ProbeVac ☒ Hg ☐ H_2O	
1	SV-B2-4-12	179	50	0724	12'	14'	1/4"	24"	8"	48"	8"	✓	✓	83350	5L/m	16'38"	200	1"	*A
2	SV-B2-1-80	232	50	0811	80'	82'	1/4	24	8	48	8	✓	✓	84220	5L/m	16'51"	200	2"	*A
3	SV-B2-4-12-Rep	209	50	0751	12'	14'	1/4	24	8	48	8	✓	✓	83400	5L/m	—	200	1"	
4	SV-B2-1-52	255	50	0833	52'	54'	1/4	24	8	48	8	✓	✓	83813	5L/m	16'46"	200	1"	*A
5	SV-B2-1-42	218	50	0902	42'	44'	1/4	24	8	48	8	✓	✓	83669	5L/m	16'45"	200	1"	*A
6	SV-B2-1-18	268	50	0932	18'	20'	1/4	24	8	48	8	✓	✓	83320	5L/m	16'40"	200	3"	*A
7	SV-B2-1-18 RD	247/236	100	1009	18'	20'	1/4	24	8	48	8	✓	✓	83370	5L/m	—	200	3"	
8																			
9																			
10																			
11																			
12																			

Site Notes such as weather, visitors, scope deviations, health & safety issues, etc. (When making sample specific notes, reference the line number above):
*A: Valve left in open position after installation by drillers
* S. mayfield sampled probes
* Replaced all valves w/ new 1-ways w/ stopcocks

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WORK ORDER NUMBER: 18-03-0951

The difference is service

AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: ERM-WEST

Client Project Name: Infineon / 0444329

Attention: Marlene Dawes
1920 Main Street
Suite 300
Irvine, CA 92614-7279

Approved for release on 03/20/2018 by:
Virendra Patel
Project Manager

ResultLink

Email your PM

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Contents

Client Project Name: Infineon / 0444329
Work Order Number: 18-03-0951

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3 Detections Summary. 5

4 Client Sample Data. 6
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5 Quality Control Sample Data. 24
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Work Order Narrative

Work Order: 18-03-0951 Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 03/12/18. They were assigned to Work Order 18-03-0951.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

DoD Projects:

The test results contained in this report are accredited under the laboratory's ISO/IEC 17025:2005 and DoD-ELAP accreditation issued by the ANSI-ASQ National Accreditation Board. Refer to certificate and scope of accreditation ADE-1864.

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Sample Summary

Client:	ERM-WEST 1920 Main Street, Suite 300 Irvine, CA 92614-7279	Work Order:	18-03-0951
		Project Name:	Infineon / 0444329
		PO Number:	0444329
		Date/Time Received:	03/12/18 19:00
		Number of Containers:	20
Attn:	Marlene Dawes		

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
B2-2-7	18-03-0951-1	03/12/18 08:55	4	Solid
B2-2-19	18-03-0951-2	03/12/18 09:16	4	Solid
B2-2-46	18-03-0951-3	03/12/18 10:44	4	Solid
B2-2-65	18-03-0951-4	03/12/18 13:15	4	Solid
B2-2-80	18-03-0951-5	03/12/18 14:22	4	Solid

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Detections Summary

Client:	ERM-WEST 1920 Main Street, Suite 300 Irvine, CA 92614-7279	Work Order:	18-03-0951
		Project Name:	Infineon / 0444329
		Received:	03/12/18
Attn:	Marlene Dawes		Page 1 of 1

Client SampleID

Analyte	Result	Qualifiers	RL	Units	Method	Extraction
B2-2-7 (18-03-0951-1)						
Tetrachloroethene	1.3		0.86	ug/kg	EPA 8260B	EPA 5035
B2-2-65 (18-03-0951-4)						
Tetrachloroethene	1.7		1.0	ug/kg	EPA 8260B	EPA 5035
B2-2-80 (18-03-0951-5)						
Tetrachloroethene	1.7		1.2	ug/kg	EPA 8260B	EPA 5035

Subcontracted analyses, if any, are not included in this summary.

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* MDL is shown

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444329

Date Received: 03/12/18
Work Order: 18-03-0951
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B2-2-7	**18-03-0951-1-C**	**03/12/18 08:55**	**Solid**	**GC/MS QQ**	**03/12/18**	**03/13/18 14:55**	**180313L012**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	43	1.00	
Benzene	ND	0.86	1.00	
Bromobenzene	ND	0.86	1.00	
Bromochloromethane	ND	1.7	1.00	
Bromodichloromethane	ND	0.86	1.00	
Bromoform	ND	4.3	1.00	
Bromomethane	ND	17	1.00	
2-Butanone	ND	17	1.00	
n-Butylbenzene	ND	0.86	1.00	
sec-Butylbenzene	ND	0.86	1.00	
tert-Butylbenzene	ND	0.86	1.00	
Carbon Disulfide	ND	8.6	1.00	
Carbon Tetrachloride	ND	0.86	1.00	
Chlorobenzene	ND	0.86	1.00	
Chloroethane	ND	1.7	1.00	
Chloroform	ND	0.86	1.00	
Chloromethane	ND	17	1.00	
2-Chlorotoluene	ND	0.86	1.00	
4-Chlorotoluene	ND	0.86	1.00	
Dibromochloromethane	ND	1.7	1.00	
1,2-Dibromo-3-Chloropropane	ND	4.3	1.00	
1,2-Dibromoethane	ND	0.86	1.00	
Dibromomethane	ND	0.86	1.00	
1,2-Dichlorobenzene	ND	0.86	1.00	
1,3-Dichlorobenzene	ND	0.86	1.00	
1,4-Dichlorobenzene	ND	0.86	1.00	
Dichlorodifluoromethane	ND	1.7	1.00	
1,1-Dichloroethane	ND	0.86	1.00	
1,2-Dichloroethane	ND	0.86	1.00	
1,1-Dichloroethene	ND	0.86	1.00	
c-1,2-Dichloroethene	ND	0.86	1.00	
t-1,2-Dichloroethene	ND	0.86	1.00	
1,2-Dichloropropane	ND	0.86	1.00	
1,3-Dichloropropane	ND	0.86	1.00	
2,2-Dichloropropane	ND	4.3	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/12/18
1920 Main Street, Suite 300	Work Order:	18-03-0951
Irvine, CA 92614-7279	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: Infineon / 0444329		Page 2 of 18

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	1.7	1.00	
c-1,3-Dichloropropene	ND	0.86	1.00	
t-1,3-Dichloropropene	ND	1.7	1.00	
Ethylbenzene	ND	0.86	1.00	
2-Hexanone	ND	17	1.00	
Isopropylbenzene	ND	0.86	1.00	
p-Isopropyltoluene	ND	0.86	1.00	
Methylene Chloride	ND	8.6	1.00	
4-Methyl-2-Pentanone	ND	17	1.00	
Naphthalene	ND	8.6	1.00	
n-Propylbenzene	ND	1.7	1.00	
Styrene	ND	0.86	1.00	
1,1,1,2-Tetrachloroethane	ND	0.86	1.00	
1,1,2,2-Tetrachloroethane	ND	1.7	1.00	
Tetrachloroethene	1.3	0.86	1.00	
Toluene	ND	0.86	1.00	
1,2,3-Trichlorobenzene	ND	1.7	1.00	
1,2,4-Trichlorobenzene	ND	1.7	1.00	
1,1,1-Trichloroethane	ND	0.86	1.00	
1,1,2-Trichloroethane	ND	0.86	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	8.6	1.00	
Trichloroethene	ND	1.7	1.00	
Trichlorofluoromethane	ND	8.6	1.00	
1,2,3-Trichloropropane	ND	1.7	1.00	
1,2,4-Trimethylbenzene	ND	1.7	1.00	
1,3,5-Trimethylbenzene	ND	1.7	1.00	
Vinyl Acetate	ND	8.6	1.00	
Vinyl Chloride	ND	0.86	1.00	
p/m-Xylene	ND	1.7	1.00	
o-Xylene	ND	0.86	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	1.7	1.00	
Tert-Butyl Alcohol (TBA)	ND	17	1.00	
Diisopropyl Ether (DIPE)	ND	0.86	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.86	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.86	1.00	
Ethanol	ND	430	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	97	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/12/18
1920 Main Street, Suite 300		Work Order:	18-03-0951
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444329			Page 3 of 18

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	102	79-133	
1,2-Dichloroethane-d4	112	71-155	
Toluene-d8	99	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444329

Date Received: 03/12/18
Work Order: 18-03-0951
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B2-2-19	**18-03-0951-2-C**	**03/12/18 09:16**	**Solid**	**GC/MS QQ**	**03/12/18**	**03/13/18 15:23**	**180313L012**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	60	1.00	
Benzene	ND	1.2	1.00	
Bromobenzene	ND	1.2	1.00	
Bromochloromethane	ND	2.4	1.00	
Bromodichloromethane	ND	1.2	1.00	
Bromoform	ND	6.0	1.00	
Bromomethane	ND	24	1.00	
2-Butanone	ND	24	1.00	
n-Butylbenzene	ND	1.2	1.00	
sec-Butylbenzene	ND	1.2	1.00	
tert-Butylbenzene	ND	1.2	1.00	
Carbon Disulfide	ND	12	1.00	
Carbon Tetrachloride	ND	1.2	1.00	
Chlorobenzene	ND	1.2	1.00	
Chloroethane	ND	2.4	1.00	
Chloroform	ND	1.2	1.00	
Chloromethane	ND	24	1.00	
2-Chlorotoluene	ND	1.2	1.00	
4-Chlorotoluene	ND	1.2	1.00	
Dibromochloromethane	ND	2.4	1.00	
1,2-Dibromo-3-Chloropropane	ND	6.0	1.00	
1,2-Dibromoethane	ND	1.2	1.00	
Dibromomethane	ND	1.2	1.00	
1,2-Dichlorobenzene	ND	1.2	1.00	
1,3-Dichlorobenzene	ND	1.2	1.00	
1,4-Dichlorobenzene	ND	1.2	1.00	
Dichlorodifluoromethane	ND	2.4	1.00	
1,1-Dichloroethane	ND	1.2	1.00	
1,2-Dichloroethane	ND	1.2	1.00	
1,1-Dichloroethene	ND	1.2	1.00	
c-1,2-Dichloroethene	ND	1.2	1.00	
t-1,2-Dichloroethene	ND	1.2	1.00	
1,2-Dichloropropane	ND	1.2	1.00	
1,3-Dichloropropane	ND	1.2	1.00	
2,2-Dichloropropane	ND	6.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/12/18
1920 Main Street, Suite 300		Work Order:	18-03-0951
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444329			Page 5 of 18

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.4	1.00	
c-1,3-Dichloropropene	ND	1.2	1.00	
t-1,3-Dichloropropene	ND	2.4	1.00	
Ethylbenzene	ND	1.2	1.00	
2-Hexanone	ND	24	1.00	
Isopropylbenzene	ND	1.2	1.00	
p-Isopropyltoluene	ND	1.2	1.00	
Methylene Chloride	ND	12	1.00	
4-Methyl-2-Pentanone	ND	24	1.00	
Naphthalene	ND	12	1.00	
n-Propylbenzene	ND	2.4	1.00	
Styrene	ND	1.2	1.00	
1,1,1,2-Tetrachloroethane	ND	1.2	1.00	
1,1,2,2-Tetrachloroethane	ND	2.4	1.00	
Tetrachloroethene	ND	1.2	1.00	
Toluene	ND	1.2	1.00	
1,2,3-Trichlorobenzene	ND	2.4	1.00	
1,2,4-Trichlorobenzene	ND	2.4	1.00	
1,1,1-Trichloroethane	ND	1.2	1.00	
1,1,2-Trichloroethane	ND	1.2	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	12	1.00	
Trichloroethene	ND	2.4	1.00	
Trichlorofluoromethane	ND	12	1.00	
1,2,3-Trichloropropane	ND	2.4	1.00	
1,2,4-Trimethylbenzene	ND	2.4	1.00	
1,3,5-Trimethylbenzene	ND	2.4	1.00	
Vinyl Acetate	ND	12	1.00	
Vinyl Chloride	ND	1.2	1.00	
p/m-Xylene	ND	2.4	1.00	
o-Xylene	ND	1.2	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.4	1.00	
Tert-Butyl Alcohol (TBA)	ND	24	1.00	
Diisopropyl Ether (DIPE)	ND	1.2	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.2	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.2	1.00	
Ethanol	ND	600	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	95	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/12/18
1920 Main Street, Suite 300		Work Order:	18-03-0951
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444329			Page 6 of 18

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	101	79-133	
1,2-Dichloroethane-d4	110	71-155	
Toluene-d8	100	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444329

Date Received: 03/12/18
Work Order: 18-03-0951
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B2-2-46	**18-03-0951-3-C**	**03/12/18 10:44**	**Solid**	**GC/MS QQ**	**03/12/18**	**03/13/18 15:50**	**180313L012**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	52	1.00	
Benzene	ND	1.0	1.00	
Bromobenzene	ND	1.0	1.00	
Bromochloromethane	ND	2.1	1.00	
Bromodichloromethane	ND	1.0	1.00	
Bromoform	ND	5.2	1.00	
Bromomethane	ND	21	1.00	
2-Butanone	ND	21	1.00	
n-Butylbenzene	ND	1.0	1.00	
sec-Butylbenzene	ND	1.0	1.00	
tert-Butylbenzene	ND	1.0	1.00	
Carbon Disulfide	ND	10	1.00	
Carbon Tetrachloride	ND	1.0	1.00	
Chlorobenzene	ND	1.0	1.00	
Chloroethane	ND	2.1	1.00	
Chloroform	ND	1.0	1.00	
Chloromethane	ND	21	1.00	
2-Chlorotoluene	ND	1.0	1.00	
4-Chlorotoluene	ND	1.0	1.00	
Dibromochloromethane	ND	2.1	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.2	1.00	
1,2-Dibromoethane	ND	1.0	1.00	
Dibromomethane	ND	1.0	1.00	
1,2-Dichlorobenzene	ND	1.0	1.00	
1,3-Dichlorobenzene	ND	1.0	1.00	
1,4-Dichlorobenzene	ND	1.0	1.00	
Dichlorodifluoromethane	ND	2.1	1.00	
1,1-Dichloroethane	ND	1.0	1.00	
1,2-Dichloroethane	ND	1.0	1.00	
1,1-Dichloroethene	ND	1.0	1.00	
c-1,2-Dichloroethene	ND	1.0	1.00	
t-1,2-Dichloroethene	ND	1.0	1.00	
1,2-Dichloropropane	ND	1.0	1.00	
1,3-Dichloropropane	ND	1.0	1.00	
2,2-Dichloropropane	ND	5.2	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/12/18
1920 Main Street, Suite 300		Work Order:	18-03-0951
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444329			Page 8 of 18

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.1	1.00	
c-1,3-Dichloropropene	ND	1.0	1.00	
t-1,3-Dichloropropene	ND	2.1	1.00	
Ethylbenzene	ND	1.0	1.00	
2-Hexanone	ND	21	1.00	
Isopropylbenzene	ND	1.0	1.00	
p-Isopropyltoluene	ND	1.0	1.00	
Methylene Chloride	ND	10	1.00	
4-Methyl-2-Pentanone	ND	21	1.00	
Naphthalene	ND	10	1.00	
n-Propylbenzene	ND	2.1	1.00	
Styrene	ND	1.0	1.00	
1,1,1,2-Tetrachloroethane	ND	1.0	1.00	
1,1,2,2-Tetrachloroethane	ND	2.1	1.00	
Tetrachloroethene	ND	1.0	1.00	
Toluene	ND	1.0	1.00	
1,2,3-Trichlorobenzene	ND	2.1	1.00	
1,2,4-Trichlorobenzene	ND	2.1	1.00	
1,1,1-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.00	
Trichloroethene	ND	2.1	1.00	
Trichlorofluoromethane	ND	10	1.00	
1,2,3-Trichloropropane	ND	2.1	1.00	
1,2,4-Trimethylbenzene	ND	2.1	1.00	
1,3,5-Trimethylbenzene	ND	2.1	1.00	
Vinyl Acetate	ND	10	1.00	
Vinyl Chloride	ND	1.0	1.00	
p/m-Xylene	ND	2.1	1.00	
o-Xylene	ND	1.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.1	1.00	
Tert-Butyl Alcohol (TBA)	ND	21	1.00	
Diisopropyl Ether (DIPE)	ND	1.0	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.0	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.0	1.00	
Ethanol	ND	520	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	95	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/12/18
1920 Main Street, Suite 300		Work Order:	18-03-0951
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444329			Page 9 of 18

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	103	79-133	
1,2-Dichloroethane-d4	110	71-155	
Toluene-d8	99	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444329

Date Received: 03/12/18
Work Order: 18-03-0951
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B2-2-65	**18-03-0951-4-C**	**03/12/18 13:15**	**Solid**	**GC/MS QQ**	**03/12/18**	**03/13/18 16:18**	**180313L012**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	51	1.00	
Benzene	ND	1.0	1.00	
Bromobenzene	ND	1.0	1.00	
Bromochloromethane	ND	2.1	1.00	
Bromodichloromethane	ND	1.0	1.00	
Bromoform	ND	5.1	1.00	
Bromomethane	ND	21	1.00	
2-Butanone	ND	21	1.00	
n-Butylbenzene	ND	1.0	1.00	
sec-Butylbenzene	ND	1.0	1.00	
tert-Butylbenzene	ND	1.0	1.00	
Carbon Disulfide	ND	10	1.00	
Carbon Tetrachloride	ND	1.0	1.00	
Chlorobenzene	ND	1.0	1.00	
Chloroethane	ND	2.1	1.00	
Chloroform	ND	1.0	1.00	
Chloromethane	ND	21	1.00	
2-Chlorotoluene	ND	1.0	1.00	
4-Chlorotoluene	ND	1.0	1.00	
Dibromochloromethane	ND	2.1	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.1	1.00	
1,2-Dibromoethane	ND	1.0	1.00	
Dibromomethane	ND	1.0	1.00	
1,2-Dichlorobenzene	ND	1.0	1.00	
1,3-Dichlorobenzene	ND	1.0	1.00	
1,4-Dichlorobenzene	ND	1.0	1.00	
Dichlorodifluoromethane	ND	2.1	1.00	
1,1-Dichloroethane	ND	1.0	1.00	
1,2-Dichloroethane	ND	1.0	1.00	
1,1-Dichloroethene	ND	1.0	1.00	
c-1,2-Dichloroethene	ND	1.0	1.00	
t-1,2-Dichloroethene	ND	1.0	1.00	
1,2-Dichloropropane	ND	1.0	1.00	
1,3-Dichloropropane	ND	1.0	1.00	
2,2-Dichloropropane	ND	5.1	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/12/18
1920 Main Street, Suite 300		Work Order:	18-03-0951
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444329			Page 11 of 18

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.1	1.00	
c-1,3-Dichloropropene	ND	1.0	1.00	
t-1,3-Dichloropropene	ND	2.1	1.00	
Ethylbenzene	ND	1.0	1.00	
2-Hexanone	ND	21	1.00	
Isopropylbenzene	ND	1.0	1.00	
p-Isopropyltoluene	ND	1.0	1.00	
Methylene Chloride	ND	10	1.00	
4-Methyl-2-Pentanone	ND	21	1.00	
Naphthalene	ND	10	1.00	
n-Propylbenzene	ND	2.1	1.00	
Styrene	ND	1.0	1.00	
1,1,1,2-Tetrachloroethane	ND	1.0	1.00	
1,1,2,2-Tetrachloroethane	ND	2.1	1.00	
Tetrachloroethene	1.7	1.0	1.00	
Toluene	ND	1.0	1.00	
1,2,3-Trichlorobenzene	ND	2.1	1.00	
1,2,4-Trichlorobenzene	ND	2.1	1.00	
1,1,1-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.00	
Trichloroethene	ND	2.1	1.00	
Trichlorofluoromethane	ND	10	1.00	
1,2,3-Trichloropropane	ND	2.1	1.00	
1,2,4-Trimethylbenzene	ND	2.1	1.00	
1,3,5-Trimethylbenzene	ND	2.1	1.00	
Vinyl Acetate	ND	10	1.00	
Vinyl Chloride	ND	1.0	1.00	
p/m-Xylene	ND	2.1	1.00	
o-Xylene	ND	1.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.1	1.00	
Tert-Butyl Alcohol (TBA)	ND	21	1.00	
Diisopropyl Ether (DIPE)	ND	1.0	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.0	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.0	1.00	
Ethanol	ND	510	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	95	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/12/18
1920 Main Street, Suite 300		Work Order:	18-03-0951
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444329			Page 12 of 18

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	101	79-133	
1,2-Dichloroethane-d4	112	71-155	
Toluene-d8	100	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444329

Date Received: 03/12/18
Work Order: 18-03-0951
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B2-2-80	**18-03-0951-5-C**	**03/12/18 14:22**	**Solid**	**GC/MS QQ**	**03/12/18**	**03/13/18 16:46**	**180313L012**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	61	1.00	
Benzene	ND	1.2	1.00	
Bromobenzene	ND	1.2	1.00	
Bromochloromethane	ND	2.4	1.00	
Bromodichloromethane	ND	1.2	1.00	
Bromoform	ND	6.1	1.00	
Bromomethane	ND	24	1.00	
2-Butanone	ND	24	1.00	
n-Butylbenzene	ND	1.2	1.00	
sec-Butylbenzene	ND	1.2	1.00	
tert-Butylbenzene	ND	1.2	1.00	
Carbon Disulfide	ND	12	1.00	
Carbon Tetrachloride	ND	1.2	1.00	
Chlorobenzene	ND	1.2	1.00	
Chloroethane	ND	2.4	1.00	
Chloroform	ND	1.2	1.00	
Chloromethane	ND	24	1.00	
2-Chlorotoluene	ND	1.2	1.00	
4-Chlorotoluene	ND	1.2	1.00	
Dibromochloromethane	ND	2.4	1.00	
1,2-Dibromo-3-Chloropropane	ND	6.1	1.00	
1,2-Dibromoethane	ND	1.2	1.00	
Dibromomethane	ND	1.2	1.00	
1,2-Dichlorobenzene	ND	1.2	1.00	
1,3-Dichlorobenzene	ND	1.2	1.00	
1,4-Dichlorobenzene	ND	1.2	1.00	
Dichlorodifluoromethane	ND	2.4	1.00	
1,1-Dichloroethane	ND	1.2	1.00	
1,2-Dichloroethane	ND	1.2	1.00	
1,1-Dichloroethene	ND	1.2	1.00	
c-1,2-Dichloroethene	ND	1.2	1.00	
t-1,2-Dichloroethene	ND	1.2	1.00	
1,2-Dichloropropane	ND	1.2	1.00	
1,3-Dichloropropane	ND	1.2	1.00	
2,2-Dichloropropane	ND	6.1	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444329

Date Received: 03/12/18
Work Order: 18-03-0951
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.4	1.00	
c-1,3-Dichloropropene	ND	1.2	1.00	
t-1,3-Dichloropropene	ND	2.4	1.00	
Ethylbenzene	ND	1.2	1.00	
2-Hexanone	ND	24	1.00	
Isopropylbenzene	ND	1.2	1.00	
p-Isopropyltoluene	ND	1.2	1.00	
Methylene Chloride	ND	12	1.00	
4-Methyl-2-Pentanone	ND	24	1.00	
Naphthalene	ND	12	1.00	
n-Propylbenzene	ND	2.4	1.00	
Styrene	ND	1.2	1.00	
1,1,1,2-Tetrachloroethane	ND	1.2	1.00	
1,1,2,2-Tetrachloroethane	ND	2.4	1.00	
Tetrachloroethene	1.7	1.2	1.00	
Toluene	ND	1.2	1.00	
1,2,3-Trichlorobenzene	ND	2.4	1.00	
1,2,4-Trichlorobenzene	ND	2.4	1.00	
1,1,1-Trichloroethane	ND	1.2	1.00	
1,1,2-Trichloroethane	ND	1.2	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	12	1.00	
Trichloroethene	ND	2.4	1.00	
Trichlorofluoromethane	ND	12	1.00	
1,2,3-Trichloropropane	ND	2.4	1.00	
1,2,4-Trimethylbenzene	ND	2.4	1.00	
1,3,5-Trimethylbenzene	ND	2.4	1.00	
Vinyl Acetate	ND	12	1.00	
Vinyl Chloride	ND	1.2	1.00	
p/m-Xylene	ND	2.4	1.00	
o-Xylene	ND	1.2	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.4	1.00	
Tert-Butyl Alcohol (TBA)	ND	24	1.00	
Diisopropyl Ether (DIPE)	ND	1.2	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.2	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.2	1.00	
Ethanol	ND	610	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	92	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/12/18
1920 Main Street, Suite 300		Work Order:	18-03-0951
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444329			Page 15 of 18

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	96	79-133	
1,2-Dichloroethane-d4	104	71-155	
Toluene-d8	100	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444329

Date Received: 03/12/18
Work Order: 18-03-0951
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**095-01-025-29757**	**N/A**	**Solid**	**GC/MS QQ**	**03/13/18**	**03/13/18 11:37**	**180313L012**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	50	1.00	
Benzene	ND	1.0	1.00	
Bromobenzene	ND	1.0	1.00	
Bromochloromethane	ND	2.0	1.00	
Bromodichloromethane	ND	1.0	1.00	
Bromoform	ND	5.0	1.00	
Bromomethane	ND	20	1.00	
2-Butanone	ND	20	1.00	
n-Butylbenzene	ND	1.0	1.00	
sec-Butylbenzene	ND	1.0	1.00	
tert-Butylbenzene	ND	1.0	1.00	
Carbon Disulfide	ND	10	1.00	
Carbon Tetrachloride	ND	1.0	1.00	
Chlorobenzene	ND	1.0	1.00	
Chloroethane	ND	2.0	1.00	
Chloroform	ND	1.0	1.00	
Chloromethane	ND	20	1.00	
2-Chlorotoluene	ND	1.0	1.00	
4-Chlorotoluene	ND	1.0	1.00	
Dibromochloromethane	ND	2.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.0	1.00	
1,2-Dibromoethane	ND	1.0	1.00	
Dibromomethane	ND	1.0	1.00	
1,2-Dichlorobenzene	ND	1.0	1.00	
1,3-Dichlorobenzene	ND	1.0	1.00	
1,4-Dichlorobenzene	ND	1.0	1.00	
Dichlorodifluoromethane	ND	2.0	1.00	
1,1-Dichloroethane	ND	1.0	1.00	
1,2-Dichloroethane	ND	1.0	1.00	
1,1-Dichloroethene	ND	1.0	1.00	
c-1,2-Dichloroethene	ND	1.0	1.00	
t-1,2-Dichloroethene	ND	1.0	1.00	
1,2-Dichloropropane	ND	1.0	1.00	
1,3-Dichloropropane	ND	1.0	1.00	
2,2-Dichloropropane	ND	5.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/12/18
1920 Main Street, Suite 300		Work Order:	18-03-0951
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444329			Page 17 of 18

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.0	1.00	
c-1,3-Dichloropropene	ND	1.0	1.00	
t-1,3-Dichloropropene	ND	2.0	1.00	
Ethylbenzene	ND	1.0	1.00	
2-Hexanone	ND	20	1.00	
Isopropylbenzene	ND	1.0	1.00	
p-Isopropyltoluene	ND	1.0	1.00	
Methylene Chloride	ND	10	1.00	
4-Methyl-2-Pentanone	ND	20	1.00	
Naphthalene	ND	10	1.00	
n-Propylbenzene	ND	2.0	1.00	
Styrene	ND	1.0	1.00	
1,1,1,2-Tetrachloroethane	ND	1.0	1.00	
1,1,2,2-Tetrachloroethane	ND	2.0	1.00	
Tetrachloroethene	ND	1.0	1.00	
Toluene	ND	1.0	1.00	
1,2,3-Trichlorobenzene	ND	2.0	1.00	
1,2,4-Trichlorobenzene	ND	2.0	1.00	
1,1,1-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.00	
Trichloroethene	ND	2.0	1.00	
Trichlorofluoromethane	ND	10	1.00	
1,2,3-Trichloropropane	ND	2.0	1.00	
1,2,4-Trimethylbenzene	ND	2.0	1.00	
1,3,5-Trimethylbenzene	ND	2.0	1.00	
Vinyl Acetate	ND	10	1.00	
Vinyl Chloride	ND	1.0	1.00	
p/m-Xylene	ND	2.0	1.00	
o-Xylene	ND	1.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.0	1.00	
Tert-Butyl Alcohol (TBA)	ND	20	1.00	
Diisopropyl Ether (DIPE)	ND	1.0	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.0	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.0	1.00	
Ethanol	ND	500	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	94	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/12/18
1920 Main Street, Suite 300		Work Order:	18-03-0951
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444329			Page 18 of 18

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	105	79-133	
1,2-Dichloroethane-d4	108	71-155	
Toluene-d8	100	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Quality Control - LCS/LCSD

ERM-WEST		Date Received:	03/12/18
1920 Main Street, Suite 300		Work Order:	18-03-0951
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
Project: Infineon / 0444329			Page 1 of 1

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
095-01-025-29757	**LCS**	**Solid**	**GC/MS QQ**	**03/13/18**	**03/13/18 10:02**	**180313L012**
095-01-025-29757	**LCSD**	**Solid**	**GC/MS QQ**	**03/13/18**	**03/13/18 10:29**	**180313L012**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Benzene	50.00	46.70	93	47.20	94	80-120	73-127	1	0-20	
Carbon Tetrachloride	50.00	47.48	95	48.33	97	65-137	53-149	2	0-20	
Chlorobenzene	50.00	45.14	90	46.55	93	80-120	73-127	3	0-20	
1,2-Dibromoethane	50.00	45.42	91	47.67	95	80-120	73-127	5	0-20	
1,2-Dichlorobenzene	50.00	46.62	93	48.18	96	80-120	73-127	3	0-20	
1,2-Dichloroethane	50.00	46.58	93	47.92	96	80-120	73-127	3	0-20	
1,1-Dichloroethene	50.00	48.57	97	48.90	98	68-128	58-138	1	0-20	
Ethylbenzene	50.00	47.67	95	49.16	98	80-120	73-127	3	0-20	
Toluene	50.00	46.71	93	48.11	96	80-120	73-127	3	0-20	
Trichloroethene	50.00	47.97	96	48.63	97	80-120	73-127	1	0-20	
Vinyl Chloride	50.00	47.25	94	46.93	94	67-127	57-137	1	0-20	
p/m-Xylene	100.0	95.72	96	98.17	98	75-125	67-133	3	0-25	
o-Xylene	50.00	48.47	97	50.31	101	75-125	67-133	4	0-25	
Methyl-t-Butyl Ether (MTBE)	50.00	45.15	90	46.56	93	70-124	61-133	3	0-20	
Tert-Butyl Alcohol (TBA)	250.0	226.7	91	223.4	89	73-121	65-129	1	0-20	
Diisopropyl Ether (DIPE)	50.00	47.54	95	48.50	97	69-129	59-139	2	0-20	
Ethyl-t-Butyl Ether (ETBE)	50.00	46.68	93	47.96	96	70-124	61-133	3	0-20	
Tert-Amyl-Methyl Ether (TAME)	50.00	45.93	92	47.77	96	74-122	66-130	4	0-20	
Ethanol	500.0	439.8	88	429.7	86	51-135	37-149	2	0-27	

Total number of LCS compounds: 19
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

RPD: Relative Percent Difference. CL: Control Limits

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Sample Analysis Summary Report

Work Order: 18-03-0951 Page 1 of 1

Method	Extraction	Chemist ID	Instrument	Analytical Location
EPA 8260B	EPA 5035	486	GC/MS QQ	2

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Glossary of Terms and Qualifiers

Work Order: 18-03-0951 Page 1 of 1

Qualifiers	Definition
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
CI	See case narrative.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

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Environmental Resources Management

2875 Michelle Drive, Suite 200 ● Irvine, CA, 92606 ● (949) 623-4700 ● FAX (949) 623-4711

CHAIN OF CUSTODY RECORD

NO: № 008517

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PROJECT#	PROJECT NAME
0444329	Infineon

SAMPLER: (PRINT NAME)	(SIGNATURE)
Daniel Berney	

RECEIVING LABORATORY: Eurofins Calscience – attn. Virendra Patel

18-03-0951

	SAMPLE I.D.	DATE	TIME	COMP	GRAB	SAMPLING METHOD	PRESERVATIVE	ICE (Y/N)	SAMPLING VOLUME	# OF CONTAINERS	MATRIX: SOIL	MATRIX: WATER	MATRIX: GAS	REQUESTED PARAMETERS: 8260B
1	B2-2-7	3/12/18	0955		X	5035		Y		3/kit	X			✓
2	B2-2-19		0916		X	5035		Y		3/kit	X			✓
3	B2-2-41		1044		X	5035		Y		3/kit	X			✓
4	B2-2-65		1315		X	5035		Y		3/kit	X			✓
5	B2-2-80		1422		X	5035		Y		3/kit	X			✓

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME
	3/12/18	1525		3/12/18	1525
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME
	3/12/18	1900		3/12/18	1900
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME

FIELD REMARKS: ● Standard TAT

REMARKS ON SAMPLE RECEIPT: ☐ BOTTLE INTACT ☐ CUSTODY SEALS ☐ CHILLED ☐ PRESERVED ☐ SEALS INTACT ☐ SEE REMARKS

ERM REMARKS:

SEND REPORT TO:
Maggie.Tynkow@ERM.com
Stewart.Emhof@erm.com
Brad.Cross@erm.com
Marlene.dawes@erm.com
Daniel.Berney@erm.com
Tony.Parenteau@erm.com

WHITE - LABORATORY COPY CANARY - FIELD COPY PINK - DATABASE MANAGER GOLD - PROJECT FILE

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WORK ORDER NUMBER: 18-03-0951

SAMPLE RECEIPT CHECKLIST

COOLER 1 OF 1

CLIENT: ERM

DATE: 03/12/2018

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)

Thermometer ID: SC6 (CF: +0.2°C); Temperature (w/o CF): 3.2 °C (w/ CF): 3.5 °C; ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____)

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling

☐ Sample(s) received at ambient temperature; placed on ice for transport by courier

Ambient Temperature: ☐ Air ☐ Filter Checked by: 676

CUSTODY SEAL:

Cooler ☐ Present and Intact ☐ Present but Not Intact ☑ Not Present ☐ N/A Checked by: 676

Sample(s) ☐ Present and Intact ☐ Present but Not Intact ☑ Not Present ☐ N/A Checked by: 681

SAMPLE CONDITION:	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ Sampling date ☐ Sampling time ☐ Matrix ☐ Number of containers			
☐ No analysis requested ☐ Not relinquished ☐ No relinquished date ☐ No relinquished time			
Sampler's name indicated on COC	☑	☐	☐
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and in good condition	☑	☐	☐
Proper containers for analyses requested	☑	☐	☐
Sufficient volume/mass for analyses requested	☑	☐	☐
Samples received within holding time	☑	☐	☐
Aqueous samples for certain analyses received within 15-minute holding time			
☐ pH ☐ Residual Chlorine ☐ Dissolved Sulfide ☐ Dissolved Oxygen	☐	☐	☑
Proper preservation chemical(s) noted on COC and/or sample container	☑	☐	☐
Unpreserved aqueous sample(s) received for certain analyses			
☐ Volatile Organics ☐ Total Metals ☐ Dissolved Metals			
Acid/base preserved samples - pH within acceptable range	☐	☐	☑
Container(s) for certain analysis free of headspace	☐	☐	☑
☐ Volatile Organics ☐ Dissolved Gases (RSK-175) ☐ Dissolved Oxygen (SM 4500)			
☐ Carbon Dioxide (SM 4500) ☐ Ferrous Iron (SM 3500) ☐ Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE: (Trip Blank Lot Number: _____)

Aqueous: ☐ VOA ☐ VOA**h** ☐ VOA**na$_2$** ☐ 100PJ ☐ 100PJ**na$_2$** ☐ 125AGB ☐ 125AGB**h** ☐ 125AGB**p** ☐ 125PB ☐ 125PB**znna** (pH__9)

☐ 250AGB ☐ 250CGB ☐ 250CGB**s** (pH__2) ☐ 250PB ☐ 250PB**n** (pH__2) ☐ 500AGB ☐ 500AGJ ☐ 500AGJ**s** (pH__2) ☐ 500PB

☐ 1AGB ☐ 1AGB**na$_2$** ☐ 1AGB**s** (pH__2) ☐ 1AGB**s** (O&G) ☐ 1PB ☐ 1PB**na** (pH__12) ☐ _____ ☐ _____ ☐ _____

Solid: ☐ 4ozCGJ ☐ 8ozCGJ ☐ 16ozCGJ ☐ Sleeve (___) ☐ EnCores® (___) ☑ TerraCores® (3) ☑ 2oz PJ ☐ _____ ☐ _____

Air: ☐ Tedlar™ ☐ Canister ☐ Sorbent Tube ☐ PUF ☐ _____ **Other Matrix** (_____): ☐ _____ ☐ _____ ☐ _____

Container: **A** = Amber, **B** = Bottle, **C** = Clear, **E** = Envelope, **G** = Glass, **J** = Jar, **P** = Plastic, and **Z** = Ziploc/Resealable Bag

Preservative: **b** = buffered, **f** = filtered, **h** = HCl, **n** = HNO_3, **na** = NaOH, **na$_2$** = $Na_2S_2O_3$, **p** = H_3PO_4, **s** = H_2SO_4, **u** = ultra-pure, **x** = Na_2SO_3+$NaHSO_4.H_2O$, **znna** = Zn $(CH_3CO_2)_2$ + NaOH

Labeled/Checked by: 681

Reviewed by: 963

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WORK ORDER NUMBER: 18-03-1060

The difference is service

AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: ERM-WEST

Client Project Name: Infineon / 0444329.001

Attention: Maggie Tymkow
1920 Main Street
Suite 300
Irvine, CA 92614-7279

Approved for release on 03/21/2018 by:
Virendra Patel
Project Manager

ResultLink

Email your PM

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Contents

Client Project Name: Infineon / 0444329.001
Work Order Number: 18-03-1060

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Work Order Narrative

Work Order: 18-03-1060 Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 03/13/18. They were assigned to Work Order 18-03-1060.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

DoD Projects:

The test results contained in this report are accredited under the laboratory's ISO/IEC 17025:2005 and DoD-ELAP accreditation issued by the ANSI-ASQ National Accreditation Board. Refer to certificate and scope of accreditation ADE-1864.

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Sample Summary

Client:	ERM-WEST 1920 Main Street, Suite 300 Irvine, CA 92614-7279	Work Order:	18-03-1060
		Project Name:	Infineon / 0444329.001
		PO Number:	0444329.001
		Date/Time Received:	03/13/18 18:35
		Number of Containers:	16
Attn:	Maggie Tymkow		

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
B2-3-5	18-03-1060-1	03/13/18 08:40	4	Solid
B2-3-17	18-03-1060-2	03/13/18 08:50	4	Solid
B2-3-29	18-03-1060-3	03/13/18 09:10	4	Solid
B2-3-54	18-03-1060-4	03/13/18 10:35	4	Solid

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Detections Summary

Client:	ERM-WEST	Work Order:	18-03-1060
	1920 Main Street, Suite 300	Project Name:	Infineon / 0444329.001
	Irvine, CA 92614-7279	Received:	03/13/18
Attn:	Maggie Tymkow		Page 1 of 1

Client SampleID

Analyte	Result	Qualifiers	RL	Units	Method	Extraction
B2-3-5 (18-03-1060-1)						
Tetrachloroethene	4.9		0.83	ug/kg	EPA 8260B	EPA 5035
Trichloroethene	2.1		1.7	ug/kg	EPA 8260B	EPA 5035

Subcontracted analyses, if any, are not included in this summary.

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* MDL is shown

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444329.001

Date Received: 03/13/18
Work Order: 18-03-1060
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B2-3-5	**18-03-1060-1-C**	**03/13/18 08:40**	**Solid**	**GC/MS QQ**	**03/13/18**	**03/14/18 15:08**	**180314L015**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	42	1.00	
Benzene	ND	0.83	1.00	
Bromobenzene	ND	0.83	1.00	
Bromochloromethane	ND	1.7	1.00	
Bromodichloromethane	ND	0.83	1.00	
Bromoform	ND	4.2	1.00	
Bromomethane	ND	17	1.00	
2-Butanone	ND	17	1.00	
n-Butylbenzene	ND	0.83	1.00	
sec-Butylbenzene	ND	0.83	1.00	
tert-Butylbenzene	ND	0.83	1.00	
Carbon Disulfide	ND	8.3	1.00	
Carbon Tetrachloride	ND	0.83	1.00	
Chlorobenzene	ND	0.83	1.00	
Chloroethane	ND	1.7	1.00	
Chloroform	ND	0.83	1.00	
Chloromethane	ND	17	1.00	
2-Chlorotoluene	ND	0.83	1.00	
4-Chlorotoluene	ND	0.83	1.00	
Dibromochloromethane	ND	1.7	1.00	
1,2-Dibromo-3-Chloropropane	ND	4.2	1.00	
1,2-Dibromoethane	ND	0.83	1.00	
Dibromomethane	ND	0.83	1.00	
1,2-Dichlorobenzene	ND	0.83	1.00	
1,3-Dichlorobenzene	ND	0.83	1.00	
1,4-Dichlorobenzene	ND	0.83	1.00	
Dichlorodifluoromethane	ND	1.7	1.00	
1,1-Dichloroethane	ND	0.83	1.00	
1,2-Dichloroethane	ND	0.83	1.00	
1,1-Dichloroethene	ND	0.83	1.00	
c-1,2-Dichloroethene	ND	0.83	1.00	
t-1,2-Dichloroethene	ND	0.83	1.00	
1,2-Dichloropropane	ND	0.83	1.00	
1,3-Dichloropropane	ND	0.83	1.00	
2,2-Dichloropropane	ND	4.2	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/13/18
1920 Main Street, Suite 300		Work Order:	18-03-1060
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444329.001			Page 2 of 15

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	1.7	1.00	
c-1,3-Dichloropropene	ND	0.83	1.00	
t-1,3-Dichloropropene	ND	1.7	1.00	
Ethylbenzene	ND	0.83	1.00	
2-Hexanone	ND	17	1.00	
Isopropylbenzene	ND	0.83	1.00	
p-Isopropyltoluene	ND	0.83	1.00	
Methylene Chloride	ND	8.3	1.00	
4-Methyl-2-Pentanone	ND	17	1.00	
Naphthalene	ND	8.3	1.00	
n-Propylbenzene	ND	1.7	1.00	
Styrene	ND	0.83	1.00	
1,1,1,2-Tetrachloroethane	ND	0.83	1.00	
1,1,2,2-Tetrachloroethane	ND	1.7	1.00	
Tetrachloroethene	4.9	0.83	1.00	
Toluene	ND	0.83	1.00	
1,2,3-Trichlorobenzene	ND	1.7	1.00	
1,2,4-Trichlorobenzene	ND	1.7	1.00	
1,1,1-Trichloroethane	ND	0.83	1.00	
1,1,2-Trichloroethane	ND	0.83	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	8.3	1.00	
Trichloroethene	2.1	1.7	1.00	
Trichlorofluoromethane	ND	8.3	1.00	
1,2,3-Trichloropropane	ND	1.7	1.00	
1,2,4-Trimethylbenzene	ND	1.7	1.00	
1,3,5-Trimethylbenzene	ND	1.7	1.00	
Vinyl Acetate	ND	8.3	1.00	
Vinyl Chloride	ND	0.83	1.00	
p/m-Xylene	ND	1.7	1.00	
o-Xylene	ND	0.83	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	1.7	1.00	
Tert-Butyl Alcohol (TBA)	ND	17	1.00	
Diisopropyl Ether (DIPE)	ND	0.83	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.83	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.83	1.00	
Ethanol	ND	420	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	93	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/13/18
1920 Main Street, Suite 300		Work Order:	18-03-1060
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444329.001			Page 3 of 15

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	104	79-133	
1,2-Dichloroethane-d4	115	71-155	
Toluene-d8	101	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444329.001

Date Received: 03/13/18
Work Order: 18-03-1060
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B2-3-17	**18-03-1060-2-C**	**03/13/18 08:50**	**Solid**	**GC/MS QQ**	**03/13/18**	**03/14/18 15:36**	**180314L015**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	50	1.00	
Benzene	ND	1.0	1.00	
Bromobenzene	ND	1.0	1.00	
Bromochloromethane	ND	2.0	1.00	
Bromodichloromethane	ND	1.0	1.00	
Bromoform	ND	5.0	1.00	
Bromomethane	ND	20	1.00	
2-Butanone	ND	20	1.00	
n-Butylbenzene	ND	1.0	1.00	
sec-Butylbenzene	ND	1.0	1.00	
tert-Butylbenzene	ND	1.0	1.00	
Carbon Disulfide	ND	10	1.00	
Carbon Tetrachloride	ND	1.0	1.00	
Chlorobenzene	ND	1.0	1.00	
Chloroethane	ND	2.0	1.00	
Chloroform	ND	1.0	1.00	
Chloromethane	ND	20	1.00	
2-Chlorotoluene	ND	1.0	1.00	
4-Chlorotoluene	ND	1.0	1.00	
Dibromochloromethane	ND	2.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.0	1.00	
1,2-Dibromoethane	ND	1.0	1.00	
Dibromomethane	ND	1.0	1.00	
1,2-Dichlorobenzene	ND	1.0	1.00	
1,3-Dichlorobenzene	ND	1.0	1.00	
1,4-Dichlorobenzene	ND	1.0	1.00	
Dichlorodifluoromethane	ND	2.0	1.00	
1,1-Dichloroethane	ND	1.0	1.00	
1,2-Dichloroethane	ND	1.0	1.00	
1,1-Dichloroethene	ND	1.0	1.00	
c-1,2-Dichloroethene	ND	1.0	1.00	
t-1,2-Dichloroethene	ND	1.0	1.00	
1,2-Dichloropropane	ND	1.0	1.00	
1,3-Dichloropropane	ND	1.0	1.00	
2,2-Dichloropropane	ND	5.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/13/18
1920 Main Street, Suite 300		Work Order:	18-03-1060
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444329.001			Page 5 of 15

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.0	1.00	
c-1,3-Dichloropropene	ND	1.0	1.00	
t-1,3-Dichloropropene	ND	2.0	1.00	
Ethylbenzene	ND	1.0	1.00	
2-Hexanone	ND	20	1.00	
Isopropylbenzene	ND	1.0	1.00	
p-Isopropyltoluene	ND	1.0	1.00	
Methylene Chloride	ND	10	1.00	
4-Methyl-2-Pentanone	ND	20	1.00	
Naphthalene	ND	10	1.00	
n-Propylbenzene	ND	2.0	1.00	
Styrene	ND	1.0	1.00	
1,1,1,2-Tetrachloroethane	ND	1.0	1.00	
1,1,2,2-Tetrachloroethane	ND	2.0	1.00	
Tetrachloroethene	ND	1.0	1.00	
Toluene	ND	1.0	1.00	
1,2,3-Trichlorobenzene	ND	2.0	1.00	
1,2,4-Trichlorobenzene	ND	2.0	1.00	
1,1,1-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.00	
Trichloroethene	ND	2.0	1.00	
Trichlorofluoromethane	ND	10	1.00	
1,2,3-Trichloropropane	ND	2.0	1.00	
1,2,4-Trimethylbenzene	ND	2.0	1.00	
1,3,5-Trimethylbenzene	ND	2.0	1.00	
Vinyl Acetate	ND	10	1.00	
Vinyl Chloride	ND	1.0	1.00	
p/m-Xylene	ND	2.0	1.00	
o-Xylene	ND	1.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.0	1.00	
Tert-Butyl Alcohol (TBA)	ND	20	1.00	
Diisopropyl Ether (DIPE)	ND	1.0	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.0	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.0	1.00	
Ethanol	ND	500	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	95	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/13/18
1920 Main Street, Suite 300		Work Order:	18-03-1060
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444329.001			Page 6 of 15

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	110	79-133	
1,2-Dichloroethane-d4	117	71-155	
Toluene-d8	102	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444329.001

Date Received: 03/13/18
Work Order: 18-03-1060
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B2-3-29	**18-03-1060-3-C**	**03/13/18 09:10**	**Solid**	**GC/MS QQ**	**03/13/18**	**03/14/18 16:04**	**180314L015**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	52	1.00	
Benzene	ND	1.0	1.00	
Bromobenzene	ND	1.0	1.00	
Bromochloromethane	ND	2.1	1.00	
Bromodichloromethane	ND	1.0	1.00	
Bromoform	ND	5.2	1.00	
Bromomethane	ND	21	1.00	
2-Butanone	ND	21	1.00	
n-Butylbenzene	ND	1.0	1.00	
sec-Butylbenzene	ND	1.0	1.00	
tert-Butylbenzene	ND	1.0	1.00	
Carbon Disulfide	ND	10	1.00	
Carbon Tetrachloride	ND	1.0	1.00	
Chlorobenzene	ND	1.0	1.00	
Chloroethane	ND	2.1	1.00	
Chloroform	ND	1.0	1.00	
Chloromethane	ND	21	1.00	
2-Chlorotoluene	ND	1.0	1.00	
4-Chlorotoluene	ND	1.0	1.00	
Dibromochloromethane	ND	2.1	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.2	1.00	
1,2-Dibromoethane	ND	1.0	1.00	
Dibromomethane	ND	1.0	1.00	
1,2-Dichlorobenzene	ND	1.0	1.00	
1,3-Dichlorobenzene	ND	1.0	1.00	
1,4-Dichlorobenzene	ND	1.0	1.00	
Dichlorodifluoromethane	ND	2.1	1.00	
1,1-Dichloroethane	ND	1.0	1.00	
1,2-Dichloroethane	ND	1.0	1.00	
1,1-Dichloroethene	ND	1.0	1.00	
c-1,2-Dichloroethene	ND	1.0	1.00	
t-1,2-Dichloroethene	ND	1.0	1.00	
1,2-Dichloropropane	ND	1.0	1.00	
1,3-Dichloropropane	ND	1.0	1.00	
2,2-Dichloropropane	ND	5.2	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/13/18
1920 Main Street, Suite 300		Work Order:	18-03-1060
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444329.001			Page 8 of 15

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.1	1.00	
c-1,3-Dichloropropene	ND	1.0	1.00	
t-1,3-Dichloropropene	ND	2.1	1.00	
Ethylbenzene	ND	1.0	1.00	
2-Hexanone	ND	21	1.00	
Isopropylbenzene	ND	1.0	1.00	
p-Isopropyltoluene	ND	1.0	1.00	
Methylene Chloride	ND	10	1.00	
4-Methyl-2-Pentanone	ND	21	1.00	
Naphthalene	ND	10	1.00	
n-Propylbenzene	ND	2.1	1.00	
Styrene	ND	1.0	1.00	
1,1,1,2-Tetrachloroethane	ND	1.0	1.00	
1,1,2,2-Tetrachloroethane	ND	2.1	1.00	
Tetrachloroethene	ND	1.0	1.00	
Toluene	ND	1.0	1.00	
1,2,3-Trichlorobenzene	ND	2.1	1.00	
1,2,4-Trichlorobenzene	ND	2.1	1.00	
1,1,1-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.00	
Trichloroethene	ND	2.1	1.00	
Trichlorofluoromethane	ND	10	1.00	
1,2,3-Trichloropropane	ND	2.1	1.00	
1,2,4-Trimethylbenzene	ND	2.1	1.00	
1,3,5-Trimethylbenzene	ND	2.1	1.00	
Vinyl Acetate	ND	10	1.00	
Vinyl Chloride	ND	1.0	1.00	
p/m-Xylene	ND	2.1	1.00	
o-Xylene	ND	1.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.1	1.00	
Tert-Butyl Alcohol (TBA)	ND	21	1.00	
Diisopropyl Ether (DIPE)	ND	1.0	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.0	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.0	1.00	
Ethanol	ND	520	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	93	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/13/18
1920 Main Street, Suite 300		Work Order:	18-03-1060
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444329.001			Page 9 of 15

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	107	79-133	
1,2-Dichloroethane-d4	115	71-155	
Toluene-d8	100	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444329.001

Date Received: 03/13/18
Work Order: 18-03-1060
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B2-3-54	**18-03-1060-4-C**	**03/13/18 10:35**	**Solid**	**GC/MS QQ**	**03/13/18**	**03/14/18 16:32**	**180314L015**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	55	1.00	
Benzene	ND	1.1	1.00	
Bromobenzene	ND	1.1	1.00	
Bromochloromethane	ND	2.2	1.00	
Bromodichloromethane	ND	1.1	1.00	
Bromoform	ND	5.5	1.00	
Bromomethane	ND	22	1.00	
2-Butanone	ND	22	1.00	
n-Butylbenzene	ND	1.1	1.00	
sec-Butylbenzene	ND	1.1	1.00	
tert-Butylbenzene	ND	1.1	1.00	
Carbon Disulfide	ND	11	1.00	
Carbon Tetrachloride	ND	1.1	1.00	
Chlorobenzene	ND	1.1	1.00	
Chloroethane	ND	2.2	1.00	
Chloroform	ND	1.1	1.00	
Chloromethane	ND	22	1.00	
2-Chlorotoluene	ND	1.1	1.00	
4-Chlorotoluene	ND	1.1	1.00	
Dibromochloromethane	ND	2.2	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.5	1.00	
1,2-Dibromoethane	ND	1.1	1.00	
Dibromomethane	ND	1.1	1.00	
1,2-Dichlorobenzene	ND	1.1	1.00	
1,3-Dichlorobenzene	ND	1.1	1.00	
1,4-Dichlorobenzene	ND	1.1	1.00	
Dichlorodifluoromethane	ND	2.2	1.00	
1,1-Dichloroethane	ND	1.1	1.00	
1,2-Dichloroethane	ND	1.1	1.00	
1,1-Dichloroethene	ND	1.1	1.00	
c-1,2-Dichloroethene	ND	1.1	1.00	
t-1,2-Dichloroethene	ND	1.1	1.00	
1,2-Dichloropropane	ND	1.1	1.00	
1,3-Dichloropropane	ND	1.1	1.00	
2,2-Dichloropropane	ND	5.5	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/13/18
1920 Main Street, Suite 300		Work Order:	18-03-1060
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444329.001			Page 11 of 15

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.2	1.00	
c-1,3-Dichloropropene	ND	1.1	1.00	
t-1,3-Dichloropropene	ND	2.2	1.00	
Ethylbenzene	ND	1.1	1.00	
2-Hexanone	ND	22	1.00	
Isopropylbenzene	ND	1.1	1.00	
p-Isopropyltoluene	ND	1.1	1.00	
Methylene Chloride	ND	11	1.00	
4-Methyl-2-Pentanone	ND	22	1.00	
Naphthalene	ND	11	1.00	
n-Propylbenzene	ND	2.2	1.00	
Styrene	ND	1.1	1.00	
1,1,1,2-Tetrachloroethane	ND	1.1	1.00	
1,1,2,2-Tetrachloroethane	ND	2.2	1.00	
Tetrachloroethene	ND	1.1	1.00	
Toluene	ND	1.1	1.00	
1,2,3-Trichlorobenzene	ND	2.2	1.00	
1,2,4-Trichlorobenzene	ND	2.2	1.00	
1,1,1-Trichloroethane	ND	1.1	1.00	
1,1,2-Trichloroethane	ND	1.1	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	11	1.00	
Trichloroethene	ND	2.2	1.00	
Trichlorofluoromethane	ND	11	1.00	
1,2,3-Trichloropropane	ND	2.2	1.00	
1,2,4-Trimethylbenzene	ND	2.2	1.00	
1,3,5-Trimethylbenzene	ND	2.2	1.00	
Vinyl Acetate	ND	11	1.00	
Vinyl Chloride	ND	1.1	1.00	
p/m-Xylene	ND	2.2	1.00	
o-Xylene	ND	1.1	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.2	1.00	
Tert-Butyl Alcohol (TBA)	ND	22	1.00	
Diisopropyl Ether (DIPE)	ND	1.1	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.1	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.1	1.00	
Ethanol	ND	550	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	90	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/13/18
1920 Main Street, Suite 300		Work Order:	18-03-1060
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444329.001			Page 12 of 15

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	100	79-133	
1,2-Dichloroethane-d4	106	71-155	
Toluene-d8	100	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444329.001

Date Received: 03/13/18
Work Order: 18-03-1060
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**095-01-025-29762**	**N/A**	**Solid**	**GC/MS QQ**	**03/14/18**	**03/14/18 11:26**	**180314L015**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	50	1.00	
Benzene	ND	1.0	1.00	
Bromobenzene	ND	1.0	1.00	
Bromochloromethane	ND	2.0	1.00	
Bromodichloromethane	ND	1.0	1.00	
Bromoform	ND	5.0	1.00	
Bromomethane	ND	20	1.00	
2-Butanone	ND	20	1.00	
n-Butylbenzene	ND	1.0	1.00	
sec-Butylbenzene	ND	1.0	1.00	
tert-Butylbenzene	ND	1.0	1.00	
Carbon Disulfide	ND	10	1.00	
Carbon Tetrachloride	ND	1.0	1.00	
Chlorobenzene	ND	1.0	1.00	
Chloroethane	ND	2.0	1.00	
Chloroform	ND	1.0	1.00	
Chloromethane	ND	20	1.00	
2-Chlorotoluene	ND	1.0	1.00	
4-Chlorotoluene	ND	1.0	1.00	
Dibromochloromethane	ND	2.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.0	1.00	
1,2-Dibromoethane	ND	1.0	1.00	
Dibromomethane	ND	1.0	1.00	
1,2-Dichlorobenzene	ND	1.0	1.00	
1,3-Dichlorobenzene	ND	1.0	1.00	
1,4-Dichlorobenzene	ND	1.0	1.00	
Dichlorodifluoromethane	ND	2.0	1.00	
1,1-Dichloroethane	ND	1.0	1.00	
1,2-Dichloroethane	ND	1.0	1.00	
1,1-Dichloroethene	ND	1.0	1.00	
c-1,2-Dichloroethene	ND	1.0	1.00	
t-1,2-Dichloroethene	ND	1.0	1.00	
1,2-Dichloropropane	ND	1.0	1.00	
1,3-Dichloropropane	ND	1.0	1.00	
2,2-Dichloropropane	ND	5.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/13/18
1920 Main Street, Suite 300		Work Order:	18-03-1060
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444329.001			Page 14 of 15

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.0	1.00	
c-1,3-Dichloropropene	ND	1.0	1.00	
t-1,3-Dichloropropene	ND	2.0	1.00	
Ethylbenzene	ND	1.0	1.00	
2-Hexanone	ND	20	1.00	
Isopropylbenzene	ND	1.0	1.00	
p-Isopropyltoluene	ND	1.0	1.00	
Methylene Chloride	ND	10	1.00	
4-Methyl-2-Pentanone	ND	20	1.00	
Naphthalene	ND	10	1.00	
n-Propylbenzene	ND	2.0	1.00	
Styrene	ND	1.0	1.00	
1,1,1,2-Tetrachloroethane	ND	1.0	1.00	
1,1,2,2-Tetrachloroethane	ND	2.0	1.00	
Tetrachloroethene	ND	1.0	1.00	
Toluene	ND	1.0	1.00	
1,2,3-Trichlorobenzene	ND	2.0	1.00	
1,2,4-Trichlorobenzene	ND	2.0	1.00	
1,1,1-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.00	
Trichloroethene	ND	2.0	1.00	
Trichlorofluoromethane	ND	10	1.00	
1,2,3-Trichloropropane	ND	2.0	1.00	
1,2,4-Trimethylbenzene	ND	2.0	1.00	
1,3,5-Trimethylbenzene	ND	2.0	1.00	
Vinyl Acetate	ND	10	1.00	
Vinyl Chloride	ND	1.0	1.00	
p/m-Xylene	ND	2.0	1.00	
o-Xylene	ND	1.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.0	1.00	
Tert-Butyl Alcohol (TBA)	ND	20	1.00	
Diisopropyl Ether (DIPE)	ND	1.0	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.0	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.0	1.00	
Ethanol	ND	500	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	94	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/13/18
1920 Main Street, Suite 300		Work Order:	18-03-1060
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444329.001			Page 15 of 15

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	104	79-133	
1,2-Dichloroethane-d4	105	71-155	
Toluene-d8	101	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Quality Control - LCS/LCSD

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444329.001

Date Received: 03/13/18
Work Order: 18-03-1060
Preparation: EPA 5035
Method: EPA 8260B

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
095-01-025-29762	**LCS**	**Solid**	**GC/MS QQ**	**03/14/18**	**03/14/18 09:48**	**180314L015**
095-01-025-29762	**LCSD**	**Solid**	**GC/MS QQ**	**03/14/18**	**03/14/18 10:15**	**180314L015**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Benzene	50.00	52.79	106	46.04	92	80-120	73-127	14	0-20	
Carbon Tetrachloride	50.00	54.72	109	47.56	95	65-137	53-149	14	0-20	
Chlorobenzene	50.00	51.94	104	45.17	90	80-120	73-127	14	0-20	
1,2-Dibromoethane	50.00	53.61	107	45.50	91	80-120	73-127	16	0-20	
1,2-Dichlorobenzene	50.00	54.02	108	46.55	93	80-120	73-127	15	0-20	
1,2-Dichloroethane	50.00	52.55	105	46.27	93	80-120	73-127	13	0-20	
1,1-Dichloroethene	50.00	54.42	109	47.98	96	68-128	58-138	13	0-20	
Ethylbenzene	50.00	54.90	110	47.52	95	80-120	73-127	14	0-20	
Toluene	50.00	53.11	106	46.59	93	80-120	73-127	13	0-20	
Trichloroethene	50.00	54.42	109	47.61	95	80-120	73-127	13	0-20	
Vinyl Chloride	50.00	45.50	91	44.54	89	67-127	57-137	2	0-20	
p/m-Xylene	100.0	109.7	110	95.54	96	75-125	67-133	14	0-25	
o-Xylene	50.00	55.57	111	49.00	98	75-125	67-133	13	0-25	
Methyl-t-Butyl Ether (MTBE)	50.00	51.67	103	45.33	91	70-124	61-133	13	0-20	
Tert-Butyl Alcohol (TBA)	250.0	251.8	101	217.1	87	73-121	65-129	15	0-20	
Diisopropyl Ether (DIPE)	50.00	53.83	108	47.08	94	69-129	59-139	13	0-20	
Ethyl-t-Butyl Ether (ETBE)	50.00	53.36	107	46.73	93	70-124	61-133	13	0-20	
Tert-Amyl-Methyl Ether (TAME)	50.00	53.02	106	46.54	93	74-122	66-130	13	0-20	
Ethanol	500.0	479.9	96	408.4	82	51-135	37-149	16	0-27	

Total number of LCS compounds: 19
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

RPD: Relative Percent Difference. CL: Control Limits

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Sample Analysis Summary Report

Work Order: 18-03-1060 Page 1 of 1

Method	Extraction	Chemist ID	Instrument	Analytical Location
EPA 8260B	EPA 5035	486	GC/MS QQ	2

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Glossary of Terms and Qualifiers

Work Order: 18-03-1060 Page 1 of 1

Qualifiers	Definition
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
CI	See case narrative.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

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Virendra Patel

From: Stewart Emhof <Stewart.Emhof@erm.com>
Sent: Wednesday, March 14, 2018 12:36 PM
To: Erick Ovalle
Cc: Virendra Patel; Tony Parenteau; Maggie Tymkow; Daniel Berney
Subject: RE: Sample receipt confirmation / 18-03-1060 / Infineon

EXTERNAL EMAIL*

Erick,
Confirming:
The sample that was submitted with an ID, “B2-3-29” collected at 08:50 should have been labeled as “B2-3-17”
The sample labeled as “B2-3-29”, collected at 09:10 is correct.

Thank you,
Stewart

Stewart A. Emhof
Program Director

ERM
1920 Main Street, Suite 300 | Irvine, CA | 92614
T 949 623 4700 | **D** 949 623 4678 | **M** 714 501 0671
E Stewart.Emhof@erm.com | **W** www.erm.com

From: Erick Ovalle [mailto:ErickOvalle@eurofinsUS.com]
Sent: Wednesday, March 14, 2018 11:31 AM
To: Brad Cross <Brad.Cross@erm.com>; Tony Parenteau <Tony.Parenteau@erm.com>; Maggie Tymkow <Maggie.Tymkow@erm.com>; Stewart Emhof <Stewart.Emhof@erm.com>; Daniel Berney <Daniel.Berney@erm.com>
Cc: virendra patel <VirendraPatel@eurofinsUS.com>
Subject: Sample receipt confirmation / 18-03-1060 / Infineon

Sample receipt confirmation attached. Please review and advise of any changes required.

A 2oz plastic jar for sample -2 was received that had an ID referencing sample -3. We were able to match the contianer to sample -2 based on the date/time.

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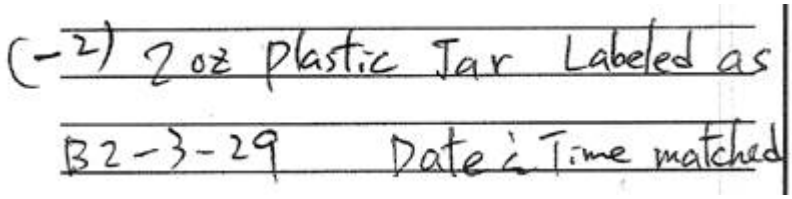

Please call with any questions or concerns.

Best Regards,
Erick Ovalle
Project Manager Assistant

Eurofins Calscience
7440 Lincoln Way
Garden Grove, CA 92841-1427
USA
Phone: +1 (714) 895-5494

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7440 Lincoln Way, Garden Grove, CA 92841-1427 • (714) 895-5494
For courier service / sample drop off information, contact us26_sales@eurofinsus.com or call us.

CHAIN-OF-CUSTODY RECORD

Date 3/13/18

Page 1 of 1

WO NO. / LAB USE ONLY

18-03-1060

LABORATORY CLIENT: ERM

ADDRESS: 1920 Main St.

CITY: Irvine STATE: CA ZIP: 92614

TEL:

E-MAIL: Brad.Cross@erm.com, Tony.Parenteau@erm.com, Maggie.Tymkow@erm.com, Stewart.Embt@erm.com

CLIENT PROJECT NAME / NO.: Infineon

P.O. NO.: 0444392.001

PROJECT CONTACT: Maggie Tymkow

LAB CONTACT OR QUOTE NO: Virendra Patel

GLOBAL ID:

LOG CODE:

SAMPLER(S): (PRINT) Daniel Berney

TURNAROUND TIME (Rush surcharges may apply to any TAT not "STANDARD"):

☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAYS ☒ STANDARD

EDD

☐ COELT EDF ☐ OTHER

SPECIAL INSTRUCTIONS:

REQUESTED ANALYSES

Please check box or fill in blank as needed.

LAB USE ONLY	SAMPLE ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	Unpreserved	Preserved	Field Filtered	☐ TPH(g) ☐ GRO	☐ TPH(d) ☐ DRO	TPH ☐ C6-C36 ☐ C6-C44	TPH ____	BTEX / MTBE ☐ 8260 ☐ ____	VOCs (8260)	Oxygenates (8260)	Prep (5035) ☐ En Core ☒ Terra Core	SVOCs (8270)	Pesticides (8081)	PCBs (8082)	PAHs ☐ 8270 ☐ 8270 SIM	T22 Metals ☐ 6010/747X ☐ 6020/747X	Cr(VI) ☐ 7196 ☐ 7199 ☐ 218.6				
1	B2-3-5	3/13/18	08:40	Soil	1 kit									✓												
2	B2-3-17	3/13/18	08:50	Soil	1 kit									✓												
3	B2-3-29	3/13/18	09:10	Soil	1 kit									✓												
4	B2-3-54	3/13/18	10:35	Soil	1 kit									✓												

Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date: 3/13/18	Time: 1515
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date: 3/13/18	Time: 1835
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:

2016-04-01-Revision

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WORK ORDER NUMBER: 18-03-1060

SAMPLE RECEIPT CHECKLIST

COOLER 1 OF 1

CLIENT: ERM

DATE: 03/13/2018

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)

Thermometer ID: SC6 (CF: +0.2°C); Temperature (w/o CF): 2.6 °C (w/ CF): 2.8 °C; ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____)

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling

☐ Sample(s) received at ambient temperature; placed on ice for transport by courier

Ambient Temperature: ☐ Air ☐ Filter Checked by: 1091

CUSTODY SEAL:

Cooler ☐ Present and Intact ☐ Present but Not Intact ☑ Not Present ☐ N/A Checked by: 1091

Sample(s) ☐ Present and Intact ☐ Present but Not Intact ☑ Not Present ☐ N/A Checked by: SW

SAMPLE CONDITION:

	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ Sampling date ☐ Sampling time ☐ Matrix ☐ Number of containers			
☐ No analysis requested ☐ Not relinquished ☐ No relinquished date ☐ No relinquished time			
Sampler's name indicated on COC	☑	☐	☐
Sample container label(s) consistent with COC	☑ Time	☑ 3/13/18	☐
Sample container(s) intact and in good condition	☑	☐	☐
Proper containers for analyses requested	☑	☐	☐
Sufficient volume/mass for analyses requested	☑	☐	☐
Samples received within holding time	☑	☐	☐
Aqueous samples for certain analyses received within 15-minute holding time			
☐ pH ☐ Residual Chlorine ☐ Dissolved Sulfide ☐ Dissolved Oxygen	☐	☐	☑
Proper preservation chemical(s) noted on COC and/or sample container	☑	☐	☐
Unpreserved aqueous sample(s) received for certain analyses			
☐ Volatile Organics ☐ Total Metals ☐ Dissolved Metals			
Acid/base preserved samples - pH within acceptable range	☐	☐	☑
Container(s) for certain analysis free of headspace	☐	☐	☑
☐ Volatile Organics ☐ Dissolved Gases (RSK-175) ☐ Dissolved Oxygen (SM 4500)			
☐ Carbon Dioxide (SM 4500) ☐ Ferrous Iron (SM 3500) ☐ Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE: (Trip Blank Lot Number: _____)

Aqueous: ☐ VOA ☐ VOAh ☐ VOAna_2 ☐ 100PJ ☐ 100PJna_2 ☐ 125AGB ☐ 125AGBh ☐ 125AGBp ☐ 125PB ☐ 125PBznna (pH__9)
☐ 250AGB ☐ 250CGB ☐ 250CGBs (pH__2) ☐ 250PB ☐ 250PBn (pH__2) ☐ 500AGB ☐ 500AGJ ☐ 500AGJs (pH__2) ☐ 500PB
☐ 1AGB ☐ 1AGBna_2 ☐ 1AGBs (pH__2) ☐ 1AGBs (O&G) ☐ 1PB ☐ 1PBna (pH__12) ☐ _____ ☐ _____ ☐ _____
Solid: ☐ 4ozCGJ ☐ 8ozCGJ ☐ 16ozCGJ ☐ Sleeve (___) ☐ EnCores® (___) ☑ TerraCores® (3) ☑ 2oz PS ☐ _____ ☐ _____
Air: ☐ Tedlar™ ☐ Canister ☐ Sorbent Tube ☐ PUF ☐ _____ **Other Matrix** (_____): ☐ _____ ☐ _____ ☐ _____

Container: **A** = Amber, **B** = Bottle, **C** = Clear, **E** = Envelope, **G** = Glass, **J** = Jar, **P** = Plastic, and **Z** = Ziploc/Resealable Bag

Preservative: **b** = buffered, **f** = filtered, **h** = HCl, **n** = HNO_3, **na** = NaOH, **na_2** = $Na_2S_2O_3$, **p** = H_3PO_4, **s** = H_2SO_4, **u** = ultra-pure, **x** = Na_2SO_3+$NaHSO_4.H_2O$, **znna** = Zn $(CH_3CO_2)_2$ + NaOH

Labeled/Checked by: SW

Reviewed by: JY

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WORK ORDER NUMBER: 18-03- 1060

SAMPLE ANOMALY REPORT

DATE: 03 / 13 / 2018

SAMPLES, CONTAINERS, AND LABELS:

Comments

- ☐ Sample(s) NOT RECEIVED but listed on COC
- ☐ Sample(s) received but NOT LISTED on COC
- ☐ Holding time expired (list client or ECI sample ID and analysis)
- ☐ Insufficient sample amount for requested analysis (list analysis)
- ☐ Improper container(s) used (list analysis)
- ☐ Improper preservative used (list analysis)
- ☐ pH outside acceptable range (list analysis)
- ☐ No preservative noted on COC or label (list analysis and notify lab)
- ☐ Sample container(s) not labeled
- ☐ Client sample label(s) illegible (list container type and analysis)
- ☑ Client sample label(s) do not match COC (comment)
  - ☐ Project information
  - ☑ Client sample ID
  - ☐ Sampling date and/or time
  - ☐ Number of container(s)
  - ☐ Requested analysis

(-2) 2oz plastic Jar Labeled as B2-3-29 Date & Time matched

- ☐ Sample container(s) compromised (comment)
  - ☐ Broken
  - ☐ Water present in sample container
- ☐ Air sample container(s) compromised (comment)
  - ☐ Flat
  - ☐ Very low in volume
  - ☐ Leaking (not transferred; duplicate bag submitted)
  - ☐ Leaking (transferred into ECI Tedlar™ bags*)
  - ☐ Leaking (transferred into client's Tedlar™ bags*)

* Transferred at client's request.

MISCELLANEOUS: (Describe)

Comments

HEADSPACE:

(Containers with bubble > 6 mm or ¼ inch for volatile organic or dissolved gas analysis)

ECI Sample ID	ECI Container ID	Total Number**	ECI Sample ID	ECI Container ID	Total Number**

(Containers with bubble for other analysis)

ECI Sample ID	ECI Container ID	Total Number**	Requested Analysis

Comments: _____

Reported by: SDV

Reviewed by: TM

** Record the total number of containers (i.e., vials or bottles) for the affected sample.

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WORK ORDER NUMBER: 18-03-1295

The difference is service

AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: ERM-WEST

Client Project Name: Infineon / 0444392.002

Attention: Maggie Tymkow
1920 Main Street
Suite 300
Irvine, CA 92614-7279

Approved for release on 03/23/2018 by:
Virendra Patel
Project Manager

ResultLink

Email your PM

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Client Project Name: Infineon / 0444392.002
Work Order Number: 18-03-1295

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Work Order Narrative

Work Order: 18-03-1295 Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 03/15/18. They were assigned to Work Order 18-03-1295.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

DoD Projects:

The test results contained in this report are accredited under the laboratory's ISO/IEC 17025:2005 and DoD-ELAP accreditation issued by the ANSI-ASQ National Accreditation Board. Refer to certificate and scope of accreditation ADE-1864.

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Sample Summary

Client:	ERM-WEST 1920 Main Street, Suite 300 Irvine, CA 92614-7279	Work Order:	18-03-1295
		Project Name:	Infineon / 0444392.002
		PO Number:	0444392.002
		Date/Time Received:	03/15/18 17:50
		Number of Containers:	15
Attn:	Maggie Tymkow		

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
B2-7-6	18-03-1295-1	03/15/18 09:10	3	Solid
B2-7-13	18-03-1295-2	03/15/18 09:15	3	Solid
B2-7-28	18-03-1295-3	03/15/18 09:30	3	Solid
B2-7-55	18-03-1295-4	03/15/18 10:05	3	Solid
B2-7-80	18-03-1295-5	03/15/18 10:35	3	Solid

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Detections Summary

Client:	ERM-WEST 1920 Main Street, Suite 300 Irvine, CA 92614-7279	Work Order:	18-03-1295
		Project Name:	Infineon / 0444392.002
		Received:	03/15/18
Attn:	Maggie Tymkow		Page 1 of 1

Client SampleID

Analyte	Result	Qualifiers	RL	Units	Method	Extraction
B2-7-6 (18-03-1295-1)						
Tetrachloroethene	2.3		0.88	ug/kg	EPA 8260B	EPA 5035

Subcontracted analyses, if any, are not included in this summary.

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* MDL is shown

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392.002

Date Received: 03/15/18
Work Order: 18-03-1295
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B2-7-6	**18-03-1295-1-C**	**03/15/18 09:10**	**Solid**	**GC/MS QQ**	**03/15/18**	**03/16/18 14:08**	**180316L018**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	44	1.00	
Benzene	ND	0.88	1.00	
Bromobenzene	ND	0.88	1.00	
Bromochloromethane	ND	1.8	1.00	
Bromodichloromethane	ND	0.88	1.00	
Bromoform	ND	4.4	1.00	
Bromomethane	ND	18	1.00	
2-Butanone	ND	18	1.00	
n-Butylbenzene	ND	0.88	1.00	
sec-Butylbenzene	ND	0.88	1.00	
tert-Butylbenzene	ND	0.88	1.00	
Carbon Disulfide	ND	8.8	1.00	
Carbon Tetrachloride	ND	0.88	1.00	
Chlorobenzene	ND	0.88	1.00	
Chloroethane	ND	1.8	1.00	
Chloroform	ND	0.88	1.00	
Chloromethane	ND	18	1.00	
2-Chlorotoluene	ND	0.88	1.00	
4-Chlorotoluene	ND	0.88	1.00	
Dibromochloromethane	ND	1.8	1.00	
1,2-Dibromo-3-Chloropropane	ND	4.4	1.00	
1,2-Dibromoethane	ND	0.88	1.00	
Dibromomethane	ND	0.88	1.00	
1,2-Dichlorobenzene	ND	0.88	1.00	
1,3-Dichlorobenzene	ND	0.88	1.00	
1,4-Dichlorobenzene	ND	0.88	1.00	
Dichlorodifluoromethane	ND	1.8	1.00	
1,1-Dichloroethane	ND	0.88	1.00	
1,2-Dichloroethane	ND	0.88	1.00	
1,1-Dichloroethene	ND	0.88	1.00	
c-1,2-Dichloroethene	ND	0.88	1.00	
t-1,2-Dichloroethene	ND	0.88	1.00	
1,2-Dichloropropane	ND	0.88	1.00	
1,3-Dichloropropane	ND	0.88	1.00	
2,2-Dichloropropane	ND	4.4	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/18
1920 Main Street, Suite 300		Work Order:	18-03-1295
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392.002			Page 2 of 18

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	1.8	1.00	
c-1,3-Dichloropropene	ND	0.88	1.00	
t-1,3-Dichloropropene	ND	1.8	1.00	
Ethylbenzene	ND	0.88	1.00	
2-Hexanone	ND	18	1.00	
Isopropylbenzene	ND	0.88	1.00	
p-Isopropyltoluene	ND	0.88	1.00	
Methylene Chloride	ND	8.8	1.00	
4-Methyl-2-Pentanone	ND	18	1.00	
Naphthalene	ND	8.8	1.00	
n-Propylbenzene	ND	1.8	1.00	
Styrene	ND	0.88	1.00	
1,1,1,2-Tetrachloroethane	ND	0.88	1.00	
1,1,2,2-Tetrachloroethane	ND	1.8	1.00	
Tetrachloroethene	2.3	0.88	1.00	
Toluene	ND	0.88	1.00	
1,2,3-Trichlorobenzene	ND	1.8	1.00	
1,2,4-Trichlorobenzene	ND	1.8	1.00	
1,1,1-Trichloroethane	ND	0.88	1.00	
1,1,2-Trichloroethane	ND	0.88	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	8.8	1.00	
Trichloroethene	ND	1.8	1.00	
Trichlorofluoromethane	ND	8.8	1.00	
1,2,3-Trichloropropane	ND	1.8	1.00	
1,2,4-Trimethylbenzene	ND	1.8	1.00	
1,3,5-Trimethylbenzene	ND	1.8	1.00	
Vinyl Acetate	ND	8.8	1.00	
Vinyl Chloride	ND	0.88	1.00	
p/m-Xylene	ND	1.8	1.00	
o-Xylene	ND	0.88	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	1.8	1.00	
Tert-Butyl Alcohol (TBA)	ND	18	1.00	
Diisopropyl Ether (DIPE)	ND	0.88	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.88	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.88	1.00	
Ethanol	ND	440	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	95	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/18
1920 Main Street, Suite 300		Work Order:	18-03-1295
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392.002			Page 3 of 18

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	105	79-133	
1,2-Dichloroethane-d4	110	71-155	
Toluene-d8	101	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392.002

Date Received: 03/15/18
Work Order: 18-03-1295
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B2-7-13	**18-03-1295-2-C**	**03/15/18 09:15**	**Solid**	**GC/MS QQ**	**03/15/18**	**03/16/18 14:36**	**180316L018**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	58	1.00	
Benzene	ND	1.2	1.00	
Bromobenzene	ND	1.2	1.00	
Bromochloromethane	ND	2.3	1.00	
Bromodichloromethane	ND	1.2	1.00	
Bromoform	ND	5.8	1.00	
Bromomethane	ND	23	1.00	
2-Butanone	ND	23	1.00	
n-Butylbenzene	ND	1.2	1.00	
sec-Butylbenzene	ND	1.2	1.00	
tert-Butylbenzene	ND	1.2	1.00	
Carbon Disulfide	ND	12	1.00	
Carbon Tetrachloride	ND	1.2	1.00	
Chlorobenzene	ND	1.2	1.00	
Chloroethane	ND	2.3	1.00	
Chloroform	ND	1.2	1.00	
Chloromethane	ND	23	1.00	
2-Chlorotoluene	ND	1.2	1.00	
4-Chlorotoluene	ND	1.2	1.00	
Dibromochloromethane	ND	2.3	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.8	1.00	
1,2-Dibromoethane	ND	1.2	1.00	
Dibromomethane	ND	1.2	1.00	
1,2-Dichlorobenzene	ND	1.2	1.00	
1,3-Dichlorobenzene	ND	1.2	1.00	
1,4-Dichlorobenzene	ND	1.2	1.00	
Dichlorodifluoromethane	ND	2.3	1.00	
1,1-Dichloroethane	ND	1.2	1.00	
1,2-Dichloroethane	ND	1.2	1.00	
1,1-Dichloroethene	ND	1.2	1.00	
c-1,2-Dichloroethene	ND	1.2	1.00	
t-1,2-Dichloroethene	ND	1.2	1.00	
1,2-Dichloropropane	ND	1.2	1.00	
1,3-Dichloropropane	ND	1.2	1.00	
2,2-Dichloropropane	ND	5.8	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/18
1920 Main Street, Suite 300		Work Order:	18-03-1295
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392.002			Page 5 of 18

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.3	1.00	
c-1,3-Dichloropropene	ND	1.2	1.00	
t-1,3-Dichloropropene	ND	2.3	1.00	
Ethylbenzene	ND	1.2	1.00	
2-Hexanone	ND	23	1.00	
Isopropylbenzene	ND	1.2	1.00	
p-Isopropyltoluene	ND	1.2	1.00	
Methylene Chloride	ND	12	1.00	
4-Methyl-2-Pentanone	ND	23	1.00	
Naphthalene	ND	12	1.00	
n-Propylbenzene	ND	2.3	1.00	
Styrene	ND	1.2	1.00	
1,1,1,2-Tetrachloroethane	ND	1.2	1.00	
1,1,2,2-Tetrachloroethane	ND	2.3	1.00	
Tetrachloroethene	ND	1.2	1.00	
Toluene	ND	1.2	1.00	
1,2,3-Trichlorobenzene	ND	2.3	1.00	
1,2,4-Trichlorobenzene	ND	2.3	1.00	
1,1,1-Trichloroethane	ND	1.2	1.00	
1,1,2-Trichloroethane	ND	1.2	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	12	1.00	
Trichloroethene	ND	2.3	1.00	
Trichlorofluoromethane	ND	12	1.00	
1,2,3-Trichloropropane	ND	2.3	1.00	
1,2,4-Trimethylbenzene	ND	2.3	1.00	
1,3,5-Trimethylbenzene	ND	2.3	1.00	
Vinyl Acetate	ND	12	1.00	
Vinyl Chloride	ND	1.2	1.00	
p/m-Xylene	ND	2.3	1.00	
o-Xylene	ND	1.2	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.3	1.00	
Tert-Butyl Alcohol (TBA)	ND	23	1.00	
Diisopropyl Ether (DIPE)	ND	1.2	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.2	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.2	1.00	
Ethanol	ND	580	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	92	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/18
1920 Main Street, Suite 300		Work Order:	18-03-1295
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392.002			Page 6 of 18

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	102	79-133	
1,2-Dichloroethane-d4	110	71-155	
Toluene-d8	101	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392.002

Date Received: 03/15/18
Work Order: 18-03-1295
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B2-7-28	**18-03-1295-3-C**	**03/15/18 09:30**	**Solid**	**GC/MS QQ**	**03/15/18**	**03/16/18 15:03**	**180316L018**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	53	1.00	
Benzene	ND	1.1	1.00	
Bromobenzene	ND	1.1	1.00	
Bromochloromethane	ND	2.1	1.00	
Bromodichloromethane	ND	1.1	1.00	
Bromoform	ND	5.3	1.00	
Bromomethane	ND	21	1.00	
2-Butanone	ND	21	1.00	
n-Butylbenzene	ND	1.1	1.00	
sec-Butylbenzene	ND	1.1	1.00	
tert-Butylbenzene	ND	1.1	1.00	
Carbon Disulfide	ND	11	1.00	
Carbon Tetrachloride	ND	1.1	1.00	
Chlorobenzene	ND	1.1	1.00	
Chloroethane	ND	2.1	1.00	
Chloroform	ND	1.1	1.00	
Chloromethane	ND	21	1.00	
2-Chlorotoluene	ND	1.1	1.00	
4-Chlorotoluene	ND	1.1	1.00	
Dibromochloromethane	ND	2.1	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.3	1.00	
1,2-Dibromoethane	ND	1.1	1.00	
Dibromomethane	ND	1.1	1.00	
1,2-Dichlorobenzene	ND	1.1	1.00	
1,3-Dichlorobenzene	ND	1.1	1.00	
1,4-Dichlorobenzene	ND	1.1	1.00	
Dichlorodifluoromethane	ND	2.1	1.00	
1,1-Dichloroethane	ND	1.1	1.00	
1,2-Dichloroethane	ND	1.1	1.00	
1,1-Dichloroethene	ND	1.1	1.00	
c-1,2-Dichloroethene	ND	1.1	1.00	
t-1,2-Dichloroethene	ND	1.1	1.00	
1,2-Dichloropropane	ND	1.1	1.00	
1,3-Dichloropropane	ND	1.1	1.00	
2,2-Dichloropropane	ND	5.3	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/18
1920 Main Street, Suite 300		Work Order:	18-03-1295
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392.002			Page 8 of 18

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.1	1.00	
c-1,3-Dichloropropene	ND	1.1	1.00	
t-1,3-Dichloropropene	ND	2.1	1.00	
Ethylbenzene	ND	1.1	1.00	
2-Hexanone	ND	21	1.00	
Isopropylbenzene	ND	1.1	1.00	
p-Isopropyltoluene	ND	1.1	1.00	
Methylene Chloride	ND	11	1.00	
4-Methyl-2-Pentanone	ND	21	1.00	
Naphthalene	ND	11	1.00	
n-Propylbenzene	ND	2.1	1.00	
Styrene	ND	1.1	1.00	
1,1,1,2-Tetrachloroethane	ND	1.1	1.00	
1,1,2,2-Tetrachloroethane	ND	2.1	1.00	
Tetrachloroethene	ND	1.1	1.00	
Toluene	ND	1.1	1.00	
1,2,3-Trichlorobenzene	ND	2.1	1.00	
1,2,4-Trichlorobenzene	ND	2.1	1.00	
1,1,1-Trichloroethane	ND	1.1	1.00	
1,1,2-Trichloroethane	ND	1.1	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	11	1.00	
Trichloroethene	ND	2.1	1.00	
Trichlorofluoromethane	ND	11	1.00	
1,2,3-Trichloropropane	ND	2.1	1.00	
1,2,4-Trimethylbenzene	ND	2.1	1.00	
1,3,5-Trimethylbenzene	ND	2.1	1.00	
Vinyl Acetate	ND	11	1.00	
Vinyl Chloride	ND	1.1	1.00	
p/m-Xylene	ND	2.1	1.00	
o-Xylene	ND	1.1	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.1	1.00	
Tert-Butyl Alcohol (TBA)	ND	21	1.00	
Diisopropyl Ether (DIPE)	ND	1.1	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.1	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.1	1.00	
Ethanol	ND	530	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	93	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/18
1920 Main Street, Suite 300		Work Order:	18-03-1295
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392.002			Page 9 of 18

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	105	79-133	
1,2-Dichloroethane-d4	112	71-155	
Toluene-d8	100	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392.002

Date Received: 03/15/18
Work Order: 18-03-1295
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B2-7-55	**18-03-1295-4-C**	**03/15/18 10:05**	**Solid**	**GC/MS QQ**	**03/15/18**	**03/16/18 15:31**	**180316L018**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	56	1.00	
Benzene	ND	1.1	1.00	
Bromobenzene	ND	1.1	1.00	
Bromochloromethane	ND	2.2	1.00	
Bromodichloromethane	ND	1.1	1.00	
Bromoform	ND	5.6	1.00	
Bromomethane	ND	22	1.00	
2-Butanone	ND	22	1.00	
n-Butylbenzene	ND	1.1	1.00	
sec-Butylbenzene	ND	1.1	1.00	
tert-Butylbenzene	ND	1.1	1.00	
Carbon Disulfide	ND	11	1.00	
Carbon Tetrachloride	ND	1.1	1.00	
Chlorobenzene	ND	1.1	1.00	
Chloroethane	ND	2.2	1.00	
Chloroform	ND	1.1	1.00	
Chloromethane	ND	22	1.00	
2-Chlorotoluene	ND	1.1	1.00	
4-Chlorotoluene	ND	1.1	1.00	
Dibromochloromethane	ND	2.2	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.6	1.00	
1,2-Dibromoethane	ND	1.1	1.00	
Dibromomethane	ND	1.1	1.00	
1,2-Dichlorobenzene	ND	1.1	1.00	
1,3-Dichlorobenzene	ND	1.1	1.00	
1,4-Dichlorobenzene	ND	1.1	1.00	
Dichlorodifluoromethane	ND	2.2	1.00	
1,1-Dichloroethane	ND	1.1	1.00	
1,2-Dichloroethane	ND	1.1	1.00	
1,1-Dichloroethene	ND	1.1	1.00	
c-1,2-Dichloroethene	ND	1.1	1.00	
t-1,2-Dichloroethene	ND	1.1	1.00	
1,2-Dichloropropane	ND	1.1	1.00	
1,3-Dichloropropane	ND	1.1	1.00	
2,2-Dichloropropane	ND	5.6	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/18
1920 Main Street, Suite 300		Work Order:	18-03-1295
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392.002			Page 11 of 18

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.2	1.00	
c-1,3-Dichloropropene	ND	1.1	1.00	
t-1,3-Dichloropropene	ND	2.2	1.00	
Ethylbenzene	ND	1.1	1.00	
2-Hexanone	ND	22	1.00	
Isopropylbenzene	ND	1.1	1.00	
p-Isopropyltoluene	ND	1.1	1.00	
Methylene Chloride	ND	11	1.00	
4-Methyl-2-Pentanone	ND	22	1.00	
Naphthalene	ND	11	1.00	
n-Propylbenzene	ND	2.2	1.00	
Styrene	ND	1.1	1.00	
1,1,1,2-Tetrachloroethane	ND	1.1	1.00	
1,1,2,2-Tetrachloroethane	ND	2.2	1.00	
Tetrachloroethene	ND	1.1	1.00	
Toluene	ND	1.1	1.00	
1,2,3-Trichlorobenzene	ND	2.2	1.00	
1,2,4-Trichlorobenzene	ND	2.2	1.00	
1,1,1-Trichloroethane	ND	1.1	1.00	
1,1,2-Trichloroethane	ND	1.1	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	11	1.00	
Trichloroethene	ND	2.2	1.00	
Trichlorofluoromethane	ND	11	1.00	
1,2,3-Trichloropropane	ND	2.2	1.00	
1,2,4-Trimethylbenzene	ND	2.2	1.00	
1,3,5-Trimethylbenzene	ND	2.2	1.00	
Vinyl Acetate	ND	11	1.00	
Vinyl Chloride	ND	1.1	1.00	
p/m-Xylene	ND	2.2	1.00	
o-Xylene	ND	1.1	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.2	1.00	
Tert-Butyl Alcohol (TBA)	ND	22	1.00	
Diisopropyl Ether (DIPE)	ND	1.1	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.1	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.1	1.00	
Ethanol	ND	560	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	93	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/18
1920 Main Street, Suite 300		Work Order:	18-03-1295
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392.002			Page 12 of 18

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	106	79-133	
1,2-Dichloroethane-d4	112	71-155	
Toluene-d8	100	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392.002

Date Received: 03/15/18
Work Order: 18-03-1295
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B2-7-80	**18-03-1295-5-C**	**03/15/18 10:35**	**Solid**	**GC/MS QQ**	**03/15/18**	**03/16/18 15:59**	**180316L018**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	68	1.00	
Benzene	ND	1.4	1.00	
Bromobenzene	ND	1.4	1.00	
Bromochloromethane	ND	2.7	1.00	
Bromodichloromethane	ND	1.4	1.00	
Bromoform	ND	6.8	1.00	
Bromomethane	ND	27	1.00	
2-Butanone	ND	27	1.00	
n-Butylbenzene	ND	1.4	1.00	
sec-Butylbenzene	ND	1.4	1.00	
tert-Butylbenzene	ND	1.4	1.00	
Carbon Disulfide	ND	14	1.00	
Carbon Tetrachloride	ND	1.4	1.00	
Chlorobenzene	ND	1.4	1.00	
Chloroethane	ND	2.7	1.00	
Chloroform	ND	1.4	1.00	
Chloromethane	ND	27	1.00	
2-Chlorotoluene	ND	1.4	1.00	
4-Chlorotoluene	ND	1.4	1.00	
Dibromochloromethane	ND	2.7	1.00	
1,2-Dibromo-3-Chloropropane	ND	6.8	1.00	
1,2-Dibromoethane	ND	1.4	1.00	
Dibromomethane	ND	1.4	1.00	
1,2-Dichlorobenzene	ND	1.4	1.00	
1,3-Dichlorobenzene	ND	1.4	1.00	
1,4-Dichlorobenzene	ND	1.4	1.00	
Dichlorodifluoromethane	ND	2.7	1.00	
1,1-Dichloroethane	ND	1.4	1.00	
1,2-Dichloroethane	ND	1.4	1.00	
1,1-Dichloroethene	ND	1.4	1.00	
c-1,2-Dichloroethene	ND	1.4	1.00	
t-1,2-Dichloroethene	ND	1.4	1.00	
1,2-Dichloropropane	ND	1.4	1.00	
1,3-Dichloropropane	ND	1.4	1.00	
2,2-Dichloropropane	ND	6.8	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/18
1920 Main Street, Suite 300		Work Order:	18-03-1295
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392.002			Page 14 of 18

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.7	1.00	
c-1,3-Dichloropropene	ND	1.4	1.00	
t-1,3-Dichloropropene	ND	2.7	1.00	
Ethylbenzene	ND	1.4	1.00	
2-Hexanone	ND	27	1.00	
Isopropylbenzene	ND	1.4	1.00	
p-Isopropyltoluene	ND	1.4	1.00	
Methylene Chloride	ND	14	1.00	
4-Methyl-2-Pentanone	ND	27	1.00	
Naphthalene	ND	14	1.00	
n-Propylbenzene	ND	2.7	1.00	
Styrene	ND	1.4	1.00	
1,1,1,2-Tetrachloroethane	ND	1.4	1.00	
1,1,2,2-Tetrachloroethane	ND	2.7	1.00	
Tetrachloroethene	ND	1.4	1.00	
Toluene	ND	1.4	1.00	
1,2,3-Trichlorobenzene	ND	2.7	1.00	
1,2,4-Trichlorobenzene	ND	2.7	1.00	
1,1,1-Trichloroethane	ND	1.4	1.00	
1,1,2-Trichloroethane	ND	1.4	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	14	1.00	
Trichloroethene	ND	2.7	1.00	
Trichlorofluoromethane	ND	14	1.00	
1,2,3-Trichloropropane	ND	2.7	1.00	
1,2,4-Trimethylbenzene	ND	2.7	1.00	
1,3,5-Trimethylbenzene	ND	2.7	1.00	
Vinyl Acetate	ND	14	1.00	
Vinyl Chloride	ND	1.4	1.00	
p/m-Xylene	ND	2.7	1.00	
o-Xylene	ND	1.4	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.7	1.00	
Tert-Butyl Alcohol (TBA)	ND	27	1.00	
Diisopropyl Ether (DIPE)	ND	1.4	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.4	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.4	1.00	
Ethanol	ND	680	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	93	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/18
1920 Main Street, Suite 300		Work Order:	18-03-1295
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392.002			Page 15 of 18

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	105	79-133	
1,2-Dichloroethane-d4	111	71-155	
Toluene-d8	99	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392.002

Date Received: 03/15/18
Work Order: 18-03-1295
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**095-01-025-29775**	**N/A**	**Solid**	**GC/MS QQ**	**03/16/18**	**03/16/18 12:45**	**180316L018**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	50	1.00	
Benzene	ND	1.0	1.00	
Bromobenzene	ND	1.0	1.00	
Bromochloromethane	ND	2.0	1.00	
Bromodichloromethane	ND	1.0	1.00	
Bromoform	ND	5.0	1.00	
Bromomethane	ND	20	1.00	
2-Butanone	ND	20	1.00	
n-Butylbenzene	ND	1.0	1.00	
sec-Butylbenzene	ND	1.0	1.00	
tert-Butylbenzene	ND	1.0	1.00	
Carbon Disulfide	ND	10	1.00	
Carbon Tetrachloride	ND	1.0	1.00	
Chlorobenzene	ND	1.0	1.00	
Chloroethane	ND	2.0	1.00	
Chloroform	ND	1.0	1.00	
Chloromethane	ND	20	1.00	
2-Chlorotoluene	ND	1.0	1.00	
4-Chlorotoluene	ND	1.0	1.00	
Dibromochloromethane	ND	2.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.0	1.00	
1,2-Dibromoethane	ND	1.0	1.00	
Dibromomethane	ND	1.0	1.00	
1,2-Dichlorobenzene	ND	1.0	1.00	
1,3-Dichlorobenzene	ND	1.0	1.00	
1,4-Dichlorobenzene	ND	1.0	1.00	
Dichlorodifluoromethane	ND	2.0	1.00	
1,1-Dichloroethane	ND	1.0	1.00	
1,2-Dichloroethane	ND	1.0	1.00	
1,1-Dichloroethene	ND	1.0	1.00	
c-1,2-Dichloroethene	ND	1.0	1.00	
t-1,2-Dichloroethene	ND	1.0	1.00	
1,2-Dichloropropane	ND	1.0	1.00	
1,3-Dichloropropane	ND	1.0	1.00	
2,2-Dichloropropane	ND	5.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/18
1920 Main Street, Suite 300		Work Order:	18-03-1295
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392.002			Page 17 of 18

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.0	1.00	
c-1,3-Dichloropropene	ND	1.0	1.00	
t-1,3-Dichloropropene	ND	2.0	1.00	
Ethylbenzene	ND	1.0	1.00	
2-Hexanone	ND	20	1.00	
Isopropylbenzene	ND	1.0	1.00	
p-Isopropyltoluene	ND	1.0	1.00	
Methylene Chloride	ND	10	1.00	
4-Methyl-2-Pentanone	ND	20	1.00	
Naphthalene	ND	10	1.00	
n-Propylbenzene	ND	2.0	1.00	
Styrene	ND	1.0	1.00	
1,1,1,2-Tetrachloroethane	ND	1.0	1.00	
1,1,2,2-Tetrachloroethane	ND	2.0	1.00	
Tetrachloroethene	ND	1.0	1.00	
Toluene	ND	1.0	1.00	
1,2,3-Trichlorobenzene	ND	2.0	1.00	
1,2,4-Trichlorobenzene	ND	2.0	1.00	
1,1,1-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.00	
Trichloroethene	ND	2.0	1.00	
Trichlorofluoromethane	ND	10	1.00	
1,2,3-Trichloropropane	ND	2.0	1.00	
1,2,4-Trimethylbenzene	ND	2.0	1.00	
1,3,5-Trimethylbenzene	ND	2.0	1.00	
Vinyl Acetate	ND	10	1.00	
Vinyl Chloride	ND	1.0	1.00	
p/m-Xylene	ND	2.0	1.00	
o-Xylene	ND	1.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.0	1.00	
Tert-Butyl Alcohol (TBA)	ND	20	1.00	
Diisopropyl Ether (DIPE)	ND	1.0	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.0	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.0	1.00	
Ethanol	ND	500	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	95	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/15/18
1920 Main Street, Suite 300		Work Order:	18-03-1295
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392.002			Page 18 of 18

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	104	79-133	
1,2-Dichloroethane-d4	100	71-155	
Toluene-d8	102	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Quality Control - LCS/LCSD

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392.002

Date Received: 03/15/18
Work Order: 18-03-1295
Preparation: EPA 5035
Method: EPA 8260B

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
095-01-025-29775	**LCS**	**Solid**	**GC/MS QQ**	**03/16/18**	**03/16/18 11:09**	**180316L018**
095-01-025-29775	**LCSD**	**Solid**	**GC/MS QQ**	**03/16/18**	**03/16/18 11:37**	**180316L018**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Benzene	50.00	48.31	97	45.80	92	80-120	73-127	5	0-20	
Carbon Tetrachloride	50.00	49.11	98	45.23	90	65-137	53-149	8	0-20	
Chlorobenzene	50.00	47.80	96	45.43	91	80-120	73-127	5	0-20	
1,2-Dibromoethane	50.00	50.82	102	49.29	99	80-120	73-127	3	0-20	
1,2-Dichlorobenzene	50.00	50.20	100	48.19	96	80-120	73-127	4	0-20	
1,2-Dichloroethane	50.00	49.31	99	47.02	94	80-120	73-127	5	0-20	
1,1-Dichloroethene	50.00	47.69	95	45.10	90	68-128	58-138	6	0-20	
Ethylbenzene	50.00	48.96	98	46.58	93	80-120	73-127	5	0-20	
Toluene	50.00	47.89	96	46.12	92	80-120	73-127	4	0-20	
Trichloroethene	50.00	48.77	98	46.66	93	80-120	73-127	4	0-20	
Vinyl Chloride	50.00	43.88	88	41.66	83	67-127	57-137	5	0-20	
p/m-Xylene	100.0	97.35	97	93.29	93	75-125	67-133	4	0-25	
o-Xylene	50.00	50.09	100	48.39	97	75-125	67-133	3	0-25	
Methyl-t-Butyl Ether (MTBE)	50.00	49.65	99	47.60	95	70-124	61-133	4	0-20	
Tert-Butyl Alcohol (TBA)	250.0	236.6	95	230.6	92	73-121	65-129	3	0-20	
Diisopropyl Ether (DIPE)	50.00	50.32	101	47.28	95	69-129	59-139	6	0-20	
Ethyl-t-Butyl Ether (ETBE)	50.00	50.94	102	49.09	98	70-124	61-133	4	0-20	
Tert-Amyl-Methyl Ether (TAME)	50.00	51.68	103	49.84	100	74-122	66-130	4	0-20	
Ethanol	500.0	394.0	79	388.6	78	51-135	37-149	1	0-27	

Total number of LCS compounds: 19
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

RPD: Relative Percent Difference. CL: Control Limits

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Sample Analysis Summary Report

Work Order: 18-03-1295 Page 1 of 1

Method	Extraction	Chemist ID	Instrument	Analytical Location
EPA 8260B	EPA 5035	486	GC/MS QQ	2

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Glossary of Terms and Qualifiers

Work Order: 18-03-1295 Page 1 of 1

Qualifiers	Definition
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
CI	See case narrative.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.
	Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.
	Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.
	A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

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7440 Lincoln Way, Garden Grove, CA 92841-1427 • (714) 895-5494
For courier service / sample drop off information, contact us26_sales@eurofinsus.com or call us.

CHAIN-OF-CUSTODY RECORD

Date 3/15/18
Page 1 of 1

WO NO. / LAB USE ONLY
18-03-1295

LABORATORY CLIENT: ERM
ADDRESS: 1920 Main St.
CITY: Irvine STATE: CA ZIP: 92614
TEL: 949 623 4700
E-MAIL: Brad.Cross@erm.com / Tony.Parenteau@erm.com / Maggie.Tymkow@erm.com / Stewart.Embs@erm.com

CLIENT PROJECT NAME / NO.: Inthean
P.O. NO.: 0444392.002
PROJECT CONTACT: Maggie Tymkow
LAB CONTACT OR QUOTE NO: Virendra Patel
GLOBAL ID:
LOG CODE:
SAMPLER(S): (PRINT) Daniel Berney

TURNAROUND TIME (Rush surcharges may apply to any TAT not "STANDARD"):
☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAYS ☑ STANDARD

EDD
☐ COELT EDF ☐ OTHER

SPECIAL INSTRUCTIONS:

REQUESTED ANALYSES
Please check box or fill in blank as needed.

LAB USE ONLY	SAMPLE ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	Unpreserved	Preserved	Field Filtered	☐ TPH(g) ☐ GRO	☐ TPH(d) ☐ DRO	TPH ☐ C6-C36 ☐ C6-C44	TPH	BTEX / MTBE ☐ 8260 ☐	VOCs (8260)	Oxygenates (8260)	Prep (5035) ☐ En Core ☑ Terra Core	SVOCs (8270)	Pesticides (8081)	PCBs (8082)	PAHs ☐ 8270 ☐ 8270 SIM	T22 Metals ☐ 6010/747X ☐ 6020/747X	Cr(VI) ☐ 7196 ☐ 7199 ☐ 218.6				
1	B2-7-6	3/15/18	0910	Soil	1 kit									✓		✓										
2	B2-7-13	↓	0915	↓	↓									✓		✓										
3	B2-7-28		0930											✓		✓										
4	B2-7-55		1005											✓		✓										
5	B2-7-80		1035											✓		✓										

Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date: 3/15/18	Time: 1430
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date: 3/15/18	Time: 1750
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:

2016-04-01-Revision

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WORK ORDER NUMBER: 18-03-1295

SAMPLE RECEIPT CHECKLIST

COOLER 1 OF 1

CLIENT: ERM

DATE: 03/15/2018

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)

Thermometer ID: SC6 (CF: +0.2°C); Temperature (w/o CF): 2.0 °C (w/ CF): 2.2 °C; ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____)

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling

☐ Sample(s) received at ambient temperature; placed on ice for transport by courier

Ambient Temperature: ☐ Air ☐ Filter

Checked by: 1091

CUSTODY SEAL:

Cooler	☐ Present and Intact	☐ Present but Not Intact	☑ Not Present	☐ N/A	Checked by: 1091
Sample(s)	☐ Present and Intact	☐ Present but Not Intact	☑ Not Present	☐ N/A	Checked by: SR

SAMPLE CONDITION:	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ Sampling date ☐ Sampling time ☐ Matrix ☐ Number of containers			
☐ No analysis requested ☐ Not relinquished ☐ No relinquished date ☐ No relinquished time			
Sampler's name indicated on COC	☑	☐	☐
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and in good condition	☑ 3/14/18	☑	☐
Proper containers for analyses requested	☑	☐	☐
Sufficient volume/mass for analyses requested	☑	☐	☐
Samples received within holding time	☑	☐	☐
Aqueous samples for certain analyses received within 15-minute holding time			
☐ pH ☐ Residual Chlorine ☐ Dissolved Sulfide ☐ Dissolved Oxygen	☐	☐	☑
Proper preservation chemical(s) noted on COC and/or sample container	☑	☐	☐
Unpreserved aqueous sample(s) received for certain analyses			
☐ Volatile Organics ☐ Total Metals ☐ Dissolved Metals			
Acid/base preserved samples - pH within acceptable range	☐	☐	☑
Container(s) for certain analysis free of headspace	☐	☐	☑
☐ Volatile Organics ☐ Dissolved Gases (RSK-175) ☐ Dissolved Oxygen (SM 4500)			
☐ Carbon Dioxide (SM 4500) ☐ Ferrous Iron (SM 3500) ☐ Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE: (Trip Blank Lot Number: _____)

Aqueous: ☐ VOA ☐ VOA**h** ☐ VOA**na$_2$** ☐ 100PJ ☐ 100PJ**na$_2$** ☐ 125AGB ☐ 125AGB**h** ☐ 125AGB**p** ☐ 125PB ☐ 125PB**znna** (pH__9)

☐ 250AGB ☐ 250CGB ☐ 250CGB**s** (pH__2) ☐ 250PB ☐ 250PB**n** (pH__2) ☐ 500AGB ☐ 500AGJ ☐ 500AGJ**s** (pH__2) ☐ 500PB

☐ 1AGB ☐ 1AGB**na$_2$** ☐ 1AGB**s** (pH__2) ☐ 1AGB**s** (O&G) ☐ 1PB ☐ 1PB**na** (pH__12) ☐ _____ ☐ _____ ☐ _____

Solid: ☐ 4ozCGJ ☐ 8ozCGJ ☐ 16ozCGJ ☐ Sleeve (___) ☐ EnCores® (___) ☑ TerraCores® (3) ☑ 2oz PT ☐ _____ ☐ _____

Air: ☐ Tedlar™ ☐ Canister ☐ Sorbent Tube ☐ PUF ☐ _____ **Other Matrix** (_____): ☐ _____ ☐ _____ ☐ _____

Container: **A** = Amber, **B** = Bottle, **C** = Clear, **E** = Envelope, **G** = Glass, **J** = Jar, **P** = Plastic, and **Z** = Ziploc/Resealable Bag

Preservative: **b** = buffered, **f** = filtered, **h** = HCl, **n** = HNO_3, **na** = NaOH, **na$_2$** = $Na_2S_2O_3$, **p** = H_3PO_4, **s** = H_2SO_4, **u** = ultra-pure, **x** = Na_2SO_3+$NaHSO_4.H_2O$, **znna** = Zn $(CH_3CO_2)_2$ + NaOH

Labeled/Checked by: SR

Reviewed by: 1091

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WORK ORDER NUMBER: 18-03-1295

SAMPLE ANOMALY REPORT

DATE: 03 / 15 / 2018

SAMPLES, CONTAINERS, AND LABELS:

- ☐ Sample(s) NOT RECEIVED but listed on COC
- ☐ Sample(s) received but NOT LISTED on COC
- ☐ Holding time expired (list client or ECI sample ID and analysis)
- ☐ Insufficient sample amount for requested analysis (list analysis)
- ☐ Improper container(s) used (list analysis)
- ☐ Improper preservative used (list analysis)
- ☐ pH outside acceptable range (list analysis)
- ☐ No preservative noted on COC or label (list analysis and notify lab)
- ☐ Sample container(s) not labeled
- ☐ Client sample label(s) illegible (list container type and analysis)
- ☐ Client sample label(s) do not match COC (comment)
  - ☐ Project information
  - ☐ Client sample ID
  - ☐ Sampling date and/or time
  - ☐ Number of container(s)
  - ☐ Requested analysis
- ☐ Sample container(s) compromised (comment)
  - ☐ Broken
  - ☐ Water present in sample container
- ☐ Air sample container(s) compromised (comment)
  - ☐ Flat
  - ☐ Very low in volume
  - ☐ Leaking (not transferred; duplicate bag submitted)
  - ☐ Leaking (transferred into ECI Tedlar™ bags*)
  - ☐ Leaking (transferred into client's Tedlar™ bags*)

* Transferred at client's request.

Comments

*(-2) Terracore MeOH vial received dry (leaked out of vial).

MISCELLANEOUS: (Describe)

* OTHER

Comments

HEADSPACE:

(Containers with bubble > 6 mm or ¼ inch for volatile organic or dissolved gas analysis)

ECI Sample ID	ECI Container ID	Total Number**	ECI Sample ID	ECI Container ID	Total Number**

(Containers with bubble for other analysis)

ECI Sample ID	ECI Container ID	Total Number**	Requested Analysis

Comments: _____

** Record the total number of containers (i.e., vials or bottles) for the affected sample.

Reported by: _____

Reviewed by: _____

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WORK ORDER NUMBER: 18-03-1433

The difference is service

AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: ERM-WEST

Client Project Name: Infineon / 0444392.002

Attention: Maggie Tymkow
1920 Main Street
Suite 300
Irvine, CA 92614-7279

Approved for release on 03/27/2018 by:
Virendra Patel
Project Manager

ResultLink

Email your PM

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Work Order Number: 18-03-1433

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Work Order Narrative

Work Order: 18-03-1433 Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 03/16/18. They were assigned to Work Order 18-03-1433.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

DoD Projects:

The test results contained in this report are accredited under the laboratory's ISO/IEC 17025:2005 and DoD-ELAP accreditation issued by the ANSI-ASQ National Accreditation Board. Refer to certificate and scope of accreditation ADE-1864.

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Sample Summary

Client:	ERM-WEST	Work Order:	18-03-1433
	1920 Main Street, Suite 300	Project Name:	Infineon / 0444392.002
	Irvine, CA 92614-7279	PO Number:	0444392.002
		Date/Time Received:	03/16/18 17:40
		Number of Containers:	26
Attn:	Maggie Tymkow		

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
B2-6-5	18-03-1433-1	03/16/18 08:10	4	Solid
B2-6-16	18-03-1433-2	03/16/18 08:16	4	Solid
B2-6-28	18-03-1433-3	03/16/18 08:30	4	Solid
B2-6-55	18-03-1433-4	03/16/18 08:57	4	Solid
B2-6-80	18-03-1433-5	03/16/18 09:42	4	Solid
B2-16-16	18-03-1433-6	03/16/18 08:16	4	Solid
Trip Blk	18-03-1433-7	03/16/18 00:00	2	Aqueous

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Detections Summary

Client:	ERM-WEST	Work Order:	18-03-1433
	1920 Main Street, Suite 300	Project Name:	Infineon / 0444392.002
	Irvine, CA 92614-7279	Received:	03/16/18
Attn:	Maggie Tymkow		Page 1 of 1

Client SampleID

Analyte	Result	Qualifiers	RL	Units	Method	Extraction
B2-6-5 (18-03-1433-1)						
Tetrachloroethene	3.5		0.91	ug/kg	EPA 8260B	EPA 5035
Trichloroethene	1.9		1.8	ug/kg	EPA 8260B	EPA 5035
B2-6-80 (18-03-1433-5)						
Tetrachloroethene	2.3		1.1	ug/kg	EPA 8260B	EPA 5035

Subcontracted analyses, if any, are not included in this summary.

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* MDL is shown

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/16/18
Work Order: 18-03-1433
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

Project: Infineon / 0444392.002

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Trip Blk	**18-03-1433-7-A**	**03/16/18 00:00**	**Aqueous**	**GC/MS CC**	**03/23/18**	**03/23/18 12:37**	**180323L006**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	20	1.00	
Benzene	ND	0.50	1.00	
Bromobenzene	ND	1.0	1.00	
Bromochloromethane	ND	1.0	1.00	
Bromodichloromethane	ND	1.0	1.00	
Bromoform	ND	1.0	1.00	
Bromomethane	ND	10	1.00	
2-Butanone	ND	10	1.00	
n-Butylbenzene	ND	1.0	1.00	
sec-Butylbenzene	ND	1.0	1.00	
tert-Butylbenzene	ND	1.0	1.00	
Carbon Disulfide	ND	10	1.00	
Carbon Tetrachloride	ND	0.50	1.00	
Chlorobenzene	ND	1.0	1.00	
Chloroethane	ND	5.0	1.00	
Chloroform	ND	1.0	1.00	
Chloromethane	ND	10	1.00	
2-Chlorotoluene	ND	1.0	1.00	
4-Chlorotoluene	ND	1.0	1.00	
Dibromochloromethane	ND	1.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.0	1.00	
1,2-Dibromoethane	ND	1.0	1.00	
Dibromomethane	ND	1.0	1.00	
1,2-Dichlorobenzene	ND	1.0	1.00	
1,3-Dichlorobenzene	ND	1.0	1.00	
1,4-Dichlorobenzene	ND	1.0	1.00	
Dichlorodifluoromethane	ND	1.0	1.00	
1,1-Dichloroethane	ND	1.0	1.00	
1,2-Dichloroethane	ND	0.50	1.00	
1,1-Dichloroethene	ND	1.0	1.00	
c-1,2-Dichloroethene	ND	1.0	1.00	
t-1,2-Dichloroethene	ND	1.0	1.00	
1,2-Dichloropropane	ND	1.0	1.00	
1,3-Dichloropropane	ND	1.0	1.00	
2,2-Dichloropropane	ND	1.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392.002

Date Received: 03/16/18
Work Order: 18-03-1433
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	1.0	1.00	
c-1,3-Dichloropropene	ND	0.50	1.00	
t-1,3-Dichloropropene	ND	0.50	1.00	
Ethylbenzene	ND	1.0	1.00	
2-Hexanone	ND	10	1.00	
Isopropylbenzene	ND	1.0	1.00	
p-Isopropyltoluene	ND	1.0	1.00	
Methylene Chloride	ND	10	1.00	
4-Methyl-2-Pentanone	ND	10	1.00	
Naphthalene	ND	10	1.00	
n-Propylbenzene	ND	1.0	1.00	
Styrene	ND	1.0	1.00	
1,1,1,2-Tetrachloroethane	ND	1.0	1.00	
1,1,2,2-Tetrachloroethane	ND	1.0	1.00	
Tetrachloroethene	ND	1.0	1.00	
Toluene	ND	1.0	1.00	
1,2,3-Trichlorobenzene	ND	1.0	1.00	
1,2,4-Trichlorobenzene	ND	1.0	1.00	
1,1,1-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.00	
1,1,2-Trichloroethane	ND	1.0	1.00	
Trichloroethene	ND	1.0	1.00	
Trichlorofluoromethane	ND	10	1.00	
1,2,3-Trichloropropane	ND	5.0	1.00	
1,2,4-Trimethylbenzene	ND	1.0	1.00	
1,3,5-Trimethylbenzene	ND	1.0	1.00	
Vinyl Acetate	ND	10	1.00	
Vinyl Chloride	ND	0.50	1.00	
p/m-Xylene	ND	1.0	1.00	
o-Xylene	ND	1.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	1.0	1.00	
Tert-Butyl Alcohol (TBA)	ND	10	1.00	
Diisopropyl Ether (DIPE)	ND	2.0	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	2.0	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	2.0	1.00	
Ethanol	ND	100	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	100	77-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/16/18
1920 Main Street, Suite 300		Work Order:	18-03-1433
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/L
Project: Infineon / 0444392.002			Page 3 of 6

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	101	80-128	
1,2-Dichloroethane-d4	102	80-129	
Toluene-d8	98	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/16/18
Work Order: 18-03-1433
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

Project: Infineon / 0444392.002

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-14-001-25478**	**N/A**	**Aqueous**	**GC/MS CC**	**03/23/18**	**03/23/18 11:12**	**180323L006**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	20	1.00	
Benzene	ND	0.50	1.00	
Bromobenzene	ND	1.0	1.00	
Bromochloromethane	ND	1.0	1.00	
Bromodichloromethane	ND	1.0	1.00	
Bromoform	ND	1.0	1.00	
Bromomethane	ND	10	1.00	
2-Butanone	ND	10	1.00	
n-Butylbenzene	ND	1.0	1.00	
sec-Butylbenzene	ND	1.0	1.00	
tert-Butylbenzene	ND	1.0	1.00	
Carbon Disulfide	ND	10	1.00	
Carbon Tetrachloride	ND	0.50	1.00	
Chlorobenzene	ND	1.0	1.00	
Chloroethane	ND	5.0	1.00	
Chloroform	ND	1.0	1.00	
Chloromethane	ND	10	1.00	
2-Chlorotoluene	ND	1.0	1.00	
4-Chlorotoluene	ND	1.0	1.00	
Dibromochloromethane	ND	1.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.0	1.00	
1,2-Dibromoethane	ND	1.0	1.00	
Dibromomethane	ND	1.0	1.00	
1,2-Dichlorobenzene	ND	1.0	1.00	
1,3-Dichlorobenzene	ND	1.0	1.00	
1,4-Dichlorobenzene	ND	1.0	1.00	
Dichlorodifluoromethane	ND	1.0	1.00	
1,1-Dichloroethane	ND	1.0	1.00	
1,2-Dichloroethane	ND	0.50	1.00	
1,1-Dichloroethene	ND	1.0	1.00	
c-1,2-Dichloroethene	ND	1.0	1.00	
t-1,2-Dichloroethene	ND	1.0	1.00	
1,2-Dichloropropane	ND	1.0	1.00	
1,3-Dichloropropane	ND	1.0	1.00	
2,2-Dichloropropane	ND	1.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/16/18
1920 Main Street, Suite 300	Work Order:	18-03-1433
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/L
Project: Infineon / 0444392.002		Page 5 of 6

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	1.0	1.00	
c-1,3-Dichloropropene	ND	0.50	1.00	
t-1,3-Dichloropropene	ND	0.50	1.00	
Ethylbenzene	ND	1.0	1.00	
2-Hexanone	ND	10	1.00	
Isopropylbenzene	ND	1.0	1.00	
p-Isopropyltoluene	ND	1.0	1.00	
Methylene Chloride	ND	10	1.00	
4-Methyl-2-Pentanone	ND	10	1.00	
Naphthalene	ND	10	1.00	
n-Propylbenzene	ND	1.0	1.00	
Styrene	ND	1.0	1.00	
1,1,1,2-Tetrachloroethane	ND	1.0	1.00	
1,1,2,2-Tetrachloroethane	ND	1.0	1.00	
Tetrachloroethene	ND	1.0	1.00	
Toluene	ND	1.0	1.00	
1,2,3-Trichlorobenzene	ND	1.0	1.00	
1,2,4-Trichlorobenzene	ND	1.0	1.00	
1,1,1-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.00	
1,1,2-Trichloroethane	ND	1.0	1.00	
Trichloroethene	ND	1.0	1.00	
Trichlorofluoromethane	ND	10	1.00	
1,2,3-Trichloropropane	ND	5.0	1.00	
1,2,4-Trimethylbenzene	ND	1.0	1.00	
1,3,5-Trimethylbenzene	ND	1.0	1.00	
Vinyl Acetate	ND	10	1.00	
Vinyl Chloride	ND	0.50	1.00	
p/m-Xylene	ND	1.0	1.00	
o-Xylene	ND	1.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	1.0	1.00	
Tert-Butyl Alcohol (TBA)	ND	10	1.00	
Diisopropyl Ether (DIPE)	ND	2.0	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	2.0	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	2.0	1.00	
Ethanol	ND	100	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	101	77-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/16/18
1920 Main Street, Suite 300		Work Order:	18-03-1433
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/L
Project: Infineon / 0444392.002			Page 6 of 6

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	101	80-128	
1,2-Dichloroethane-d4	101	80-129	
Toluene-d8	99	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392.002

Date Received: 03/16/18
Work Order: 18-03-1433
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B2-6-5	**18-03-1433-1-D**	**03/16/18 08:10**	**Solid**	**GC/MS LL**	**03/16/18**	**03/22/18 12:31**	**180322L010**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	46	1.00	
Benzene	ND	0.91	1.00	
Bromobenzene	ND	0.91	1.00	
Bromochloromethane	ND	1.8	1.00	
Bromodichloromethane	ND	0.91	1.00	
Bromoform	ND	4.6	1.00	
Bromomethane	ND	18	1.00	
2-Butanone	ND	18	1.00	
n-Butylbenzene	ND	0.91	1.00	
sec-Butylbenzene	ND	0.91	1.00	
tert-Butylbenzene	ND	0.91	1.00	
Carbon Disulfide	ND	9.1	1.00	
Carbon Tetrachloride	ND	0.91	1.00	
Chlorobenzene	ND	0.91	1.00	
Chloroethane	ND	1.8	1.00	
Chloroform	ND	0.91	1.00	
Chloromethane	ND	18	1.00	
2-Chlorotoluene	ND	0.91	1.00	
4-Chlorotoluene	ND	0.91	1.00	
Dibromochloromethane	ND	1.8	1.00	
1,2-Dibromo-3-Chloropropane	ND	4.6	1.00	
1,2-Dibromoethane	ND	0.91	1.00	
Dibromomethane	ND	0.91	1.00	
1,2-Dichlorobenzene	ND	0.91	1.00	
1,3-Dichlorobenzene	ND	0.91	1.00	
1,4-Dichlorobenzene	ND	0.91	1.00	
Dichlorodifluoromethane	ND	1.8	1.00	
1,1-Dichloroethane	ND	0.91	1.00	
1,2-Dichloroethane	ND	0.91	1.00	
1,1-Dichloroethene	ND	0.91	1.00	
c-1,2-Dichloroethene	ND	0.91	1.00	
t-1,2-Dichloroethene	ND	0.91	1.00	
1,2-Dichloropropane	ND	0.91	1.00	
1,3-Dichloropropane	ND	0.91	1.00	
2,2-Dichloropropane	ND	4.6	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/16/18
1920 Main Street, Suite 300		Work Order:	18-03-1433
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392.002			Page 2 of 21

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	1.8	1.00	
c-1,3-Dichloropropene	ND	0.91	1.00	
t-1,3-Dichloropropene	ND	1.8	1.00	
Ethylbenzene	ND	0.91	1.00	
2-Hexanone	ND	18	1.00	
Isopropylbenzene	ND	0.91	1.00	
p-Isopropyltoluene	ND	0.91	1.00	
Methylene Chloride	ND	9.1	1.00	
4-Methyl-2-Pentanone	ND	18	1.00	
Naphthalene	ND	9.1	1.00	
n-Propylbenzene	ND	1.8	1.00	
Styrene	ND	0.91	1.00	
1,1,1,2-Tetrachloroethane	ND	0.91	1.00	
1,1,2,2-Tetrachloroethane	ND	1.8	1.00	
Tetrachloroethene	3.5	0.91	1.00	
Toluene	ND	0.91	1.00	
1,2,3-Trichlorobenzene	ND	1.8	1.00	
1,2,4-Trichlorobenzene	ND	1.8	1.00	
1,1,1-Trichloroethane	ND	0.91	1.00	
1,1,2-Trichloroethane	ND	0.91	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	9.1	1.00	
Trichloroethene	1.9	1.8	1.00	
Trichlorofluoromethane	ND	9.1	1.00	
1,2,3-Trichloropropane	ND	1.8	1.00	
1,2,4-Trimethylbenzene	ND	1.8	1.00	
1,3,5-Trimethylbenzene	ND	1.8	1.00	
Vinyl Acetate	ND	9.1	1.00	
Vinyl Chloride	ND	0.91	1.00	
p/m-Xylene	ND	1.8	1.00	
o-Xylene	ND	0.91	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	1.8	1.00	
Tert-Butyl Alcohol (TBA)	ND	18	1.00	
Diisopropyl Ether (DIPE)	ND	0.91	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.91	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.91	1.00	
Ethanol	ND	460	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	99	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/16/18
1920 Main Street, Suite 300		Work Order:	18-03-1433
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392.002			Page 3 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	96	79-133	
1,2-Dichloroethane-d4	105	71-155	
Toluene-d8	99	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392.002

Date Received: 03/16/18
Work Order: 18-03-1433
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B2-6-16	**18-03-1433-2-D**	**03/16/18 08:16**	**Solid**	**GC/MS LL**	**03/16/18**	**03/22/18 12:58**	**180322L010**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	52	1.00	
Benzene	ND	1.0	1.00	
Bromobenzene	ND	1.0	1.00	
Bromochloromethane	ND	2.1	1.00	
Bromodichloromethane	ND	1.0	1.00	
Bromoform	ND	5.2	1.00	
Bromomethane	ND	21	1.00	
2-Butanone	ND	21	1.00	
n-Butylbenzene	ND	1.0	1.00	
sec-Butylbenzene	ND	1.0	1.00	
tert-Butylbenzene	ND	1.0	1.00	
Carbon Disulfide	ND	10	1.00	
Carbon Tetrachloride	ND	1.0	1.00	
Chlorobenzene	ND	1.0	1.00	
Chloroethane	ND	2.1	1.00	
Chloroform	ND	1.0	1.00	
Chloromethane	ND	21	1.00	
2-Chlorotoluene	ND	1.0	1.00	
4-Chlorotoluene	ND	1.0	1.00	
Dibromochloromethane	ND	2.1	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.2	1.00	
1,2-Dibromoethane	ND	1.0	1.00	
Dibromomethane	ND	1.0	1.00	
1,2-Dichlorobenzene	ND	1.0	1.00	
1,3-Dichlorobenzene	ND	1.0	1.00	
1,4-Dichlorobenzene	ND	1.0	1.00	
Dichlorodifluoromethane	ND	2.1	1.00	
1,1-Dichloroethane	ND	1.0	1.00	
1,2-Dichloroethane	ND	1.0	1.00	
1,1-Dichloroethene	ND	1.0	1.00	
c-1,2-Dichloroethene	ND	1.0	1.00	
t-1,2-Dichloroethene	ND	1.0	1.00	
1,2-Dichloropropane	ND	1.0	1.00	
1,3-Dichloropropane	ND	1.0	1.00	
2,2-Dichloropropane	ND	5.2	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/16/18
1920 Main Street, Suite 300		Work Order:	18-03-1433
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392.002			Page 5 of 21

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.1	1.00	
c-1,3-Dichloropropene	ND	1.0	1.00	
t-1,3-Dichloropropene	ND	2.1	1.00	
Ethylbenzene	ND	1.0	1.00	
2-Hexanone	ND	21	1.00	
Isopropylbenzene	ND	1.0	1.00	
p-Isopropyltoluene	ND	1.0	1.00	
Methylene Chloride	ND	10	1.00	
4-Methyl-2-Pentanone	ND	21	1.00	
Naphthalene	ND	10	1.00	
n-Propylbenzene	ND	2.1	1.00	
Styrene	ND	1.0	1.00	
1,1,1,2-Tetrachloroethane	ND	1.0	1.00	
1,1,2,2-Tetrachloroethane	ND	2.1	1.00	
Tetrachloroethene	ND	1.0	1.00	
Toluene	ND	1.0	1.00	
1,2,3-Trichlorobenzene	ND	2.1	1.00	
1,2,4-Trichlorobenzene	ND	2.1	1.00	
1,1,1-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.00	
Trichloroethene	ND	2.1	1.00	
Trichlorofluoromethane	ND	10	1.00	
1,2,3-Trichloropropane	ND	2.1	1.00	
1,2,4-Trimethylbenzene	ND	2.1	1.00	
1,3,5-Trimethylbenzene	ND	2.1	1.00	
Vinyl Acetate	ND	10	1.00	
Vinyl Chloride	ND	1.0	1.00	
p/m-Xylene	ND	2.1	1.00	
o-Xylene	ND	1.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.1	1.00	
Tert-Butyl Alcohol (TBA)	ND	21	1.00	
Diisopropyl Ether (DIPE)	ND	1.0	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.0	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.0	1.00	
Ethanol	ND	520	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	99	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/16/18
1920 Main Street, Suite 300		Work Order:	18-03-1433
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392.002			Page 6 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	105	79-133	
1,2-Dichloroethane-d4	108	71-155	
Toluene-d8	101	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392.002

Date Received: 03/16/18
Work Order: 18-03-1433
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B2-6-28	**18-03-1433-3-D**	**03/16/18 08:30**	**Solid**	**GC/MS LL**	**03/16/18**	**03/22/18 13:25**	**180322L010**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	54	1.00	
Benzene	ND	1.1	1.00	
Bromobenzene	ND	1.1	1.00	
Bromochloromethane	ND	2.2	1.00	
Bromodichloromethane	ND	1.1	1.00	
Bromoform	ND	5.4	1.00	
Bromomethane	ND	22	1.00	
2-Butanone	ND	22	1.00	
n-Butylbenzene	ND	1.1	1.00	
sec-Butylbenzene	ND	1.1	1.00	
tert-Butylbenzene	ND	1.1	1.00	
Carbon Disulfide	ND	11	1.00	
Carbon Tetrachloride	ND	1.1	1.00	
Chlorobenzene	ND	1.1	1.00	
Chloroethane	ND	2.2	1.00	
Chloroform	ND	1.1	1.00	
Chloromethane	ND	22	1.00	
2-Chlorotoluene	ND	1.1	1.00	
4-Chlorotoluene	ND	1.1	1.00	
Dibromochloromethane	ND	2.2	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.4	1.00	
1,2-Dibromoethane	ND	1.1	1.00	
Dibromomethane	ND	1.1	1.00	
1,2-Dichlorobenzene	ND	1.1	1.00	
1,3-Dichlorobenzene	ND	1.1	1.00	
1,4-Dichlorobenzene	ND	1.1	1.00	
Dichlorodifluoromethane	ND	2.2	1.00	
1,1-Dichloroethane	ND	1.1	1.00	
1,2-Dichloroethane	ND	1.1	1.00	
1,1-Dichloroethene	ND	1.1	1.00	
c-1,2-Dichloroethene	ND	1.1	1.00	
t-1,2-Dichloroethene	ND	1.1	1.00	
1,2-Dichloropropane	ND	1.1	1.00	
1,3-Dichloropropane	ND	1.1	1.00	
2,2-Dichloropropane	ND	5.4	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/16/18
1920 Main Street, Suite 300		Work Order:	18-03-1433
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392.002			Page 8 of 21

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.2	1.00	
c-1,3-Dichloropropene	ND	1.1	1.00	
t-1,3-Dichloropropene	ND	2.2	1.00	
Ethylbenzene	ND	1.1	1.00	
2-Hexanone	ND	22	1.00	
Isopropylbenzene	ND	1.1	1.00	
p-Isopropyltoluene	ND	1.1	1.00	
Methylene Chloride	ND	11	1.00	
4-Methyl-2-Pentanone	ND	22	1.00	
Naphthalene	ND	11	1.00	
n-Propylbenzene	ND	2.2	1.00	
Styrene	ND	1.1	1.00	
1,1,1,2-Tetrachloroethane	ND	1.1	1.00	
1,1,2,2-Tetrachloroethane	ND	2.2	1.00	
Tetrachloroethene	ND	1.1	1.00	
Toluene	ND	1.1	1.00	
1,2,3-Trichlorobenzene	ND	2.2	1.00	
1,2,4-Trichlorobenzene	ND	2.2	1.00	
1,1,1-Trichloroethane	ND	1.1	1.00	
1,1,2-Trichloroethane	ND	1.1	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	11	1.00	
Trichloroethene	ND	2.2	1.00	
Trichlorofluoromethane	ND	11	1.00	
1,2,3-Trichloropropane	ND	2.2	1.00	
1,2,4-Trimethylbenzene	ND	2.2	1.00	
1,3,5-Trimethylbenzene	ND	2.2	1.00	
Vinyl Acetate	ND	11	1.00	
Vinyl Chloride	ND	1.1	1.00	
p/m-Xylene	ND	2.2	1.00	
o-Xylene	ND	1.1	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.2	1.00	
Tert-Butyl Alcohol (TBA)	ND	22	1.00	
Diisopropyl Ether (DIPE)	ND	1.1	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.1	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.1	1.00	
Ethanol	ND	540	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	98	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/16/18
1920 Main Street, Suite 300		Work Order:	18-03-1433
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392.002			Page 9 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	104	79-133	
1,2-Dichloroethane-d4	106	71-155	
Toluene-d8	101	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392.002

Date Received: 03/16/18
Work Order: 18-03-1433
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B2-6-55	**18-03-1433-4-D**	**03/16/18 08:57**	**Solid**	**GC/MS LL**	**03/16/18**	**03/22/18 13:53**	**180322L010**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	56	1.00	
Benzene	ND	1.1	1.00	
Bromobenzene	ND	1.1	1.00	
Bromochloromethane	ND	2.2	1.00	
Bromodichloromethane	ND	1.1	1.00	
Bromoform	ND	5.6	1.00	
Bromomethane	ND	22	1.00	
2-Butanone	ND	22	1.00	
n-Butylbenzene	ND	1.1	1.00	
sec-Butylbenzene	ND	1.1	1.00	
tert-Butylbenzene	ND	1.1	1.00	
Carbon Disulfide	ND	11	1.00	
Carbon Tetrachloride	ND	1.1	1.00	
Chlorobenzene	ND	1.1	1.00	
Chloroethane	ND	2.2	1.00	
Chloroform	ND	1.1	1.00	
Chloromethane	ND	22	1.00	
2-Chlorotoluene	ND	1.1	1.00	
4-Chlorotoluene	ND	1.1	1.00	
Dibromochloromethane	ND	2.2	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.6	1.00	
1,2-Dibromoethane	ND	1.1	1.00	
Dibromomethane	ND	1.1	1.00	
1,2-Dichlorobenzene	ND	1.1	1.00	
1,3-Dichlorobenzene	ND	1.1	1.00	
1,4-Dichlorobenzene	ND	1.1	1.00	
Dichlorodifluoromethane	ND	2.2	1.00	
1,1-Dichloroethane	ND	1.1	1.00	
1,2-Dichloroethane	ND	1.1	1.00	
1,1-Dichloroethene	ND	1.1	1.00	
c-1,2-Dichloroethene	ND	1.1	1.00	
t-1,2-Dichloroethene	ND	1.1	1.00	
1,2-Dichloropropane	ND	1.1	1.00	
1,3-Dichloropropane	ND	1.1	1.00	
2,2-Dichloropropane	ND	5.6	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/16/18
1920 Main Street, Suite 300		Work Order:	18-03-1433
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392.002			Page 11 of 21

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.2	1.00	
c-1,3-Dichloropropene	ND	1.1	1.00	
t-1,3-Dichloropropene	ND	2.2	1.00	
Ethylbenzene	ND	1.1	1.00	
2-Hexanone	ND	22	1.00	
Isopropylbenzene	ND	1.1	1.00	
p-Isopropyltoluene	ND	1.1	1.00	
Methylene Chloride	ND	11	1.00	
4-Methyl-2-Pentanone	ND	22	1.00	
Naphthalene	ND	11	1.00	
n-Propylbenzene	ND	2.2	1.00	
Styrene	ND	1.1	1.00	
1,1,1,2-Tetrachloroethane	ND	1.1	1.00	
1,1,2,2-Tetrachloroethane	ND	2.2	1.00	
Tetrachloroethene	ND	1.1	1.00	
Toluene	ND	1.1	1.00	
1,2,3-Trichlorobenzene	ND	2.2	1.00	
1,2,4-Trichlorobenzene	ND	2.2	1.00	
1,1,1-Trichloroethane	ND	1.1	1.00	
1,1,2-Trichloroethane	ND	1.1	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	11	1.00	
Trichloroethene	ND	2.2	1.00	
Trichlorofluoromethane	ND	11	1.00	
1,2,3-Trichloropropane	ND	2.2	1.00	
1,2,4-Trimethylbenzene	ND	2.2	1.00	
1,3,5-Trimethylbenzene	ND	2.2	1.00	
Vinyl Acetate	ND	11	1.00	
Vinyl Chloride	ND	1.1	1.00	
p/m-Xylene	ND	2.2	1.00	
o-Xylene	ND	1.1	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.2	1.00	
Tert-Butyl Alcohol (TBA)	ND	22	1.00	
Diisopropyl Ether (DIPE)	ND	1.1	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.1	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.1	1.00	
Ethanol	ND	560	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	100	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/16/18
1920 Main Street, Suite 300		Work Order:	18-03-1433
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392.002			Page 12 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	104	79-133	
1,2-Dichloroethane-d4	107	71-155	
Toluene-d8	101	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392.002

Date Received: 03/16/18
Work Order: 18-03-1433
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B2-6-80	**18-03-1433-5-C**	**03/16/18 09:42**	**Solid**	**GC/MS LL**	**03/16/18**	**03/22/18 14:20**	**180322L010**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	56	1.00	
Benzene	ND	1.1	1.00	
Bromobenzene	ND	1.1	1.00	
Bromochloromethane	ND	2.2	1.00	
Bromodichloromethane	ND	1.1	1.00	
Bromoform	ND	5.6	1.00	
Bromomethane	ND	22	1.00	
2-Butanone	ND	22	1.00	
n-Butylbenzene	ND	1.1	1.00	
sec-Butylbenzene	ND	1.1	1.00	
tert-Butylbenzene	ND	1.1	1.00	
Carbon Disulfide	ND	11	1.00	
Carbon Tetrachloride	ND	1.1	1.00	
Chlorobenzene	ND	1.1	1.00	
Chloroethane	ND	2.2	1.00	
Chloroform	ND	1.1	1.00	
Chloromethane	ND	22	1.00	
2-Chlorotoluene	ND	1.1	1.00	
4-Chlorotoluene	ND	1.1	1.00	
Dibromochloromethane	ND	2.2	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.6	1.00	
1,2-Dibromoethane	ND	1.1	1.00	
Dibromomethane	ND	1.1	1.00	
1,2-Dichlorobenzene	ND	1.1	1.00	
1,3-Dichlorobenzene	ND	1.1	1.00	
1,4-Dichlorobenzene	ND	1.1	1.00	
Dichlorodifluoromethane	ND	2.2	1.00	
1,1-Dichloroethane	ND	1.1	1.00	
1,2-Dichloroethane	ND	1.1	1.00	
1,1-Dichloroethene	ND	1.1	1.00	
c-1,2-Dichloroethene	ND	1.1	1.00	
t-1,2-Dichloroethene	ND	1.1	1.00	
1,2-Dichloropropane	ND	1.1	1.00	
1,3-Dichloropropane	ND	1.1	1.00	
2,2-Dichloropropane	ND	5.6	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/16/18
1920 Main Street, Suite 300		Work Order:	18-03-1433
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392.002			Page 14 of 21

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.2	1.00	
c-1,3-Dichloropropene	ND	1.1	1.00	
t-1,3-Dichloropropene	ND	2.2	1.00	
Ethylbenzene	ND	1.1	1.00	
2-Hexanone	ND	22	1.00	
Isopropylbenzene	ND	1.1	1.00	
p-Isopropyltoluene	ND	1.1	1.00	
Methylene Chloride	ND	11	1.00	
4-Methyl-2-Pentanone	ND	22	1.00	
Naphthalene	ND	11	1.00	
n-Propylbenzene	ND	2.2	1.00	
Styrene	ND	1.1	1.00	
1,1,1,2-Tetrachloroethane	ND	1.1	1.00	
1,1,2,2-Tetrachloroethane	ND	2.2	1.00	
Tetrachloroethene	2.3	1.1	1.00	
Toluene	ND	1.1	1.00	
1,2,3-Trichlorobenzene	ND	2.2	1.00	
1,2,4-Trichlorobenzene	ND	2.2	1.00	
1,1,1-Trichloroethane	ND	1.1	1.00	
1,1,2-Trichloroethane	ND	1.1	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	11	1.00	
Trichloroethene	ND	2.2	1.00	
Trichlorofluoromethane	ND	11	1.00	
1,2,3-Trichloropropane	ND	2.2	1.00	
1,2,4-Trimethylbenzene	ND	2.2	1.00	
1,3,5-Trimethylbenzene	ND	2.2	1.00	
Vinyl Acetate	ND	11	1.00	
Vinyl Chloride	ND	1.1	1.00	
p/m-Xylene	ND	2.2	1.00	
o-Xylene	ND	1.1	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.2	1.00	
Tert-Butyl Alcohol (TBA)	ND	22	1.00	
Diisopropyl Ether (DIPE)	ND	1.1	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.1	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.1	1.00	
Ethanol	ND	560	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	100	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/16/18
1920 Main Street, Suite 300		Work Order:	18-03-1433
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392.002			Page 15 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	106	79-133	
1,2-Dichloroethane-d4	109	71-155	
Toluene-d8	99	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392.002

Date Received: 03/16/18
Work Order: 18-03-1433
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B2-16-16	**18-03-1433-6-C**	**03/16/18 08:16**	**Solid**	**GC/MS LL**	**03/16/18**	**03/22/18 14:47**	**180322L010**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	56	1.00	
Benzene	ND	1.1	1.00	
Bromobenzene	ND	1.1	1.00	
Bromochloromethane	ND	2.2	1.00	
Bromodichloromethane	ND	1.1	1.00	
Bromoform	ND	5.6	1.00	
Bromomethane	ND	22	1.00	
2-Butanone	ND	22	1.00	
n-Butylbenzene	ND	1.1	1.00	
sec-Butylbenzene	ND	1.1	1.00	
tert-Butylbenzene	ND	1.1	1.00	
Carbon Disulfide	ND	11	1.00	
Carbon Tetrachloride	ND	1.1	1.00	
Chlorobenzene	ND	1.1	1.00	
Chloroethane	ND	2.2	1.00	
Chloroform	ND	1.1	1.00	
Chloromethane	ND	22	1.00	
2-Chlorotoluene	ND	1.1	1.00	
4-Chlorotoluene	ND	1.1	1.00	
Dibromochloromethane	ND	2.2	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.6	1.00	
1,2-Dibromoethane	ND	1.1	1.00	
Dibromomethane	ND	1.1	1.00	
1,2-Dichlorobenzene	ND	1.1	1.00	
1,3-Dichlorobenzene	ND	1.1	1.00	
1,4-Dichlorobenzene	ND	1.1	1.00	
Dichlorodifluoromethane	ND	2.2	1.00	
1,1-Dichloroethane	ND	1.1	1.00	
1,2-Dichloroethane	ND	1.1	1.00	
1,1-Dichloroethene	ND	1.1	1.00	
c-1,2-Dichloroethene	ND	1.1	1.00	
t-1,2-Dichloroethene	ND	1.1	1.00	
1,2-Dichloropropane	ND	1.1	1.00	
1,3-Dichloropropane	ND	1.1	1.00	
2,2-Dichloropropane	ND	5.6	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/16/18
1920 Main Street, Suite 300		Work Order:	18-03-1433
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392.002			Page 17 of 21

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.2	1.00	
c-1,3-Dichloropropene	ND	1.1	1.00	
t-1,3-Dichloropropene	ND	2.2	1.00	
Ethylbenzene	ND	1.1	1.00	
2-Hexanone	ND	22	1.00	
Isopropylbenzene	ND	1.1	1.00	
p-Isopropyltoluene	ND	1.1	1.00	
Methylene Chloride	ND	11	1.00	
4-Methyl-2-Pentanone	ND	22	1.00	
Naphthalene	ND	11	1.00	
n-Propylbenzene	ND	2.2	1.00	
Styrene	ND	1.1	1.00	
1,1,1,2-Tetrachloroethane	ND	1.1	1.00	
1,1,2,2-Tetrachloroethane	ND	2.2	1.00	
Tetrachloroethene	ND	1.1	1.00	
Toluene	ND	1.1	1.00	
1,2,3-Trichlorobenzene	ND	2.2	1.00	
1,2,4-Trichlorobenzene	ND	2.2	1.00	
1,1,1-Trichloroethane	ND	1.1	1.00	
1,1,2-Trichloroethane	ND	1.1	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	11	1.00	
Trichloroethene	ND	2.2	1.00	
Trichlorofluoromethane	ND	11	1.00	
1,2,3-Trichloropropane	ND	2.2	1.00	
1,2,4-Trimethylbenzene	ND	2.2	1.00	
1,3,5-Trimethylbenzene	ND	2.2	1.00	
Vinyl Acetate	ND	11	1.00	
Vinyl Chloride	ND	1.1	1.00	
p/m-Xylene	ND	2.2	1.00	
o-Xylene	ND	1.1	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.2	1.00	
Tert-Butyl Alcohol (TBA)	ND	22	1.00	
Diisopropyl Ether (DIPE)	ND	1.1	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.1	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.1	1.00	
Ethanol	ND	560	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	115	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/16/18
1920 Main Street, Suite 300		Work Order:	18-03-1433
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392.002			Page 18 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	96	79-133	
1,2-Dichloroethane-d4	89	71-155	
Toluene-d8	100	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/16/18
Work Order: 18-03-1433
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Project: Infineon / 0444392.002

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**095-01-025-29794**	**N/A**	**Solid**	**GC/MS LL**	**03/22/18**	**03/22/18 11:36**	**180322L010**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	50	1.00	
Benzene	ND	1.0	1.00	
Bromobenzene	ND	1.0	1.00	
Bromochloromethane	ND	2.0	1.00	
Bromodichloromethane	ND	1.0	1.00	
Bromoform	ND	5.0	1.00	
Bromomethane	ND	20	1.00	
2-Butanone	ND	20	1.00	
n-Butylbenzene	ND	1.0	1.00	
sec-Butylbenzene	ND	1.0	1.00	
tert-Butylbenzene	ND	1.0	1.00	
Carbon Disulfide	ND	10	1.00	
Carbon Tetrachloride	ND	1.0	1.00	
Chlorobenzene	ND	1.0	1.00	
Chloroethane	ND	2.0	1.00	
Chloroform	ND	1.0	1.00	
Chloromethane	ND	20	1.00	
2-Chlorotoluene	ND	1.0	1.00	
4-Chlorotoluene	ND	1.0	1.00	
Dibromochloromethane	ND	2.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.0	1.00	
1,2-Dibromoethane	ND	1.0	1.00	
Dibromomethane	ND	1.0	1.00	
1,2-Dichlorobenzene	ND	1.0	1.00	
1,3-Dichlorobenzene	ND	1.0	1.00	
1,4-Dichlorobenzene	ND	1.0	1.00	
Dichlorodifluoromethane	ND	2.0	1.00	
1,1-Dichloroethane	ND	1.0	1.00	
1,2-Dichloroethane	ND	1.0	1.00	
1,1-Dichloroethene	ND	1.0	1.00	
c-1,2-Dichloroethene	ND	1.0	1.00	
t-1,2-Dichloroethene	ND	1.0	1.00	
1,2-Dichloropropane	ND	1.0	1.00	
1,3-Dichloropropane	ND	1.0	1.00	
2,2-Dichloropropane	ND	5.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/16/18
1920 Main Street, Suite 300		Work Order:	18-03-1433
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392.002			Page 20 of 21

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.0	1.00	
c-1,3-Dichloropropene	ND	1.0	1.00	
t-1,3-Dichloropropene	ND	2.0	1.00	
Ethylbenzene	ND	1.0	1.00	
2-Hexanone	ND	20	1.00	
Isopropylbenzene	ND	1.0	1.00	
p-Isopropyltoluene	ND	1.0	1.00	
Methylene Chloride	ND	10	1.00	
4-Methyl-2-Pentanone	ND	20	1.00	
Naphthalene	ND	10	1.00	
n-Propylbenzene	ND	2.0	1.00	
Styrene	ND	1.0	1.00	
1,1,1,2-Tetrachloroethane	ND	1.0	1.00	
1,1,2,2-Tetrachloroethane	ND	2.0	1.00	
Tetrachloroethene	ND	1.0	1.00	
Toluene	ND	1.0	1.00	
1,2,3-Trichlorobenzene	ND	2.0	1.00	
1,2,4-Trichlorobenzene	ND	2.0	1.00	
1,1,1-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.00	
Trichloroethene	ND	2.0	1.00	
Trichlorofluoromethane	ND	10	1.00	
1,2,3-Trichloropropane	ND	2.0	1.00	
1,2,4-Trimethylbenzene	ND	2.0	1.00	
1,3,5-Trimethylbenzene	ND	2.0	1.00	
Vinyl Acetate	ND	10	1.00	
Vinyl Chloride	ND	1.0	1.00	
p/m-Xylene	ND	2.0	1.00	
o-Xylene	ND	1.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.0	1.00	
Tert-Butyl Alcohol (TBA)	ND	20	1.00	
Diisopropyl Ether (DIPE)	ND	1.0	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.0	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.0	1.00	
Ethanol	ND	500	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	97	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/16/18
1920 Main Street, Suite 300		Work Order:	18-03-1433
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392.002			Page 21 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	100	79-133	
1,2-Dichloroethane-d4	95	71-155	
Toluene-d8	98	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Quality Control - LCS/LCSD

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392.002

Date Received: 03/16/18
Work Order: 18-03-1433
Preparation: EPA 5030C
Method: EPA 8260B

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-14-001-25478	**LCS**	**Aqueous**	**GC/MS CC**	**03/23/18**	**03/23/18 09:11**	**180323L006**
099-14-001-25478	**LCSD**	**Aqueous**	**GC/MS CC**	**03/23/18**	**03/23/18 09:39**	**180323L006**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Acetone	50.00	70.08	140	61.32	123	53-137	39-151	13	0-21	ME
Benzene	50.00	52.89	106	52.37	105	79-121	72-128	1	0-20	
Bromobenzene	50.00	53.65	107	52.98	106	80-120	73-127	1	0-20	
Bromochloromethane	50.00	56.99	114	55.70	111	80-122	73-129	2	0-20	
Bromodichloromethane	50.00	54.65	109	53.95	108	80-124	73-131	1	0-20	
Bromoform	50.00	51.89	104	51.73	103	73-127	64-136	0	0-20	
Bromomethane	50.00	39.47	79	38.98	78	50-150	33-167	1	0-26	
2-Butanone	50.00	58.67	117	55.72	111	60-126	49-137	5	0-20	
n-Butylbenzene	50.00	57.32	115	57.09	114	72-138	61-149	0	0-20	
sec-Butylbenzene	50.00	54.10	108	53.04	106	77-131	68-140	2	0-20	
tert-Butylbenzene	50.00	53.95	108	52.67	105	80-125	72-132	2	0-20	
Carbon Disulfide	50.00	49.31	99	48.05	96	50-150	33-167	3	0-22	
Carbon Tetrachloride	50.00	53.68	107	52.15	104	65-143	52-156	3	0-20	
Chlorobenzene	50.00	53.42	107	53.08	106	80-120	73-127	1	0-20	
Chloroethane	50.00	49.18	98	47.93	96	62-128	51-139	3	0-20	
Chloroform	50.00	53.43	107	52.04	104	80-120	73-127	3	0-20	
Chloromethane	50.00	50.72	101	51.25	102	43-133	28-148	1	0-20	
2-Chlorotoluene	50.00	53.50	107	52.81	106	80-121	73-128	1	0-20	
4-Chlorotoluene	50.00	52.49	105	51.00	102	80-120	73-127	3	0-20	
Dibromochloromethane	50.00	52.68	105	52.93	106	80-123	73-130	0	0-20	
1,2-Dibromo-3-Chloropropane	50.00	53.22	106	54.42	109	66-126	56-136	2	0-20	
1,2-Dibromoethane	50.00	52.24	104	53.33	107	80-120	73-127	2	0-20	
Dibromomethane	50.00	55.48	111	54.99	110	80-120	73-127	1	0-20	
1,2-Dichlorobenzene	50.00	53.59	107	53.16	106	80-120	73-127	1	0-20	
1,3-Dichlorobenzene	50.00	53.22	106	52.35	105	80-120	73-127	2	0-20	
1,4-Dichlorobenzene	50.00	52.66	105	51.48	103	80-120	73-127	2	0-20	
Dichlorodifluoromethane	50.00	45.38	91	43.15	86	50-150	33-167	5	0-30	
1,1-Dichloroethane	50.00	53.83	108	51.81	104	72-126	63-135	4	0-20	
1,2-Dichloroethane	50.00	56.04	112	55.74	111	76-120	69-127	1	0-20	
1,1-Dichloroethene	50.00	42.71	85	40.99	82	66-132	55-143	4	0-20	
c-1,2-Dichloroethene	50.00	52.82	106	51.95	104	78-120	71-127	2	0-20	
t-1,2-Dichloroethene	50.00	53.15	106	50.73	101	66-132	55-143	5	0-20	
1,2-Dichloropropane	50.00	56.10	112	55.18	110	80-120	73-127	2	0-20	
1,3-Dichloropropane	50.00	52.22	104	52.67	105	80-120	73-127	1	0-20	
2,2-Dichloropropane	50.00	56.80	114	54.16	108	50-150	33-167	5	0-20	
1,1-Dichloropropene	50.00	54.01	108	52.80	106	75-123	67-131	2	0-20	

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS/LCSD

ERM-WEST		Date Received:	03/16/18
1920 Main Street, Suite 300		Work Order:	18-03-1433
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
Project: Infineon / 0444392.002			Page 2 of 4

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
c-1,3-Dichloropropene	50.00	56.96	114	55.63	111	77-131	68-140	2	0-20	
t-1,3-Dichloropropene	50.00	55.51	111	55.78	112	76-136	66-146	0	0-20	
Ethylbenzene	50.00	53.53	107	53.10	106	80-120	73-127	1	0-20	
2-Hexanone	50.00	55.31	111	53.26	107	63-123	53-133	4	0-20	
Isopropylbenzene	50.00	52.50	105	51.79	104	80-128	72-136	1	0-20	
p-Isopropyltoluene	50.00	55.22	110	54.35	109	73-133	63-143	2	0-20	
Methylene Chloride	50.00	53.28	107	52.55	105	61-133	49-145	1	0-27	
4-Methyl-2-Pentanone	50.00	52.21	104	54.85	110	65-125	55-135	5	0-20	
Naphthalene	50.00	56.70	113	58.01	116	69-129	59-139	2	0-20	
n-Propylbenzene	50.00	53.52	107	52.99	106	80-128	72-136	1	0-20	
Styrene	50.00	54.75	109	54.65	109	80-126	72-134	0	0-20	
1,1,1,2-Tetrachloroethane	50.00	52.56	105	52.23	104	80-129	72-137	1	0-20	
1,1,2,2-Tetrachloroethane	50.00	51.85	104	52.64	105	74-122	66-130	2	0-20	
Tetrachloroethene	50.00	51.35	103	48.99	98	55-139	41-153	5	0-23	
Toluene	50.00	52.98	106	52.72	105	80-120	73-127	1	0-20	
1,2,3-Trichlorobenzene	50.00	56.11	112	56.80	114	72-132	62-142	1	0-20	
1,2,4-Trichlorobenzene	50.00	57.83	116	57.93	116	74-134	64-144	0	0-20	
1,1,1-Trichloroethane	50.00	52.36	105	51.02	102	76-124	68-132	3	0-20	
1,1,2-Trichloro-1,2,2-Trifluoroethane	50.00	44.04	88	43.49	87	54-150	38-166	1	0-30	
1,1,2-Trichloroethane	50.00	52.78	106	53.29	107	80-120	73-127	1	0-20	
Trichloroethene	50.00	52.88	106	52.03	104	79-121	72-128	2	0-20	
Trichlorofluoromethane	50.00	51.41	103	49.13	98	72-132	62-142	5	0-20	
1,2,3-Trichloropropane	50.00	51.94	104	53.63	107	75-123	67-131	3	0-20	
1,2,4-Trimethylbenzene	50.00	54.74	109	53.42	107	74-128	65-137	2	0-20	
1,3,5-Trimethylbenzene	50.00	51.67	103	51.85	104	77-131	68-140	0	0-20	
Vinyl Acetate	50.00	56.42	113	56.84	114	50-150	33-167	1	0-20	
Vinyl Chloride	50.00	50.09	100	47.84	96	63-129	52-140	5	0-20	
p/m-Xylene	100.0	105.5	105	104.8	105	80-122	73-129	1	0-20	
o-Xylene	50.00	52.76	106	52.57	105	80-128	72-136	0	0-20	
Methyl-t-Butyl Ether (MTBE)	50.00	52.51	105	52.63	105	69-123	60-132	0	0-20	
Tert-Butyl Alcohol (TBA)	250.0	291.6	117	279.0	112	80-124	73-131	4	0-20	
Diisopropyl Ether (DIPE)	50.00	53.74	107	52.93	106	79-121	72-128	2	0-20	
Ethyl-t-Butyl Ether (ETBE)	50.00	54.75	110	54.42	109	71-125	62-134	1	0-20	
Tert-Amyl-Methyl Ether (TAME)	50.00	53.86	108	54.78	110	70-124	61-133	2	0-20	
Ethanol	500.0	515.1	103	516.2	103	53-149	37-165	0	0-24	

Total number of LCS compounds: 71
Total number of ME compounds: 1

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS/LCSD

ERM-WEST	Date Received:	03/16/18
1920 Main Street, Suite 300	Work Order:	18-03-1433
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
Project: Infineon / 0444392.002		Page 3 of 4

Total number of ME compounds allowed: 4
LCS ME CL validation result: Pass

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS/LCSD

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392.002

Date Received: 03/16/18
Work Order: 18-03-1433
Preparation: EPA 5035
Method: EPA 8260B

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
095-01-025-29794	**LCS**	**Solid**	**GC/MS LL**	**03/22/18**	**03/22/18 10:15**	**180322L010**
095-01-025-29794	**LCSD**	**Solid**	**GC/MS LL**	**03/22/18**	**03/22/18 10:42**	**180322L010**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Benzene	50.00	48.88	98	45.42	91	80-120	73-127	7	0-20	
Carbon Tetrachloride	50.00	56.55	113	50.29	101	65-137	53-149	12	0-20	
Chlorobenzene	50.00	50.39	101	46.27	93	80-120	73-127	9	0-20	
1,2-Dibromoethane	50.00	50.16	100	46.54	93	80-120	73-127	7	0-20	
1,2-Dichlorobenzene	50.00	50.03	100	46.91	94	80-120	73-127	6	0-20	
1,2-Dichloroethane	50.00	48.57	97	46.31	93	80-120	73-127	5	0-20	
1,1-Dichloroethene	50.00	54.56	109	49.14	98	68-128	58-138	10	0-20	
Ethylbenzene	50.00	52.09	104	47.33	95	80-120	73-127	10	0-20	
Toluene	50.00	50.56	101	46.82	94	80-120	73-127	8	0-20	
Trichloroethene	50.00	51.69	103	47.76	96	80-120	73-127	8	0-20	
Vinyl Chloride	50.00	46.30	93	44.53	89	67-127	57-137	4	0-20	
p/m-Xylene	100.0	101.4	101	92.37	92	75-125	67-133	9	0-25	
o-Xylene	50.00	50.99	102	46.92	94	75-125	67-133	8	0-25	
Methyl-t-Butyl Ether (MTBE)	50.00	48.56	97	45.72	91	70-124	61-133	6	0-20	
Tert-Butyl Alcohol (TBA)	250.0	255.6	102	237.2	95	73-121	65-129	7	0-20	
Diisopropyl Ether (DIPE)	50.00	50.57	101	47.25	94	69-129	59-139	7	0-20	
Ethyl-t-Butyl Ether (ETBE)	50.00	50.15	100	46.90	94	70-124	61-133	7	0-20	
Tert-Amyl-Methyl Ether (TAME)	50.00	49.76	100	47.45	95	74-122	66-130	5	0-20	
Ethanol	500.0	687.3	137	406.7	81	51-135	37-149	51	0-27	ME,X

Total number of LCS compounds: 19
Total number of ME compounds: 1
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

RPD: Relative Percent Difference. CL: Control Limits

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Sample Analysis Summary Report

Work Order: 18-03-1433 Page 1 of 1

Method	Extraction	Chemist ID	Instrument	Analytical Location
EPA 8260B	EPA 5035	867	GC/MS LL	2
EPA 8260B	EPA 5030C	1055	GC/MS CC	2

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Glossary of Terms and Qualifiers

Work Order: 18-03-1433 Page 1 of 1

Qualifiers	Definition
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
CI	See case narrative.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

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7440 Lincoln Way, Garden Grove, CA 92841-1427 • (714) 895-5494
For courier service / sample drop off information, contact us26_sales@eurofinsus.com or call us.

CHAIN-OF-CUSTODY RECORD

Date 03/16/18
Page 1 of 1

WO NO. / LAB USE ONLY
18-03-1433

LABORATORY CLIENT: ERM
ADDRESS: 1920 Main Street - Suite 300
CITY: Irvine STATE: CA ZIP: 92614
TEL: 949-623-4700 E-MAIL: SEE BELOW ON Instructions

CLIENT PROJECT NAME / NO.: INFINEON
P.O. NO.: 0444392.002
PROJECT CONTACT: Maggie TymKow
LAB CONTACT OR QUOTE NO: VIRENDRA Patel
GLOBAL ID:
LOG CODE:
SAMPLER(S): (PRINT) Manuel Leon

TURNAROUND TIME (Rush surcharges may apply to any TAT not "STANDARD"):
☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAYS ☒ STANDARD

EDD
☐ COELT EDF ☐ OTHER

SPECIAL INSTRUCTIONS:
Email to: Brad.Cross@erm.com / Tony.Baertsch@erm.com / Maggie.TymKow@erm.com / Stewart.EmHof@erm.com

REQUESTED ANALYSES
Please check box or fill in blank as needed.

LAB USE ONLY	SAMPLE ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	Unpreserved	Preserved	Field Filtered	TPH(g) ☐ GRO	TPH(d) ☐ DRO	TPH ☐ C6-C36 ☐ C6-C44	TPH	BTEX / MTBE ☐ 8260 ☐	VOCs (8260)	Oxygenates (8260)	Prep (5035) ☐ En Core ☒ Terra Core	SVOCs (8270)	Pesticides (8081)	PCBs (8082)	PAHs ☐ 8270 ☐ 8270 SIM	T22 Metals ☐ 6010/747X ☐ 6020/747X	Cr(VI) ☐ 7196 ☐ 7199 ☐ 218.6				
1	B2-6-5	3/16/18	08:10	Soil	1 Kit									✓												
2	B2-6-16	3/16/18	08:16	Soil	1 Kit									✓												
3	B2-6-28	3/16/18	08:30	Soil	1 Kit									✓												
4	B2-6-55	3/16/18	08:57	Soil	1 Kit									✓												
5	B2-6-80	3/16/18	09:42	Soil	1 Kit									✓												
6	B2-16-16	3/16/18	08:16	Soil	1 Kit									✓												
7	Trip Blk			Water	2									✓												

Relinquished by: (Signature) 3/16/18-1450
Relinquished by: (Signature) 3/16/18-1455
Relinquished by: (Signature)

Received by: (Signature/Affiliation)
Received by: (Signature/Affiliation) EC
Received by: (Signature/Affiliation)

Date: 3/16/18 Time: 1455
Date: 3/16/18 Time: 1740
Date: Time:

2016-04-01-Revision

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WORK ORDER NUMBER: 18-03-0433

SAMPLE RECEIPT CHECKLIST

COOLER 1 OF 1

CLIENT: ERM

DATE: 03 / 16 / 2018

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)

Thermometer ID: SC6 (CF: +0.2°C); Temperature (w/o CF): 2.0 °C (w/ CF): 2.2 °C; ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____)

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling

☐ Sample(s) received at ambient temperature; placed on ice for transport by courier

Ambient Temperature: ☐ Air ☐ Filter Checked by: 1091

CUSTODY SEAL:

Cooler ☐ Present and Intact ☐ Present but Not Intact ☑ Not Present ☐ N/A Checked by: 1091

Sample(s) ☐ Present and Intact ☐ Present but Not Intact ☑ Not Present ☐ N/A Checked by: 1053

SAMPLE CONDITION:	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ Sampling date ☐ Sampling time ☐ Matrix ☐ Number of containers			
☐ No analysis requested ☐ Not relinquished ☐ No relinquished date ☐ No relinquished time			
Sampler's name indicated on COC	☑	☐	☐
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and in good condition	☑	☐	☐
Proper containers for analyses requested	☑	☐	☐
Sufficient volume/mass for analyses requested	☑	☐	☐
Samples received within holding time	☑	☐	☐
Aqueous samples for certain analyses received within 15-minute holding time			
☐ pH ☐ Residual Chlorine ☐ Dissolved Sulfide ☐ Dissolved Oxygen	☐	☐	☑
Proper preservation chemical(s) noted on COC and/or sample container	☑	☐	☐
Unpreserved aqueous sample(s) received for certain analyses			
☐ Volatile Organics ☐ Total Metals ☐ Dissolved Metals			
Acid/base preserved samples - pH within acceptable range	☐	☐	☑
Container(s) for certain analysis free of headspace	☑	☐	☐
☑ Volatile Organics ☐ Dissolved Gases (RSK-175) ☐ Dissolved Oxygen (SM 4500)			
☐ Carbon Dioxide (SM 4500) ☐ Ferrous Iron (SM 3500) ☐ Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE: (Trip Blank Lot Number: 180219C)

Aqueous: ☐ VOA ☑ VOA**h** ☐ VOA**na$_2$** ☐ 100PJ ☐ 100PJ**na$_2$** ☐ 125AGB ☐ 125AGB**h** ☐ 125AGB**p** ☐ 125PB ☐ 125PB**znna** (pH__9)

☐ 250AGB ☐ 250CGB ☐ 250CGB**s** (pH__2) ☐ 250PB ☐ 250PB**n** (pH__2) ☐ 500AGB ☐ 500AGJ ☐ 500AGJ**s** (pH__2) ☐ 500PB

☐ 1AGB ☐ 1AGB**na$_2$** ☐ 1AGB**s** (pH__2) ☐ 1AGB**s** (O&G) ☐ 1PB ☐ 1PB**na** (pH__12) ☐ _____ ☐ _____ ☐ _____

Solid: ☐ 4ozCGJ ☐ 8ozCGJ ☐ 16ozCGJ ☐ Sleeve (___) ☐ EnCores® (___) ☑ TerraCores® (3) ☑ 2oz PJ ☐ _____ ☐ _____

Air: ☐ Tedlar™ ☐ Canister ☐ Sorbent Tube ☐ PUF ☐ _____ **Other Matrix** (_____): ☐ _____ ☐ _____ ☐ _____

Container: **A** = Amber, **B** = Bottle, **C** = Clear, **E** = Envelope, **G** = Glass, **J** = Jar, **P** = Plastic, and **Z** = Ziploc/Resealable Bag

Preservative: **b** = buffered, **f** = filtered, **h** = HCl, **n** = HNO_3, **na** = NaOH, **na$_2$** = $Na_2S_2O_3$, **p** = H_3PO_4, **s** = H_2SO_4, **u** = ultra-pure, **x** = Na_2SO_3+$NaHSO_4.H_2O$, **znna** = Zn $(CH_3CO_2)_2$ + NaOH

Labeled/Checked by: 1053

Reviewed by: 089

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WORK ORDER NUMBER: 18-03-2257

The difference is service

AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: ERM-WEST

Client Project Name: Infineon / 0444392.002

Attention: Maggie Tymkow
1920 Main Street
Suite 300
Irvine, CA 92614-7279

Approved for release on 03/27/2018 by:
Virendra Patel
Project Manager

ResultLink

Email your PM

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Client Project Name: Infineon / 0444392.002
Work Order Number: 18-03-2257

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Work Order Narrative

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 03/26/18. They were assigned to Work Order 18-03-2257.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

DoD Projects:

The test results contained in this report are accredited under the laboratory's ISO/IEC 17025:2005 and DoD-ELAP accreditation issued by the ANSI-ASQ National Accreditation Board. Refer to certificate and scope of accreditation ADE-1864.

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Sample Summary

Client:	ERM-WEST 1920 Main Street, Suite 300 Irvine, CA 92614-7279	Work Order:	18-03-2257
		Project Name:	Infineon / 0444392.002
		PO Number:	
		Date/Time Received:	03/26/18 18:10
		Number of Containers:	26
Attn:	Maggie Tymkow		

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
B2-5-5	18-03-2257-1	03/26/18 09:09	4	Solid
B2-5-15	18-03-2257-2	03/26/18 09:45	4	Solid
B2-5-39	18-03-2257-3	03/26/18 10:02	4	Solid
B2-5-55	18-03-2257-4	03/26/18 10:21	4	Solid
B2-5-80	18-03-2257-5	03/26/18 10:57	4	Solid
B2-15-5	18-03-2257-6	03/26/18 00:00	4	Solid
Trip Blk	18-03-2257-7	03/26/18 00:00	2	Aqueous

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/26/18
Work Order: 18-03-2257
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

Project: Infineon / 0444392.002

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Trip Blk	**18-03-2257-7-A**	**03/26/18 00:00**	**Aqueous**	**GC/MS V V**	**03/26/18**	**03/26/18 19:44**	**180326L016**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	20	1.00	
Benzene	ND	0.50	1.00	
Bromobenzene	ND	1.0	1.00	
Bromochloromethane	ND	1.0	1.00	
Bromodichloromethane	ND	1.0	1.00	
Bromoform	ND	1.0	1.00	
Bromomethane	ND	10	1.00	
2-Butanone	ND	10	1.00	
n-Butylbenzene	ND	1.0	1.00	
sec-Butylbenzene	ND	1.0	1.00	
tert-Butylbenzene	ND	1.0	1.00	
Carbon Disulfide	ND	10	1.00	
Carbon Tetrachloride	ND	0.50	1.00	
Chlorobenzene	ND	1.0	1.00	
Chloroethane	ND	5.0	1.00	
Chloroform	ND	1.0	1.00	
Chloromethane	ND	10	1.00	
2-Chlorotoluene	ND	1.0	1.00	
4-Chlorotoluene	ND	1.0	1.00	
Dibromochloromethane	ND	1.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.0	1.00	
1,2-Dibromoethane	ND	1.0	1.00	
Dibromomethane	ND	1.0	1.00	
1,2-Dichlorobenzene	ND	1.0	1.00	
1,3-Dichlorobenzene	ND	1.0	1.00	
1,4-Dichlorobenzene	ND	1.0	1.00	
Dichlorodifluoromethane	ND	1.0	1.00	
1,1-Dichloroethane	ND	1.0	1.00	
1,2-Dichloroethane	ND	0.50	1.00	
1,1-Dichloroethene	ND	1.0	1.00	
c-1,2-Dichloroethene	ND	1.0	1.00	
t-1,2-Dichloroethene	ND	1.0	1.00	
1,2-Dichloropropane	ND	1.0	1.00	
1,3-Dichloropropane	ND	1.0	1.00	
2,2-Dichloropropane	ND	1.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received:	03/26/18
Work Order:	18-03-2257
Preparation:	EPA 5030C
Method:	EPA 8260B
Units:	ug/L

Project: Infineon / 0444392.002

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	1.0	1.00	
c-1,3-Dichloropropene	ND	0.50	1.00	
t-1,3-Dichloropropene	ND	0.50	1.00	
Ethylbenzene	ND	1.0	1.00	
2-Hexanone	ND	10	1.00	
Isopropylbenzene	ND	1.0	1.00	
p-Isopropyltoluene	ND	1.0	1.00	
Methylene Chloride	ND	10	1.00	
4-Methyl-2-Pentanone	ND	10	1.00	
Naphthalene	ND	10	1.00	
n-Propylbenzene	ND	1.0	1.00	
Styrene	ND	1.0	1.00	
1,1,1,2-Tetrachloroethane	ND	1.0	1.00	
1,1,2,2-Tetrachloroethane	ND	1.0	1.00	
Tetrachloroethene	ND	1.0	1.00	
Toluene	ND	1.0	1.00	
1,2,3-Trichlorobenzene	ND	1.0	1.00	
1,2,4-Trichlorobenzene	ND	1.0	1.00	
1,1,1-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.00	
1,1,2-Trichloroethane	ND	1.0	1.00	
Trichloroethene	ND	1.0	1.00	
Trichlorofluoromethane	ND	10	1.00	
1,2,3-Trichloropropane	ND	5.0	1.00	
1,2,4-Trimethylbenzene	ND	1.0	1.00	
1,3,5-Trimethylbenzene	ND	1.0	1.00	
Vinyl Acetate	ND	10	1.00	
Vinyl Chloride	ND	0.50	1.00	
p/m-Xylene	ND	1.0	1.00	
o-Xylene	ND	1.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	1.0	1.00	
Tert-Butyl Alcohol (TBA)	ND	10	1.00	
Diisopropyl Ether (DIPE)	ND	2.0	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	2.0	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	2.0	1.00	
Ethanol	ND	100	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	91	77-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/26/18
1920 Main Street, Suite 300	Work Order:	18-03-2257
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/L
Project: Infineon / 0444392.002		Page 3 of 6

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	103	80-128	
1,2-Dichloroethane-d4	101	80-129	
Toluene-d8	97	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/26/18
Work Order: 18-03-2257
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

Project: Infineon / 0444392.002

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-14-001-25500**	**N/A**	**Aqueous**	**GC/MS V V**	**03/26/18**	**03/26/18 16:50**	**180326L016**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	20	1.00	
Benzene	ND	0.50	1.00	
Bromobenzene	ND	1.0	1.00	
Bromochloromethane	ND	1.0	1.00	
Bromodichloromethane	ND	1.0	1.00	
Bromoform	ND	1.0	1.00	
Bromomethane	ND	10	1.00	
2-Butanone	ND	10	1.00	
n-Butylbenzene	ND	1.0	1.00	
sec-Butylbenzene	ND	1.0	1.00	
tert-Butylbenzene	ND	1.0	1.00	
Carbon Disulfide	ND	10	1.00	
Carbon Tetrachloride	ND	0.50	1.00	
Chlorobenzene	ND	1.0	1.00	
Chloroethane	ND	5.0	1.00	
Chloroform	ND	1.0	1.00	
Chloromethane	ND	10	1.00	
2-Chlorotoluene	ND	1.0	1.00	
4-Chlorotoluene	ND	1.0	1.00	
Dibromochloromethane	ND	1.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.0	1.00	
1,2-Dibromoethane	ND	1.0	1.00	
Dibromomethane	ND	1.0	1.00	
1,2-Dichlorobenzene	ND	1.0	1.00	
1,3-Dichlorobenzene	ND	1.0	1.00	
1,4-Dichlorobenzene	ND	1.0	1.00	
Dichlorodifluoromethane	ND	1.0	1.00	
1,1-Dichloroethane	ND	1.0	1.00	
1,2-Dichloroethane	ND	0.50	1.00	
1,1-Dichloroethene	ND	1.0	1.00	
c-1,2-Dichloroethene	ND	1.0	1.00	
t-1,2-Dichloroethene	ND	1.0	1.00	
1,2-Dichloropropane	ND	1.0	1.00	
1,3-Dichloropropane	ND	1.0	1.00	
2,2-Dichloropropane	ND	1.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/26/18
1920 Main Street, Suite 300	Work Order:	18-03-2257
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/L
Project: Infineon / 0444392.002		Page 5 of 6

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	1.0	1.00	
c-1,3-Dichloropropene	ND	0.50	1.00	
t-1,3-Dichloropropene	ND	0.50	1.00	
Ethylbenzene	ND	1.0	1.00	
2-Hexanone	ND	10	1.00	
Isopropylbenzene	ND	1.0	1.00	
p-Isopropyltoluene	ND	1.0	1.00	
Methylene Chloride	ND	10	1.00	
4-Methyl-2-Pentanone	ND	10	1.00	
Naphthalene	ND	10	1.00	
n-Propylbenzene	ND	1.0	1.00	
Styrene	ND	1.0	1.00	
1,1,1,2-Tetrachloroethane	ND	1.0	1.00	
1,1,2,2-Tetrachloroethane	ND	1.0	1.00	
Tetrachloroethene	ND	1.0	1.00	
Toluene	ND	1.0	1.00	
1,2,3-Trichlorobenzene	ND	1.0	1.00	
1,2,4-Trichlorobenzene	ND	1.0	1.00	
1,1,1-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.00	
1,1,2-Trichloroethane	ND	1.0	1.00	
Trichloroethene	ND	1.0	1.00	
Trichlorofluoromethane	ND	10	1.00	
1,2,3-Trichloropropane	ND	5.0	1.00	
1,2,4-Trimethylbenzene	ND	1.0	1.00	
1,3,5-Trimethylbenzene	ND	1.0	1.00	
Vinyl Acetate	ND	10	1.00	
Vinyl Chloride	ND	0.50	1.00	
p/m-Xylene	ND	1.0	1.00	
o-Xylene	ND	1.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	1.0	1.00	
Tert-Butyl Alcohol (TBA)	ND	10	1.00	
Diisopropyl Ether (DIPE)	ND	2.0	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	2.0	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	2.0	1.00	
Ethanol	ND	100	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	93	77-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/26/18
1920 Main Street, Suite 300		Work Order:	18-03-2257
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/L
Project: Infineon / 0444392.002			Page 6 of 6

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	100	80-128	
1,2-Dichloroethane-d4	98	80-129	
Toluene-d8	97	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/26/18
Work Order: 18-03-2257
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Project: Infineon / 0444392.002

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B2-5-5	**18-03-2257-1-C**	**03/26/18 09:09**	**Solid**	**GC/MS Q**	**03/26/18**	**03/26/18 19:40**	**180326L021**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	43	1.00	
Benzene	ND	0.87	1.00	
Bromobenzene	ND	0.87	1.00	
Bromochloromethane	ND	1.7	1.00	
Bromodichloromethane	ND	0.87	1.00	
Bromoform	ND	4.3	1.00	
Bromomethane	ND	17	1.00	
2-Butanone	ND	17	1.00	
n-Butylbenzene	ND	0.87	1.00	
sec-Butylbenzene	ND	0.87	1.00	
tert-Butylbenzene	ND	0.87	1.00	
Carbon Disulfide	ND	8.7	1.00	
Carbon Tetrachloride	ND	0.87	1.00	
Chlorobenzene	ND	0.87	1.00	
Chloroethane	ND	1.7	1.00	
Chloroform	ND	0.87	1.00	
Chloromethane	ND	17	1.00	
2-Chlorotoluene	ND	0.87	1.00	
4-Chlorotoluene	ND	0.87	1.00	
Dibromochloromethane	ND	1.7	1.00	
1,2-Dibromo-3-Chloropropane	ND	4.3	1.00	
1,2-Dibromoethane	ND	0.87	1.00	
Dibromomethane	ND	0.87	1.00	
1,2-Dichlorobenzene	ND	0.87	1.00	
1,3-Dichlorobenzene	ND	0.87	1.00	
1,4-Dichlorobenzene	ND	0.87	1.00	
Dichlorodifluoromethane	ND	1.7	1.00	
1,1-Dichloroethane	ND	0.87	1.00	
1,2-Dichloroethane	ND	0.87	1.00	
1,1-Dichloroethene	ND	0.87	1.00	
c-1,2-Dichloroethene	ND	0.87	1.00	
t-1,2-Dichloroethene	ND	0.87	1.00	
1,2-Dichloropropane	ND	0.87	1.00	
1,3-Dichloropropane	ND	0.87	1.00	
2,2-Dichloropropane	ND	4.3	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392.002

Date Received: 03/26/18
Work Order: 18-03-2257
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	1.7	1.00	
c-1,3-Dichloropropene	ND	0.87	1.00	
t-1,3-Dichloropropene	ND	1.7	1.00	
Ethylbenzene	ND	0.87	1.00	
2-Hexanone	ND	17	1.00	
Isopropylbenzene	ND	0.87	1.00	
p-Isopropyltoluene	ND	0.87	1.00	
Methylene Chloride	ND	8.7	1.00	
4-Methyl-2-Pentanone	ND	17	1.00	
Naphthalene	ND	8.7	1.00	
n-Propylbenzene	ND	1.7	1.00	
Styrene	ND	0.87	1.00	
1,1,1,2-Tetrachloroethane	ND	0.87	1.00	
1,1,2,2-Tetrachloroethane	ND	1.7	1.00	
Tetrachloroethene	ND	0.87	1.00	
Toluene	ND	0.87	1.00	
1,2,3-Trichlorobenzene	ND	1.7	1.00	
1,2,4-Trichlorobenzene	ND	1.7	1.00	
1,1,1-Trichloroethane	ND	0.87	1.00	
1,1,2-Trichloroethane	ND	0.87	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	8.7	1.00	
Trichloroethene	ND	1.7	1.00	
Trichlorofluoromethane	ND	8.7	1.00	
1,2,3-Trichloropropane	ND	1.7	1.00	
1,2,4-Trimethylbenzene	ND	1.7	1.00	
1,3,5-Trimethylbenzene	ND	1.7	1.00	
Vinyl Acetate	ND	8.7	1.00	
Vinyl Chloride	ND	0.87	1.00	
p/m-Xylene	ND	1.7	1.00	
o-Xylene	ND	0.87	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	1.7	1.00	
Tert-Butyl Alcohol (TBA)	ND	17	1.00	
Diisopropyl Ether (DIPE)	ND	0.87	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.87	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.87	1.00	
Ethanol	ND	430	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	97	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/26/18
1920 Main Street, Suite 300		Work Order:	18-03-2257
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392.002			Page 3 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	102	79-133	
1,2-Dichloroethane-d4	105	71-155	
Toluene-d8	100	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/26/18
Work Order: 18-03-2257
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Project: Infineon / 0444392.002

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B2-5-15	**18-03-2257-2-C**	**03/26/18 09:45**	**Solid**	**GC/MS Q**	**03/26/18**	**03/26/18 20:07**	**180326L021**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	50	1.00	
Benzene	ND	1.0	1.00	
Bromobenzene	ND	1.0	1.00	
Bromochloromethane	ND	2.0	1.00	
Bromodichloromethane	ND	1.0	1.00	
Bromoform	ND	5.0	1.00	
Bromomethane	ND	20	1.00	
2-Butanone	ND	20	1.00	
n-Butylbenzene	ND	1.0	1.00	
sec-Butylbenzene	ND	1.0	1.00	
tert-Butylbenzene	ND	1.0	1.00	
Carbon Disulfide	ND	10	1.00	
Carbon Tetrachloride	ND	1.0	1.00	
Chlorobenzene	ND	1.0	1.00	
Chloroethane	ND	2.0	1.00	
Chloroform	ND	1.0	1.00	
Chloromethane	ND	20	1.00	
2-Chlorotoluene	ND	1.0	1.00	
4-Chlorotoluene	ND	1.0	1.00	
Dibromochloromethane	ND	2.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.0	1.00	
1,2-Dibromoethane	ND	1.0	1.00	
Dibromomethane	ND	1.0	1.00	
1,2-Dichlorobenzene	ND	1.0	1.00	
1,3-Dichlorobenzene	ND	1.0	1.00	
1,4-Dichlorobenzene	ND	1.0	1.00	
Dichlorodifluoromethane	ND	2.0	1.00	
1,1-Dichloroethane	ND	1.0	1.00	
1,2-Dichloroethane	ND	1.0	1.00	
1,1-Dichloroethene	ND	1.0	1.00	
c-1,2-Dichloroethene	ND	1.0	1.00	
t-1,2-Dichloroethene	ND	1.0	1.00	
1,2-Dichloropropane	ND	1.0	1.00	
1,3-Dichloropropane	ND	1.0	1.00	
2,2-Dichloropropane	ND	5.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/26/18
1920 Main Street, Suite 300		Work Order:	18-03-2257
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392.002			Page 5 of 21

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.0	1.00	
c-1,3-Dichloropropene	ND	1.0	1.00	
t-1,3-Dichloropropene	ND	2.0	1.00	
Ethylbenzene	ND	1.0	1.00	
2-Hexanone	ND	20	1.00	
Isopropylbenzene	ND	1.0	1.00	
p-Isopropyltoluene	ND	1.0	1.00	
Methylene Chloride	ND	10	1.00	
4-Methyl-2-Pentanone	ND	20	1.00	
Naphthalene	ND	10	1.00	
n-Propylbenzene	ND	2.0	1.00	
Styrene	ND	1.0	1.00	
1,1,1,2-Tetrachloroethane	ND	1.0	1.00	
1,1,2,2-Tetrachloroethane	ND	2.0	1.00	
Tetrachloroethene	ND	1.0	1.00	
Toluene	ND	1.0	1.00	
1,2,3-Trichlorobenzene	ND	2.0	1.00	
1,2,4-Trichlorobenzene	ND	2.0	1.00	
1,1,1-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.00	
Trichloroethene	ND	2.0	1.00	
Trichlorofluoromethane	ND	10	1.00	
1,2,3-Trichloropropane	ND	2.0	1.00	
1,2,4-Trimethylbenzene	ND	2.0	1.00	
1,3,5-Trimethylbenzene	ND	2.0	1.00	
Vinyl Acetate	ND	10	1.00	
Vinyl Chloride	ND	1.0	1.00	
p/m-Xylene	ND	2.0	1.00	
o-Xylene	ND	1.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.0	1.00	
Tert-Butyl Alcohol (TBA)	ND	20	1.00	
Diisopropyl Ether (DIPE)	ND	1.0	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.0	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.0	1.00	
Ethanol	ND	500	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	97	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/26/18
1920 Main Street, Suite 300	Work Order:	18-03-2257
Irvine, CA 92614-7279	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: Infineon / 0444392.002		Page 6 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	103	79-133	
1,2-Dichloroethane-d4	107	71-155	
Toluene-d8	98	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392.002

Date Received: 03/26/18
Work Order: 18-03-2257
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B2-5-39	**18-03-2257-3-C**	**03/26/18 10:02**	**Solid**	**GC/MS Q**	**03/26/18**	**03/26/18 20:35**	**180326L021**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	52	1.00	
Benzene	ND	1.0	1.00	
Bromobenzene	ND	1.0	1.00	
Bromochloromethane	ND	2.1	1.00	
Bromodichloromethane	ND	1.0	1.00	
Bromoform	ND	5.2	1.00	
Bromomethane	ND	21	1.00	
2-Butanone	ND	21	1.00	
n-Butylbenzene	ND	1.0	1.00	
sec-Butylbenzene	ND	1.0	1.00	
tert-Butylbenzene	ND	1.0	1.00	
Carbon Disulfide	ND	10	1.00	
Carbon Tetrachloride	ND	1.0	1.00	
Chlorobenzene	ND	1.0	1.00	
Chloroethane	ND	2.1	1.00	
Chloroform	ND	1.0	1.00	
Chloromethane	ND	21	1.00	
2-Chlorotoluene	ND	1.0	1.00	
4-Chlorotoluene	ND	1.0	1.00	
Dibromochloromethane	ND	2.1	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.2	1.00	
1,2-Dibromoethane	ND	1.0	1.00	
Dibromomethane	ND	1.0	1.00	
1,2-Dichlorobenzene	ND	1.0	1.00	
1,3-Dichlorobenzene	ND	1.0	1.00	
1,4-Dichlorobenzene	ND	1.0	1.00	
Dichlorodifluoromethane	ND	2.1	1.00	
1,1-Dichloroethane	ND	1.0	1.00	
1,2-Dichloroethane	ND	1.0	1.00	
1,1-Dichloroethene	ND	1.0	1.00	
c-1,2-Dichloroethene	ND	1.0	1.00	
t-1,2-Dichloroethene	ND	1.0	1.00	
1,2-Dichloropropane	ND	1.0	1.00	
1,3-Dichloropropane	ND	1.0	1.00	
2,2-Dichloropropane	ND	5.2	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/26/18
1920 Main Street, Suite 300		Work Order:	18-03-2257
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392.002			Page 8 of 21

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.1	1.00	
c-1,3-Dichloropropene	ND	1.0	1.00	
t-1,3-Dichloropropene	ND	2.1	1.00	
Ethylbenzene	ND	1.0	1.00	
2-Hexanone	ND	21	1.00	
Isopropylbenzene	ND	1.0	1.00	
p-Isopropyltoluene	ND	1.0	1.00	
Methylene Chloride	ND	10	1.00	
4-Methyl-2-Pentanone	ND	21	1.00	
Naphthalene	ND	10	1.00	
n-Propylbenzene	ND	2.1	1.00	
Styrene	ND	1.0	1.00	
1,1,1,2-Tetrachloroethane	ND	1.0	1.00	
1,1,2,2-Tetrachloroethane	ND	2.1	1.00	
Tetrachloroethene	ND	1.0	1.00	
Toluene	ND	1.0	1.00	
1,2,3-Trichlorobenzene	ND	2.1	1.00	
1,2,4-Trichlorobenzene	ND	2.1	1.00	
1,1,1-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.00	
Trichloroethene	ND	2.1	1.00	
Trichlorofluoromethane	ND	10	1.00	
1,2,3-Trichloropropane	ND	2.1	1.00	
1,2,4-Trimethylbenzene	ND	2.1	1.00	
1,3,5-Trimethylbenzene	ND	2.1	1.00	
Vinyl Acetate	ND	10	1.00	
Vinyl Chloride	ND	1.0	1.00	
p/m-Xylene	ND	2.1	1.00	
o-Xylene	ND	1.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.1	1.00	
Tert-Butyl Alcohol (TBA)	ND	21	1.00	
Diisopropyl Ether (DIPE)	ND	1.0	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.0	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.0	1.00	
Ethanol	ND	520	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	96	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/26/18
1920 Main Street, Suite 300		Work Order:	18-03-2257
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392.002			Page 9 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	100	79-133	
1,2-Dichloroethane-d4	104	71-155	
Toluene-d8	98	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392.002

Date Received: 03/26/18
Work Order: 18-03-2257
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B2-5-55	**18-03-2257-4-C**	**03/26/18 10:21**	**Solid**	**GC/MS Q**	**03/26/18**	**03/26/18 21:02**	**180326L021**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	56	1.00	
Benzene	ND	1.1	1.00	
Bromobenzene	ND	1.1	1.00	
Bromochloromethane	ND	2.2	1.00	
Bromodichloromethane	ND	1.1	1.00	
Bromoform	ND	5.6	1.00	
Bromomethane	ND	22	1.00	
2-Butanone	ND	22	1.00	
n-Butylbenzene	ND	1.1	1.00	
sec-Butylbenzene	ND	1.1	1.00	
tert-Butylbenzene	ND	1.1	1.00	
Carbon Disulfide	ND	11	1.00	
Carbon Tetrachloride	ND	1.1	1.00	
Chlorobenzene	ND	1.1	1.00	
Chloroethane	ND	2.2	1.00	
Chloroform	ND	1.1	1.00	
Chloromethane	ND	22	1.00	
2-Chlorotoluene	ND	1.1	1.00	
4-Chlorotoluene	ND	1.1	1.00	
Dibromochloromethane	ND	2.2	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.6	1.00	
1,2-Dibromoethane	ND	1.1	1.00	
Dibromomethane	ND	1.1	1.00	
1,2-Dichlorobenzene	ND	1.1	1.00	
1,3-Dichlorobenzene	ND	1.1	1.00	
1,4-Dichlorobenzene	ND	1.1	1.00	
Dichlorodifluoromethane	ND	2.2	1.00	
1,1-Dichloroethane	ND	1.1	1.00	
1,2-Dichloroethane	ND	1.1	1.00	
1,1-Dichloroethene	ND	1.1	1.00	
c-1,2-Dichloroethene	ND	1.1	1.00	
t-1,2-Dichloroethene	ND	1.1	1.00	
1,2-Dichloropropane	ND	1.1	1.00	
1,3-Dichloropropane	ND	1.1	1.00	
2,2-Dichloropropane	ND	5.6	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/26/18
1920 Main Street, Suite 300		Work Order:	18-03-2257
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392.002			Page 11 of 21

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.2	1.00	
c-1,3-Dichloropropene	ND	1.1	1.00	
t-1,3-Dichloropropene	ND	2.2	1.00	
Ethylbenzene	ND	1.1	1.00	
2-Hexanone	ND	22	1.00	
Isopropylbenzene	ND	1.1	1.00	
p-Isopropyltoluene	ND	1.1	1.00	
Methylene Chloride	ND	11	1.00	
4-Methyl-2-Pentanone	ND	22	1.00	
Naphthalene	ND	11	1.00	
n-Propylbenzene	ND	2.2	1.00	
Styrene	ND	1.1	1.00	
1,1,1,2-Tetrachloroethane	ND	1.1	1.00	
1,1,2,2-Tetrachloroethane	ND	2.2	1.00	
Tetrachloroethene	ND	1.1	1.00	
Toluene	ND	1.1	1.00	
1,2,3-Trichlorobenzene	ND	2.2	1.00	
1,2,4-Trichlorobenzene	ND	2.2	1.00	
1,1,1-Trichloroethane	ND	1.1	1.00	
1,1,2-Trichloroethane	ND	1.1	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	11	1.00	
Trichloroethene	ND	2.2	1.00	
Trichlorofluoromethane	ND	11	1.00	
1,2,3-Trichloropropane	ND	2.2	1.00	
1,2,4-Trimethylbenzene	ND	2.2	1.00	
1,3,5-Trimethylbenzene	ND	2.2	1.00	
Vinyl Acetate	ND	11	1.00	
Vinyl Chloride	ND	1.1	1.00	
p/m-Xylene	ND	2.2	1.00	
o-Xylene	ND	1.1	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.2	1.00	
Tert-Butyl Alcohol (TBA)	ND	22	1.00	
Diisopropyl Ether (DIPE)	ND	1.1	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.1	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.1	1.00	
Ethanol	ND	560	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	96	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/26/18
1920 Main Street, Suite 300		Work Order:	18-03-2257
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392.002			Page 12 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	102	79-133	
1,2-Dichloroethane-d4	104	71-155	
Toluene-d8	98	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392.002

Date Received: 03/26/18
Work Order: 18-03-2257
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B2-5-80	**18-03-2257-5-C**	**03/26/18 10:57**	**Solid**	**GC/MS Q**	**03/26/18**	**03/26/18 21:29**	**180326L021**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	56	1.00	
Benzene	ND	1.1	1.00	
Bromobenzene	ND	1.1	1.00	
Bromochloromethane	ND	2.3	1.00	
Bromodichloromethane	ND	1.1	1.00	
Bromoform	ND	5.6	1.00	
Bromomethane	ND	23	1.00	
2-Butanone	ND	23	1.00	
n-Butylbenzene	ND	1.1	1.00	
sec-Butylbenzene	ND	1.1	1.00	
tert-Butylbenzene	ND	1.1	1.00	
Carbon Disulfide	ND	11	1.00	
Carbon Tetrachloride	ND	1.1	1.00	
Chlorobenzene	ND	1.1	1.00	
Chloroethane	ND	2.3	1.00	
Chloroform	ND	1.1	1.00	
Chloromethane	ND	23	1.00	
2-Chlorotoluene	ND	1.1	1.00	
4-Chlorotoluene	ND	1.1	1.00	
Dibromochloromethane	ND	2.3	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.6	1.00	
1,2-Dibromoethane	ND	1.1	1.00	
Dibromomethane	ND	1.1	1.00	
1,2-Dichlorobenzene	ND	1.1	1.00	
1,3-Dichlorobenzene	ND	1.1	1.00	
1,4-Dichlorobenzene	ND	1.1	1.00	
Dichlorodifluoromethane	ND	2.3	1.00	
1,1-Dichloroethane	ND	1.1	1.00	
1,2-Dichloroethane	ND	1.1	1.00	
1,1-Dichloroethene	ND	1.1	1.00	
c-1,2-Dichloroethene	ND	1.1	1.00	
t-1,2-Dichloroethene	ND	1.1	1.00	
1,2-Dichloropropane	ND	1.1	1.00	
1,3-Dichloropropane	ND	1.1	1.00	
2,2-Dichloropropane	ND	5.6	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/26/18
1920 Main Street, Suite 300		Work Order:	18-03-2257
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392.002			Page 14 of 21

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.3	1.00	
c-1,3-Dichloropropene	ND	1.1	1.00	
t-1,3-Dichloropropene	ND	2.3	1.00	
Ethylbenzene	ND	1.1	1.00	
2-Hexanone	ND	23	1.00	
Isopropylbenzene	ND	1.1	1.00	
p-Isopropyltoluene	ND	1.1	1.00	
Methylene Chloride	ND	11	1.00	
4-Methyl-2-Pentanone	ND	23	1.00	
Naphthalene	ND	11	1.00	
n-Propylbenzene	ND	2.3	1.00	
Styrene	ND	1.1	1.00	
1,1,1,2-Tetrachloroethane	ND	1.1	1.00	
1,1,2,2-Tetrachloroethane	ND	2.3	1.00	
Tetrachloroethene	ND	1.1	1.00	
Toluene	ND	1.1	1.00	
1,2,3-Trichlorobenzene	ND	2.3	1.00	
1,2,4-Trichlorobenzene	ND	2.3	1.00	
1,1,1-Trichloroethane	ND	1.1	1.00	
1,1,2-Trichloroethane	ND	1.1	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	11	1.00	
Trichloroethene	ND	2.3	1.00	
Trichlorofluoromethane	ND	11	1.00	
1,2,3-Trichloropropane	ND	2.3	1.00	
1,2,4-Trimethylbenzene	ND	2.3	1.00	
1,3,5-Trimethylbenzene	ND	2.3	1.00	
Vinyl Acetate	ND	11	1.00	
Vinyl Chloride	ND	1.1	1.00	
p/m-Xylene	ND	2.3	1.00	
o-Xylene	ND	1.1	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.3	1.00	
Tert-Butyl Alcohol (TBA)	ND	23	1.00	
Diisopropyl Ether (DIPE)	ND	1.1	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.1	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.1	1.00	
Ethanol	ND	560	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	96	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/26/18
1920 Main Street, Suite 300		Work Order:	18-03-2257
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392.002			Page 15 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	102	79-133	
1,2-Dichloroethane-d4	106	71-155	
Toluene-d8	99	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392.002

Date Received: 03/26/18
Work Order: 18-03-2257
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B2-15-5	**18-03-2257-6-C**	**03/26/18 00:00**	**Solid**	**GC/MS Q**	**03/26/18**	**03/26/18 21:57**	**180326L021**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	47	1.00	
Benzene	ND	0.94	1.00	
Bromobenzene	ND	0.94	1.00	
Bromochloromethane	ND	1.9	1.00	
Bromodichloromethane	ND	0.94	1.00	
Bromoform	ND	4.7	1.00	
Bromomethane	ND	19	1.00	
2-Butanone	ND	19	1.00	
n-Butylbenzene	ND	0.94	1.00	
sec-Butylbenzene	ND	0.94	1.00	
tert-Butylbenzene	ND	0.94	1.00	
Carbon Disulfide	ND	9.4	1.00	
Carbon Tetrachloride	ND	0.94	1.00	
Chlorobenzene	ND	0.94	1.00	
Chloroethane	ND	1.9	1.00	
Chloroform	ND	0.94	1.00	
Chloromethane	ND	19	1.00	
2-Chlorotoluene	ND	0.94	1.00	
4-Chlorotoluene	ND	0.94	1.00	
Dibromochloromethane	ND	1.9	1.00	
1,2-Dibromo-3-Chloropropane	ND	4.7	1.00	
1,2-Dibromoethane	ND	0.94	1.00	
Dibromomethane	ND	0.94	1.00	
1,2-Dichlorobenzene	ND	0.94	1.00	
1,3-Dichlorobenzene	ND	0.94	1.00	
1,4-Dichlorobenzene	ND	0.94	1.00	
Dichlorodifluoromethane	ND	1.9	1.00	
1,1-Dichloroethane	ND	0.94	1.00	
1,2-Dichloroethane	ND	0.94	1.00	
1,1-Dichloroethene	ND	0.94	1.00	
c-1,2-Dichloroethene	ND	0.94	1.00	
t-1,2-Dichloroethene	ND	0.94	1.00	
1,2-Dichloropropane	ND	0.94	1.00	
1,3-Dichloropropane	ND	0.94	1.00	
2,2-Dichloropropane	ND	4.7	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/26/18
1920 Main Street, Suite 300		Work Order:	18-03-2257
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392.002			Page 17 of 21

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	1.9	1.00	
c-1,3-Dichloropropene	ND	0.94	1.00	
t-1,3-Dichloropropene	ND	1.9	1.00	
Ethylbenzene	ND	0.94	1.00	
2-Hexanone	ND	19	1.00	
Isopropylbenzene	ND	0.94	1.00	
p-Isopropyltoluene	ND	0.94	1.00	
Methylene Chloride	ND	9.4	1.00	
4-Methyl-2-Pentanone	ND	19	1.00	
Naphthalene	ND	9.4	1.00	
n-Propylbenzene	ND	1.9	1.00	
Styrene	ND	0.94	1.00	
1,1,1,2-Tetrachloroethane	ND	0.94	1.00	
1,1,2,2-Tetrachloroethane	ND	1.9	1.00	
Tetrachloroethene	ND	0.94	1.00	
Toluene	ND	0.94	1.00	
1,2,3-Trichlorobenzene	ND	1.9	1.00	
1,2,4-Trichlorobenzene	ND	1.9	1.00	
1,1,1-Trichloroethane	ND	0.94	1.00	
1,1,2-Trichloroethane	ND	0.94	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	9.4	1.00	
Trichloroethene	ND	1.9	1.00	
Trichlorofluoromethane	ND	9.4	1.00	
1,2,3-Trichloropropane	ND	1.9	1.00	
1,2,4-Trimethylbenzene	ND	1.9	1.00	
1,3,5-Trimethylbenzene	ND	1.9	1.00	
Vinyl Acetate	ND	9.4	1.00	
Vinyl Chloride	ND	0.94	1.00	
p/m-Xylene	ND	1.9	1.00	
o-Xylene	ND	0.94	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	1.9	1.00	
Tert-Butyl Alcohol (TBA)	ND	19	1.00	
Diisopropyl Ether (DIPE)	ND	0.94	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.94	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.94	1.00	
Ethanol	ND	470	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	96	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/26/18
1920 Main Street, Suite 300		Work Order:	18-03-2257
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392.002			Page 18 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	102	79-133	
1,2-Dichloroethane-d4	105	71-155	
Toluene-d8	99	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392.002

Date Received:	03/26/18
Work Order:	18-03-2257
Preparation:	EPA 5035
Method:	EPA 8260B
Units:	ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**095-01-025-29806**	**N/A**	**Solid**	**GC/MS Q**	**03/26/18**	**03/26/18 12:23**	**180326L021**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	50	1.00	
Benzene	ND	1.0	1.00	
Bromobenzene	ND	1.0	1.00	
Bromochloromethane	ND	2.0	1.00	
Bromodichloromethane	ND	1.0	1.00	
Bromoform	ND	5.0	1.00	
Bromomethane	ND	20	1.00	
2-Butanone	ND	20	1.00	
n-Butylbenzene	ND	1.0	1.00	
sec-Butylbenzene	ND	1.0	1.00	
tert-Butylbenzene	ND	1.0	1.00	
Carbon Disulfide	ND	10	1.00	
Carbon Tetrachloride	ND	1.0	1.00	
Chlorobenzene	ND	1.0	1.00	
Chloroethane	ND	2.0	1.00	
Chloroform	ND	1.0	1.00	
Chloromethane	ND	20	1.00	
2-Chlorotoluene	ND	1.0	1.00	
4-Chlorotoluene	ND	1.0	1.00	
Dibromochloromethane	ND	2.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.0	1.00	
1,2-Dibromoethane	ND	1.0	1.00	
Dibromomethane	ND	1.0	1.00	
1,2-Dichlorobenzene	ND	1.0	1.00	
1,3-Dichlorobenzene	ND	1.0	1.00	
1,4-Dichlorobenzene	ND	1.0	1.00	
Dichlorodifluoromethane	ND	2.0	1.00	
1,1-Dichloroethane	ND	1.0	1.00	
1,2-Dichloroethane	ND	1.0	1.00	
1,1-Dichloroethene	ND	1.0	1.00	
c-1,2-Dichloroethene	ND	1.0	1.00	
t-1,2-Dichloroethene	ND	1.0	1.00	
1,2-Dichloropropane	ND	1.0	1.00	
1,3-Dichloropropane	ND	1.0	1.00	
2,2-Dichloropropane	ND	5.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/26/18
1920 Main Street, Suite 300		Work Order:	18-03-2257
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392.002			Page 20 of 21

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.0	1.00	
c-1,3-Dichloropropene	ND	1.0	1.00	
t-1,3-Dichloropropene	ND	2.0	1.00	
Ethylbenzene	ND	1.0	1.00	
2-Hexanone	ND	20	1.00	
Isopropylbenzene	ND	1.0	1.00	
p-Isopropyltoluene	ND	1.0	1.00	
Methylene Chloride	ND	10	1.00	
4-Methyl-2-Pentanone	ND	20	1.00	
Naphthalene	ND	10	1.00	
n-Propylbenzene	ND	2.0	1.00	
Styrene	ND	1.0	1.00	
1,1,1,2-Tetrachloroethane	ND	1.0	1.00	
1,1,2,2-Tetrachloroethane	ND	2.0	1.00	
Tetrachloroethene	ND	1.0	1.00	
Toluene	ND	1.0	1.00	
1,2,3-Trichlorobenzene	ND	2.0	1.00	
1,2,4-Trichlorobenzene	ND	2.0	1.00	
1,1,1-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.00	
Trichloroethene	ND	2.0	1.00	
Trichlorofluoromethane	ND	10	1.00	
1,2,3-Trichloropropane	ND	2.0	1.00	
1,2,4-Trimethylbenzene	ND	2.0	1.00	
1,3,5-Trimethylbenzene	ND	2.0	1.00	
Vinyl Acetate	ND	10	1.00	
Vinyl Chloride	ND	1.0	1.00	
p/m-Xylene	ND	2.0	1.00	
o-Xylene	ND	1.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.0	1.00	
Tert-Butyl Alcohol (TBA)	ND	20	1.00	
Diisopropyl Ether (DIPE)	ND	1.0	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.0	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.0	1.00	
Ethanol	ND	500	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	95	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/26/18
1920 Main Street, Suite 300		Work Order:	18-03-2257
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392.002			Page 21 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	101	79-133	
1,2-Dichloroethane-d4	96	71-155	
Toluene-d8	98	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Quality Control - Spike/Spike Duplicate

ERM-WEST		Date Received:	03/26/18
1920 Main Street, Suite 300		Work Order:	18-03-2257
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
Project: Infineon / 0444392.002			Page 1 of 2

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
18-03-1804-2	**Sample**	**Aqueous**	**GC/MS V V**	**03/26/18**	**03/26/18 17:21**	**180326S008**
18-03-1804-2	**Matrix Spike**	**Aqueous**	**GC/MS V V**	**03/26/18**	**03/26/18 17:50**	**180326S008**
18-03-1804-2	**Matrix Spike Duplicate**	**Aqueous**	**GC/MS V V**	**03/26/18**	**03/26/18 18:19**	**180326S008**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Acetone	ND	50.00	108.8	218	100.8	202	34-166	8	0-33	3
Benzene	ND	50.00	39.43	79	44.68	89	75-125	13	0-20	
Bromobenzene	ND	50.00	44.03	88	48.17	96	75-125	9	0-20	
Bromochloromethane	ND	50.00	48.74	97	52.54	105	75-125	8	0-20	
Bromodichloromethane	ND	50.00	41.79	84	45.18	90	75-134	8	0-20	
Bromoform	ND	50.00	44.58	89	46.62	93	74-134	4	0-20	
Bromomethane	ND	50.00	34.57	69	38.77	78	20-168	11	0-40	
2-Butanone	ND	50.00	75.52	151	71.38	143	37-157	6	0-20	
n-Butylbenzene	ND	50.00	42.41	85	50.35	101	73-145	17	0-20	
sec-Butylbenzene	ND	50.00	42.48	85	50.51	101	75-135	17	0-20	
tert-Butylbenzene	ND	50.00	41.99	84	48.97	98	75-136	15	0-20	
Carbon Disulfide	ND	50.00	38.83	78	46.54	93	50-152	18	0-27	
Carbon Tetrachloride	ND	50.00	44.53	89	51.97	104	70-154	15	0-20	
Chlorobenzene	ND	50.00	42.79	86	47.46	95	75-125	10	0-20	
Chloroethane	ND	50.00	44.74	89	50.48	101	41-167	12	0-26	
Chloroform	ND	50.00	39.05	78	43.57	87	75-127	11	0-20	
Chloromethane	ND	50.00	37.55	75	45.38	91	41-149	19	0-20	
2-Chlorotoluene	ND	50.00	42.01	84	47.73	95	75-128	13	0-20	
4-Chlorotoluene	ND	50.00	41.11	82	46.48	93	75-125	12	0-20	
Dibromochloromethane	ND	50.00	45.12	90	47.65	95	75-131	5	0-20	
1,2-Dibromo-3-Chloropropane	ND	50.00	50.24	100	49.80	100	64-142	1	0-20	
1,2-Dibromoethane	ND	50.00	46.22	92	47.43	95	75-129	3	0-20	
Dibromomethane	ND	50.00	43.94	88	46.72	93	75-125	6	0-20	
1,2-Dichlorobenzene	ND	50.00	44.17	88	48.44	97	75-125	9	0-20	
1,3-Dichlorobenzene	ND	50.00	42.58	85	47.89	96	75-125	12	0-20	
1,4-Dichlorobenzene	ND	50.00	42.53	85	47.34	95	75-125	11	0-20	
Dichlorodifluoromethane	ND	50.00	50.44	101	55.10	110	25-157	9	0-26	
1,1-Dichloroethane	ND	50.00	38.85	78	43.92	88	73-139	12	0-20	
1,2-Dichloroethane	ND	50.00	42.31	85	44.95	90	75-125	6	0-20	
1,1-Dichloroethene	ND	50.00	40.06	80	46.54	93	61-145	15	0-20	
c-1,2-Dichloroethene	ND	50.00	38.33	77	43.51	87	75-125	13	0-20	
t-1,2-Dichloroethene	ND	50.00	38.62	77	44.92	90	64-142	15	0-20	
1,2-Dichloropropane	ND	50.00	39.85	80	44.46	89	75-127	11	0-20	
1,3-Dichloropropane	ND	50.00	43.02	86	45.03	90	75-125	5	0-20	
2,2-Dichloropropane	ND	50.00	43.67	87	50.26	101	24-180	14	0-20	

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - Spike/Spike Duplicate

ERM-WEST	Date Received:	03/26/18
1920 Main Street, Suite 300	Work Order:	18-03-2257
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
Project: Infineon / 0444392.002		Page 2 of 2

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
1,1-Dichloropropene	ND	50.00	40.45	81	47.32	95	75-135	16	0-20	
c-1,3-Dichloropropene	ND	50.00	40.94	82	45.46	91	75-137	10	0-20	
t-1,3-Dichloropropene	ND	50.00	43.94	88	47.16	94	74-146	7	0-20	
Ethylbenzene	ND	50.00	42.73	85	48.82	98	75-129	13	0-20	
2-Hexanone	ND	50.00	72.39	145	66.39	133	47-161	9	0-20	
Isopropylbenzene	ND	50.00	42.51	85	49.36	99	75-135	15	0-20	
p-Isopropyltoluene	ND	50.00	42.76	86	50.31	101	75-136	16	0-20	
Methylene Chloride	ND	50.00	39.52	79	43.68	87	63-141	10	0-20	
4-Methyl-2-Pentanone	ND	50.00	48.06	96	47.18	94	66-138	2	0-20	
Naphthalene	ND	50.00	46.50	93	50.64	101	59-143	9	0-20	
n-Propylbenzene	ND	50.00	42.45	85	50.40	101	75-133	17	0-20	
Styrene	ND	50.00	43.81	88	48.59	97	70-142	10	0-28	
1,1,1,2-Tetrachloroethane	ND	50.00	44.00	88	48.15	96	75-139	9	0-20	
1,1,2,2-Tetrachloroethane	ND	50.00	45.25	90	44.97	90	61-145	1	0-20	
Tetrachloroethene	ND	50.00	44.72	89	52.06	104	47-143	15	0-20	
Toluene	ND	50.00	40.17	80	45.63	91	75-125	13	0-20	
1,2,3-Trichlorobenzene	ND	50.00	44.14	88	49.37	99	73-133	11	0-20	
1,2,4-Trichlorobenzene	ND	50.00	42.85	86	49.11	98	71-137	14	0-20	
1,1,1-Trichloroethane	ND	50.00	39.60	79	46.75	94	75-136	17	0-20	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	50.00	46.92	94	54.21	108	42-168	14	0-22	
1,1,2-Trichloroethane	ND	50.00	43.80	88	45.90	92	75-125	5	0-20	
Trichloroethene	ND	50.00	40.25	81	46.36	93	67-139	14	0-20	
Trichlorofluoromethane	ND	50.00	51.95	104	56.58	113	59-155	9	0-20	
1,2,3-Trichloropropane	ND	50.00	47.76	96	48.94	98	75-127	2	0-20	
1,2,4-Trimethylbenzene	ND	50.00	41.93	84	47.76	96	75-133	13	0-20	
1,3,5-Trimethylbenzene	ND	50.00	42.90	86	49.55	99	75-135	14	0-20	
Vinyl Acetate	ND	50.00	51.05	102	53.25	106	54-180	4	0-25	
Vinyl Chloride	ND	50.00	52.48	105	60.33	121	51-153	14	0-20	
p/m-Xylene	ND	100.0	86.73	87	98.43	98	75-133	13	0-20	
o-Xylene	ND	50.00	42.78	86	48.48	97	75-134	12	0-20	
Methyl-t-Butyl Ether (MTBE)	ND	50.00	39.76	80	41.97	84	64-136	5	0-20	
Tert-Butyl Alcohol (TBA)	19.98	250.0	254.9	94	257.5	95	75-136	1	0-20	
Diisopropyl Ether (DIPE)	27.91	50.00	65.14	74	68.87	82	73-139	6	0-20	
Ethyl-t-Butyl Ether (ETBE)	ND	50.00	38.10	76	40.40	81	69-135	6	0-20	
Tert-Amyl-Methyl Ether (TAME)	ND	50.00	40.14	80	42.13	84	69-135	5	0-20	
Ethanol	ND	500.0	401.8	80	387.0	77	29-179	4	0-25	

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS

ERM-WEST		Date Received:	03/26/18
1920 Main Street, Suite 300		Work Order:	18-03-2257
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
Project: Infineon / 0444392.002			Page 1 of 3

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-14-001-25500	**LCS**	**Aqueous**	**GC/MS V V**	**03/26/18**	**03/26/18 15:50**	**180326L016**

Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	ME CL	Qualifiers
Acetone	50.00	43.80	88	53-137	39-151	
Benzene	50.00	47.03	94	79-121	72-128	
Bromobenzene	50.00	52.14	104	80-120	73-127	
Bromochloromethane	50.00	52.68	105	80-122	73-129	
Bromodichloromethane	50.00	49.26	99	80-124	73-131	
Bromoform	50.00	49.88	100	73-127	64-136	
Bromomethane	50.00	45.98	92	50-150	33-167	
2-Butanone	50.00	45.44	91	60-126	49-137	
n-Butylbenzene	50.00	51.74	103	72-138	61-149	
sec-Butylbenzene	50.00	51.67	103	77-131	68-140	
tert-Butylbenzene	50.00	50.48	101	80-125	72-132	
Carbon Disulfide	50.00	46.65	93	50-150	33-167	
Carbon Tetrachloride	50.00	50.54	101	65-143	52-156	
Chlorobenzene	50.00	50.47	101	80-120	73-127	
Chloroethane	50.00	47.45	95	62-128	51-139	
Chloroform	50.00	46.50	93	80-120	73-127	
Chloromethane	50.00	44.48	89	43-133	28-148	
2-Chlorotoluene	50.00	50.62	101	80-121	73-128	
4-Chlorotoluene	50.00	48.98	98	80-120	73-127	
Dibromochloromethane	50.00	51.22	102	80-123	73-130	
1,2-Dibromo-3-Chloropropane	50.00	48.64	97	66-126	56-136	
1,2-Dibromoethane	50.00	50.59	101	80-120	73-127	
Dibromomethane	50.00	48.90	98	80-120	73-127	
1,2-Dichlorobenzene	50.00	51.91	104	80-120	73-127	
1,3-Dichlorobenzene	50.00	51.74	103	80-120	73-127	
1,4-Dichlorobenzene	50.00	50.43	101	80-120	73-127	
Dichlorodifluoromethane	50.00	37.45	75	50-150	33-167	
1,1-Dichloroethane	50.00	46.14	92	72-126	63-135	
1,2-Dichloroethane	50.00	47.91	96	76-120	69-127	
1,1-Dichloroethene	50.00	47.28	95	66-132	55-143	
c-1,2-Dichloroethene	50.00	46.54	93	78-120	71-127	
t-1,2-Dichloroethene	50.00	46.84	94	66-132	55-143	
1,2-Dichloropropane	50.00	47.15	94	80-120	73-127	
1,3-Dichloropropane	50.00	48.34	97	80-120	73-127	
2,2-Dichloropropane	50.00	51.31	103	50-150	33-167	
1,1-Dichloropropene	50.00	46.98	94	75-123	67-131	
c-1,3-Dichloropropene	50.00	47.72	95	77-131	68-140	
t-1,3-Dichloropropene	50.00	49.94	100	76-136	66-146	

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS

ERM-WEST		Date Received:	03/26/18
1920 Main Street, Suite 300		Work Order:	18-03-2257
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
Project: Infineon / 0444392.002			Page 2 of 3

Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	ME CL	Qualifiers
Ethylbenzene	50.00	50.62	101	80-120	73-127	
2-Hexanone	50.00	43.79	88	63-123	53-133	
Isopropylbenzene	50.00	51.04	102	80-128	72-136	
p-Isopropyltoluene	50.00	51.74	103	73-133	63-143	
Methylene Chloride	50.00	46.79	94	61-133	49-145	
4-Methyl-2-Pentanone	50.00	43.82	88	65-125	55-135	
Naphthalene	50.00	49.90	100	69-129	59-139	
n-Propylbenzene	50.00	51.35	103	80-128	72-136	
Styrene	50.00	51.88	104	80-126	72-134	
1,1,1,2-Tetrachloroethane	50.00	52.08	104	80-129	72-137	
1,1,2,2-Tetrachloroethane	50.00	45.99	92	74-122	66-130	
Tetrachloroethene	50.00	56.24	112	55-139	41-153	
Toluene	50.00	47.97	96	80-120	73-127	
1,2,3-Trichlorobenzene	50.00	54.03	108	72-132	62-142	
1,2,4-Trichlorobenzene	50.00	53.58	107	74-134	64-144	
1,1,1-Trichloroethane	50.00	46.88	94	76-124	68-132	
1,1,2-Trichloro-1,2,2-Trifluoroethane	50.00	49.18	98	54-150	38-166	
1,1,2-Trichloroethane	50.00	48.69	97	80-120	73-127	
Trichloroethene	50.00	48.84	98	79-121	72-128	
Trichlorofluoromethane	50.00	43.52	87	72-132	62-142	
1,2,3-Trichloropropane	50.00	48.38	97	75-123	67-131	
1,2,4-Trimethylbenzene	50.00	51.16	102	74-128	65-137	
1,3,5-Trimethylbenzene	50.00	51.86	104	77-131	68-140	
Vinyl Acetate	50.00	40.85	82	50-150	33-167	
Vinyl Chloride	50.00	50.39	101	63-129	52-140	
p/m-Xylene	100.0	102.6	103	80-122	73-129	
o-Xylene	50.00	51.42	103	80-128	72-136	
Methyl-t-Butyl Ether (MTBE)	50.00	44.96	90	69-123	60-132	
Tert-Butyl Alcohol (TBA)	250.0	263.8	106	80-124	73-131	
Diisopropyl Ether (DIPE)	50.00	44.82	90	79-121	72-128	
Ethyl-t-Butyl Ether (ETBE)	50.00	44.03	88	71-125	62-134	
Tert-Amyl-Methyl Ether (TAME)	50.00	46.23	92	70-124	61-133	
Ethanol	500.0	497.1	99	53-149	37-165	

Total number of LCS compounds: 71
Total number of ME compounds: 0
Total number of ME compounds allowed: 4
LCS ME CL validation result: Pass

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS/LCSD

ERM-WEST		Date Received:	03/26/18
1920 Main Street, Suite 300		Work Order:	18-03-2257
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
Project: Infineon / 0444392.002			Page 3 of 3

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
095-01-025-29806	**LCS**	**Solid**	**GC/MS Q**	**03/26/18**	**03/26/18 10:47**	**180326L021**
095-01-025-29806	**LCSD**	**Solid**	**GC/MS Q**	**03/26/18**	**03/26/18 11:15**	**180326L021**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Benzene	50.00	43.59	87	43.91	88	80-120	73-127	1	0-20	
Carbon Tetrachloride	50.00	51.72	103	52.61	105	65-137	53-149	2	0-20	
Chlorobenzene	50.00	45.55	91	46.21	92	80-120	73-127	1	0-20	
1,2-Dibromoethane	50.00	48.44	97	49.37	99	80-120	73-127	2	0-20	
1,2-Dichlorobenzene	50.00	47.21	94	47.98	96	80-120	73-127	2	0-20	
1,2-Dichloroethane	50.00	42.86	86	43.05	86	80-120	73-127	0	0-20	
1,1-Dichloroethene	50.00	43.52	87	43.33	87	68-128	58-138	0	0-20	
Ethylbenzene	50.00	44.82	90	45.54	91	80-120	73-127	2	0-20	
Toluene	50.00	43.80	88	44.47	89	80-120	73-127	2	0-20	
Trichloroethene	50.00	43.62	87	43.96	88	80-120	73-127	1	0-20	
Vinyl Chloride	50.00	35.98	72	37.87	76	67-127	57-137	5	0-20	
p/m-Xylene	100.0	89.06	89	90.05	90	75-125	67-133	1	0-25	
o-Xylene	50.00	45.28	91	45.40	91	75-125	67-133	0	0-25	
Methyl-t-Butyl Ether (MTBE)	50.00	42.59	85	43.35	87	70-124	61-133	2	0-20	
Tert-Butyl Alcohol (TBA)	250.0	285.9	114	274.8	110	73-121	65-129	4	0-20	
Diisopropyl Ether (DIPE)	50.00	44.32	89	45.01	90	69-129	59-139	2	0-20	
Ethyl-t-Butyl Ether (ETBE)	50.00	43.27	87	43.84	88	70-124	61-133	1	0-20	
Tert-Amyl-Methyl Ether (TAME)	50.00	43.92	88	44.99	90	74-122	66-130	2	0-20	
Ethanol	500.0	502.6	101	465.4	93	51-135	37-149	8	0-27	

Total number of LCS compounds: 19
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

RPD: Relative Percent Difference. CL: Control Limits

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Sample Analysis Summary Report

Work Order: 18-03-2257 Page 1 of 1

Method	Extraction	Chemist ID	Instrument	Analytical Location
EPA 8260B	EPA 5035	1055	GC/MS Q	2
EPA 8260B	EPA 5030C	1120	GC/MS V V	2

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Glossary of Terms and Qualifiers

Work Order: 18-03-2257 Page 1 of 1

Qualifiers	Definition
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
CI	See case narrative.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

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Revised COC received from Maggie Tymkow (ERM) on 03/27/2018 at 11:52am.
- Virendra (ECI)

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WO NO. / LAB USE ONLY
18-03-2257

CHAIN-OF-CUSTODY RECORD

Date 3/26/2018
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LABORATORY CLIENT: ERM
ADDRESS: 1920 Main Street - Suite 300
CITY: Irvine STATE: CA ZIP: 92614
TEL: 949-623-4700 E-MAIL: See Special Instructions

CLIENT PROJECT NAME / NO.: Infineon
P.O. NO.: 0444392 - 002
PROJECT CONTACT: Maggie.Tymkow
LAB CONTACT OR QUOTE NO.: Virendra Patel
GLOBAL ID:
LOG CODE:
SAMPLER(S): (PRINT) Manuel Leos

TURNAROUND TIME (Rush surcharges may apply to any TAT not "STANDARD"):
☐ SAME DAY ☒ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAYS ☐ STANDARD

EDD
☐ COELT EDF ☐ OTHER

SPECIAL INSTRUCTIONS: EQuIS

Email to: maggie.tymkow@erm.com
Stewart.emthof@erm.com
Brad.cross@erm.com
Tony.Parenteau@erm.com

REQUESTED ANALYSES
Please check box or fill in blank as needed.

LAB USE ONLY	SAMPLE ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	Unpreserved	Preserved	Field Filtered	☐ TPH(g) ☐ GRO	☐ TPH(d) ☐ DRO	TPH ☐ C6-C36 ☐ C6-C44	TPH _____	BTEX / MTBE ☐ 8260 ☐ _____	VOCs (8260)	Oxygenates (8260)	Prep (5035) ☐ En Core ☒ Terra Core	SVOCs (8270)	Pesticides (8081)	PCBs (8082)	PAHs ☐ 8270 ☐ 8270 SIM	T22 Metals ☐ 6010/747X ☐ 6020/747X	Cr(VI) ☐ 7196 ☐ 7199 ☐ 218.6
1	B2-5-5	3/26/18	09:09	Soil	1 Kit									✓								
2	B2-5-15	3/26/18	09:45	Soil	1 Kit									✓								
3	B2-5-39	3/26/18	10:02	Soil	1 Kit									✓								
4	B2-5-55	3/26/18	10:21	Soil	1 Kit									✓								
5	B2-5-80	3/26/18	10:57	Soil	1 Kit	MT		3/27/18						✓								
6	B2-15-5	3/26/18	—	Soil	1 Kit									✓								
7	Trip Blk	—	—	Water	2 Vial									✓								

Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
3/26/18 - 14:51 1415			
Relinquished by: (Signature)	Received by: (Signature/Affiliation) EC	Date: 3/26/18	Time: 1810
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:

2016-04-01-Revision

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CHAIN-OF-CUSTODY RECORD

Date 3/26/2018
Page 1 of 1

WO NO. / LAB USE ONLY
18-03-2257

LABORATORY CLIENT: ERM
ADDRESS: 1920 Main Street – Suite 300
CITY: Irvine STATE: CA ZIP: 92614
TEL: 949-623-4700 E-MAIL: See Special Instructions

CLIENT PROJECT NAME / NO.: Infineon
P.O. NO.: 0444392 - 002
PROJECT CONTACT: Maggie.Tymkow
LAB CONTACT OR QUOTE NO: Virendra Patel
GLOBAL ID:
LOG CODE:
SAMPLER(S): (PRINT) Manuel Leos

TURNAROUND TIME (Rush surcharges may apply to any TAT not "STANDARD"):
☐ SAME DAY ☒ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAYS ☐ STANDARD

EDD
☐ COELT EDF ☐ OTHER

SPECIAL INSTRUCTIONS: EQuis

Email to: maggie.tymkow@erm.com
Stewart.emthof@erm.com
Brad.cross@erm.com
Tony.Parenteau@erm.com

REQUESTED ANALYSES
Please check box or fill in blank as needed.

LAB USE ONLY	SAMPLE ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.
1	B2-5-5	3/26/18	09:09	Soil	1 Kit
2	B2-5-15	3/26/18	09:45	Soil	1 Kit
3	B2-5-39	3/26/18	10:02	Soil	1 Kit
4	B2-5-55	3/26/18	10:21	Soil	1 Kit
5	B2-5-80	3/26/18		Soil	1 Kit
6	B2-15-5	3/26/18	—	Soil	1 Kit
7	Trip Blk	—	—	Water	2 vial

Unpreserved | Preserved | Field Filtered | ☐ TPH(g) ☐ GRO | ☐ TPH(d) ☐ DRO | TPH ☐ C6-C36 ☐ C6-C44 | TPH ____ | BTEX / MTBE ☐ 8260 ☐ ____ | VOCs (8260) | Oxygenates (8260) | Prep (5035) ☐ En Core ☒ Terra Core | SVOCs (8270) | Pesticides (8081) | PCBs (8082) | PAHs ☐ 8270 ☐ 8270 SIM | T22 Metals ☐ 6010/747X ☐ 6020/747X | Cr(VI) ☐ 7196 ☐ 7199 ☐ 218.6

Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
3/26/18 – 14:51 1415			
Relinquished by: (Signature)	Received by: (Signature/Affiliation) EC	Date: 3/26/18	Time: 1810
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:

2016-04-01-Revision

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WORK ORDER NUMBER: 18-03-2257

SAMPLE RECEIPT CHECKLIST

COOLER 1 OF 1

CLIENT: ERM

DATE: 03/26/2018

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)

Thermometer ID: SC6 (CF: +0.2°C); Temperature (w/o CF): 2.2 °C (w/ CF): 2.4 °C; ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____)

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling

☐ Sample(s) received at ambient temperature; placed on ice for transport by courier

Ambient Temperature: ☐ Air ☐ Filter

Checked by: 1091

CUSTODY SEAL:

Cooler	☐ Present and Intact	☐ Present but Not Intact	☑ Not Present	☐ N/A	Checked by: 1091
Sample(s)	☐ Present and Intact	☐ Present but Not Intact	☑ Not Present	☐ N/A	Checked by: DJG

SAMPLE CONDITION:

	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☐	☑	☐
☐ Sampling date ☑ Sampling time (5-6) ☐ Matrix ☐ Number of containers			
☐ No analysis requested ☐ Not relinquished ☐ No relinquished date ☐ No relinquished time			
Sampler's name indicated on COC	☑	☐	☐
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and in good condition	☑	☐	☐
Proper containers for analyses requested	☑	☐	☐
Sufficient volume/mass for analyses requested	☑	☐	☐
Samples received within holding time	☑	☐	☐
Aqueous samples for certain analyses received within 15-minute holding time			
☐ pH ☐ Residual Chlorine ☐ Dissolved Sulfide ☐ Dissolved Oxygen	☐	☐	☑
Proper preservation chemical(s) noted on COC and/or sample container	☑	☐	☐
Unpreserved aqueous sample(s) received for certain analyses			
☐ Volatile Organics ☐ Total Metals ☐ Dissolved Metals			
Acid/base preserved samples - pH within acceptable range	☐	☐	☑
Container(s) for certain analysis free of headspace	☑	☐	☐
☑ Volatile Organics ☐ Dissolved Gases (RSK-175) ☐ Dissolved Oxygen (SM 4500)			
☐ Carbon Dioxide (SM 4500) ☐ Ferrous Iron (SM 3500) ☐ Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE: (Trip Blank Lot Number: 1803164)

Aqueous: ☐ VOA ☑ VOAh ☐ VOAna_2 ☐ 100PJ ☐ 100PJna_2 ☐ 125AGB ☐ 125AGBh ☐ 125AGBp ☐ 125PB ☐ 125PBznna (pH__9)

☐ 250AGB ☐ 250CGB ☐ 250CGBs (pH__2) ☐ 250PB ☐ 250PBn (pH__2) ☐ 500AGB ☐ 500AGJ ☐ 500AGJs (pH__2) ☐ 500PB

☐ 1AGB ☐ 1AGBna_2 ☐ 1AGBs (pH__2) ☐ 1AGBs (O&G) ☐ 1PB ☐ 1PBna (pH__12) ☐ _____ ☐ _____ ☐ _____

Solid: ☐ 4ozCGJ ☐ 8ozCGJ ☐ 16ozCGJ ☐ Sleeve (___) ☐ EnCores® (___) ☑ TerraCores® (3) ☑ 2oz85 ☐ _____ ☐ _____

Air: ☐ Tedlar™ ☐ Canister ☐ Sorbent Tube ☐ PUF ☐ _____ **Other Matrix** (_____): ☐ _____ ☐ _____ ☐ _____

Container: **A** = Amber, **B** = Bottle, **C** = Clear, **E** = Envelope, **G** = Glass, **J** = Jar, **P** = Plastic, and **Z** = Ziploc/Resealable Bag

Preservative: **b** = buffered, **f** = filtered, **h** = HCl, **n** = HNO_3, **na** = NaOH, **na_2** = $Na_2S_2O_3$, **p** = H_3PO_4, **s** = H_2SO_4, **u** = ultra-pure, **x** = Na_2SO_3+$NaHSO_4.H_2O$, **znna** = Zn $(CH_3CO_2)_2$ + NaOH

Labeled/Checked by: DJG

Reviewed by: 1140

(-5) Collection time on label @ 1857, 1915 3/24/18

(-6) No " " " "

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WORK ORDER NUMBER: 18-03-2341

The difference is service

AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: ERM-WEST

Client Project Name: Infineon

Attention: Maggie Tymkow
1920 Main Street
Suite 300
Irvine, CA 92614-7279

Approved for release on 03/29/2018 by:
Virendra Patel
Project Manager

ResultLink

Email your PM

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Contents

Client Project Name: Infineon
Work Order Number: 18-03-2341

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Work Order Narrative

Work Order: 18-03-2341 Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 03/27/18. They were assigned to Work Order 18-03-2341.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

DoD Projects:

The test results contained in this report are accredited under the laboratory's ISO/IEC 17025:2005 and DoD-ELAP accreditation issued by the ANSI-ASQ National Accreditation Board. Refer to certificate and scope of accreditation ADE-1864.

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Sample Summary

Client:	ERM-WEST	Work Order:	18-03-2341
	1920 Main Street, Suite 300	Project Name:	Infineon
	Irvine, CA 92614-7279	PO Number:	
		Date/Time Received:	03/27/18 17:00
		Number of Containers:	26
Attn:	Maggie Tymkow		

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
B2-8-5	18-03-2341-1	03/27/18 08:43	4	Solid
B2-8-17	18-03-2341-2	03/27/18 09:15	4	Solid
B2-8-28	18-03-2341-3	03/27/18 09:27	4	Solid
B2-8-55	18-03-2341-4	03/27/18 09:51	4	Solid
B2-8-80	18-03-2341-5	03/27/18 10:36	4	Solid
B2-18-80	18-03-2341-6	03/27/18 00:00	4	Solid
Trip Blk	18-03-2341-7	03/27/18 00:00	2	Aqueous

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Detections Summary

Client:	ERM-WEST	Work Order:	18-03-2341
	1920 Main Street, Suite 300	Project Name:	Infineon
	Irvine, CA 92614-7279	Received:	03/27/18
Attn:	Maggie Tymkow		

Client SampleID

Analyte	Result	Qualifiers	RL	Units	Method	Extraction
B2-8-5 (18-03-2341-1)						
Tetrachloroethene	1.1		0.88	ug/kg	EPA 8260B	EPA 5035

Subcontracted analyses, if any, are not included in this summary.

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* MDL is shown

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/27/18
Work Order: 18-03-2341
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

Project: Infineon

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Trip Blk	**18-03-2341-7-A**	**03/27/18 00:00**	**Aqueous**	**GC/MS V V**	**03/27/18**	**03/27/18 22:18**	**180327L025**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	20	1.00	
Benzene	ND	0.50	1.00	
Bromobenzene	ND	1.0	1.00	
Bromochloromethane	ND	1.0	1.00	
Bromodichloromethane	ND	1.0	1.00	
Bromoform	ND	1.0	1.00	
Bromomethane	ND	10	1.00	
2-Butanone	ND	10	1.00	
n-Butylbenzene	ND	1.0	1.00	
sec-Butylbenzene	ND	1.0	1.00	
tert-Butylbenzene	ND	1.0	1.00	
Carbon Disulfide	ND	10	1.00	
Carbon Tetrachloride	ND	0.50	1.00	
Chlorobenzene	ND	1.0	1.00	
Chloroethane	ND	5.0	1.00	
Chloroform	ND	1.0	1.00	
Chloromethane	ND	10	1.00	
2-Chlorotoluene	ND	1.0	1.00	
4-Chlorotoluene	ND	1.0	1.00	
Dibromochloromethane	ND	1.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.0	1.00	
1,2-Dibromoethane	ND	1.0	1.00	
Dibromomethane	ND	1.0	1.00	
1,2-Dichlorobenzene	ND	1.0	1.00	
1,3-Dichlorobenzene	ND	1.0	1.00	
1,4-Dichlorobenzene	ND	1.0	1.00	
Dichlorodifluoromethane	ND	1.0	1.00	
1,1-Dichloroethane	ND	1.0	1.00	
1,2-Dichloroethane	ND	0.50	1.00	
1,1-Dichloroethene	ND	1.0	1.00	
c-1,2-Dichloroethene	ND	1.0	1.00	
t-1,2-Dichloroethene	ND	1.0	1.00	
1,2-Dichloropropane	ND	1.0	1.00	
1,3-Dichloropropane	ND	1.0	1.00	
2,2-Dichloropropane	ND	1.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/27/18
1920 Main Street, Suite 300	Work Order:	18-03-2341
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/L
Project: Infineon		Page 2 of 6

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	1.0	1.00	
c-1,3-Dichloropropene	ND	0.50	1.00	
t-1,3-Dichloropropene	ND	0.50	1.00	
Ethylbenzene	ND	1.0	1.00	
2-Hexanone	ND	10	1.00	
Isopropylbenzene	ND	1.0	1.00	
p-Isopropyltoluene	ND	1.0	1.00	
Methylene Chloride	ND	10	1.00	
4-Methyl-2-Pentanone	ND	10	1.00	
Naphthalene	ND	10	1.00	
n-Propylbenzene	ND	1.0	1.00	
Styrene	ND	1.0	1.00	
1,1,1,2-Tetrachloroethane	ND	1.0	1.00	
1,1,2,2-Tetrachloroethane	ND	1.0	1.00	
Tetrachloroethene	ND	1.0	1.00	
Toluene	ND	1.0	1.00	
1,2,3-Trichlorobenzene	ND	1.0	1.00	
1,2,4-Trichlorobenzene	ND	1.0	1.00	
1,1,1-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.00	
1,1,2-Trichloroethane	ND	1.0	1.00	
Trichloroethene	ND	1.0	1.00	
Trichlorofluoromethane	ND	10	1.00	
1,2,3-Trichloropropane	ND	5.0	1.00	
1,2,4-Trimethylbenzene	ND	1.0	1.00	
1,3,5-Trimethylbenzene	ND	1.0	1.00	
Vinyl Acetate	ND	10	1.00	
Vinyl Chloride	ND	0.50	1.00	
p/m-Xylene	ND	1.0	1.00	
o-Xylene	ND	1.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	1.0	1.00	
Tert-Butyl Alcohol (TBA)	ND	10	1.00	
Diisopropyl Ether (DIPE)	ND	2.0	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	2.0	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	2.0	1.00	
Ethanol	ND	100	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	90	77-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/27/18
1920 Main Street, Suite 300		Work Order:	18-03-2341
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/L
Project: Infineon			Page 3 of 6

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	106	80-128	
1,2-Dichloroethane-d4	105	80-129	
Toluene-d8	96	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/27/18
Work Order: 18-03-2341
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

Project: Infineon

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-14-001-25511**	**N/A**	**Aqueous**	**GC/MS V V**	**03/27/18**	**03/27/18 16:17**	**180327L025**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	20	1.00	
Benzene	ND	0.50	1.00	
Bromobenzene	ND	1.0	1.00	
Bromochloromethane	ND	1.0	1.00	
Bromodichloromethane	ND	1.0	1.00	
Bromoform	ND	1.0	1.00	
Bromomethane	ND	10	1.00	
2-Butanone	ND	10	1.00	
n-Butylbenzene	ND	1.0	1.00	
sec-Butylbenzene	ND	1.0	1.00	
tert-Butylbenzene	ND	1.0	1.00	
Carbon Disulfide	ND	10	1.00	
Carbon Tetrachloride	ND	0.50	1.00	
Chlorobenzene	ND	1.0	1.00	
Chloroethane	ND	5.0	1.00	
Chloroform	ND	1.0	1.00	
Chloromethane	ND	10	1.00	
2-Chlorotoluene	ND	1.0	1.00	
4-Chlorotoluene	ND	1.0	1.00	
Dibromochloromethane	ND	1.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.0	1.00	
1,2-Dibromoethane	ND	1.0	1.00	
Dibromomethane	ND	1.0	1.00	
1,2-Dichlorobenzene	ND	1.0	1.00	
1,3-Dichlorobenzene	ND	1.0	1.00	
1,4-Dichlorobenzene	ND	1.0	1.00	
Dichlorodifluoromethane	ND	1.0	1.00	
1,1-Dichloroethane	ND	1.0	1.00	
1,2-Dichloroethane	ND	0.50	1.00	
1,1-Dichloroethene	ND	1.0	1.00	
c-1,2-Dichloroethene	ND	1.0	1.00	
t-1,2-Dichloroethene	ND	1.0	1.00	
1,2-Dichloropropane	ND	1.0	1.00	
1,3-Dichloropropane	ND	1.0	1.00	
2,2-Dichloropropane	ND	1.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/27/18
1920 Main Street, Suite 300	Work Order:	18-03-2341
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/L
Project: Infineon		Page 5 of 6

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	1.0	1.00	
c-1,3-Dichloropropene	ND	0.50	1.00	
t-1,3-Dichloropropene	ND	0.50	1.00	
Ethylbenzene	ND	1.0	1.00	
2-Hexanone	ND	10	1.00	
Isopropylbenzene	ND	1.0	1.00	
p-Isopropyltoluene	ND	1.0	1.00	
Methylene Chloride	ND	10	1.00	
4-Methyl-2-Pentanone	ND	10	1.00	
Naphthalene	ND	10	1.00	
n-Propylbenzene	ND	1.0	1.00	
Styrene	ND	1.0	1.00	
1,1,1,2-Tetrachloroethane	ND	1.0	1.00	
1,1,2,2-Tetrachloroethane	ND	1.0	1.00	
Tetrachloroethene	ND	1.0	1.00	
Toluene	ND	1.0	1.00	
1,2,3-Trichlorobenzene	ND	1.0	1.00	
1,2,4-Trichlorobenzene	ND	1.0	1.00	
1,1,1-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.00	
1,1,2-Trichloroethane	ND	1.0	1.00	
Trichloroethene	ND	1.0	1.00	
Trichlorofluoromethane	ND	10	1.00	
1,2,3-Trichloropropane	ND	5.0	1.00	
1,2,4-Trimethylbenzene	ND	1.0	1.00	
1,3,5-Trimethylbenzene	ND	1.0	1.00	
Vinyl Acetate	ND	10	1.00	
Vinyl Chloride	ND	0.50	1.00	
p/m-Xylene	ND	1.0	1.00	
o-Xylene	ND	1.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	1.0	1.00	
Tert-Butyl Alcohol (TBA)	ND	10	1.00	
Diisopropyl Ether (DIPE)	ND	2.0	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	2.0	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	2.0	1.00	
Ethanol	ND	100	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	90	77-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/27/18
1920 Main Street, Suite 300	Work Order:	18-03-2341
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/L
Project: Infineon		Page 6 of 6

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	103	80-128	
1,2-Dichloroethane-d4	102	80-129	
Toluene-d8	97	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon

Date Received: 03/27/18
Work Order: 18-03-2341
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B2-8-5	**18-03-2341-1-C**	**03/27/18 08:43**	**Solid**	**GC/MS OO**	**03/27/18**	**03/27/18 19:03**	**180327L035**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	44	1.00	
Benzene	ND	0.88	1.00	
Bromobenzene	ND	0.88	1.00	
Bromochloromethane	ND	1.8	1.00	
Bromodichloromethane	ND	0.88	1.00	
Bromoform	ND	4.4	1.00	
Bromomethane	ND	18	1.00	
2-Butanone	ND	18	1.00	
n-Butylbenzene	ND	0.88	1.00	
sec-Butylbenzene	ND	0.88	1.00	
tert-Butylbenzene	ND	0.88	1.00	
Carbon Disulfide	ND	8.8	1.00	
Carbon Tetrachloride	ND	0.88	1.00	
Chlorobenzene	ND	0.88	1.00	
Chloroethane	ND	1.8	1.00	
Chloroform	ND	0.88	1.00	
Chloromethane	ND	18	1.00	
2-Chlorotoluene	ND	0.88	1.00	
4-Chlorotoluene	ND	0.88	1.00	
Dibromochloromethane	ND	1.8	1.00	
1,2-Dibromo-3-Chloropropane	ND	4.4	1.00	
1,2-Dibromoethane	ND	0.88	1.00	
Dibromomethane	ND	0.88	1.00	
1,2-Dichlorobenzene	ND	0.88	1.00	
1,3-Dichlorobenzene	ND	0.88	1.00	
1,4-Dichlorobenzene	ND	0.88	1.00	
Dichlorodifluoromethane	ND	1.8	1.00	
1,1-Dichloroethane	ND	0.88	1.00	
1,2-Dichloroethane	ND	0.88	1.00	
1,1-Dichloroethene	ND	0.88	1.00	
c-1,2-Dichloroethene	ND	0.88	1.00	
t-1,2-Dichloroethene	ND	0.88	1.00	
1,2-Dichloropropane	ND	0.88	1.00	
1,3-Dichloropropane	ND	0.88	1.00	
2,2-Dichloropropane	ND	4.4	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/27/18
1920 Main Street, Suite 300		Work Order:	18-03-2341
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon			Page 2 of 21

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	1.8	1.00	
c-1,3-Dichloropropene	ND	0.88	1.00	
t-1,3-Dichloropropene	ND	1.8	1.00	
Ethylbenzene	ND	0.88	1.00	
2-Hexanone	ND	18	1.00	
Isopropylbenzene	ND	0.88	1.00	
p-Isopropyltoluene	ND	0.88	1.00	
Methylene Chloride	ND	8.8	1.00	
4-Methyl-2-Pentanone	ND	18	1.00	
Naphthalene	ND	8.8	1.00	
n-Propylbenzene	ND	1.8	1.00	
Styrene	ND	0.88	1.00	
1,1,1,2-Tetrachloroethane	ND	0.88	1.00	
1,1,2,2-Tetrachloroethane	ND	1.8	1.00	
Tetrachloroethene	1.1	0.88	1.00	
Toluene	ND	0.88	1.00	
1,2,3-Trichlorobenzene	ND	1.8	1.00	
1,2,4-Trichlorobenzene	ND	1.8	1.00	
1,1,1-Trichloroethane	ND	0.88	1.00	
1,1,2-Trichloroethane	ND	0.88	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	8.8	1.00	
Trichloroethene	ND	1.8	1.00	
Trichlorofluoromethane	ND	8.8	1.00	
1,2,3-Trichloropropane	ND	1.8	1.00	
1,2,4-Trimethylbenzene	ND	1.8	1.00	
1,3,5-Trimethylbenzene	ND	1.8	1.00	
Vinyl Acetate	ND	8.8	1.00	
Vinyl Chloride	ND	0.88	1.00	
p/m-Xylene	ND	1.8	1.00	
o-Xylene	ND	0.88	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	1.8	1.00	
Tert-Butyl Alcohol (TBA)	ND	18	1.00	
Diisopropyl Ether (DIPE)	ND	0.88	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.88	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.88	1.00	
Ethanol	ND	440	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	100	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/27/18
1920 Main Street, Suite 300		Work Order:	18-03-2341
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon			Page 3 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	103	79-133	
1,2-Dichloroethane-d4	112	71-155	
Toluene-d8	100	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon

Date Received: 03/27/18
Work Order: 18-03-2341
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B2-8-17	**18-03-2341-2-C**	**03/27/18 09:15**	**Solid**	**GC/MS OO**	**03/27/18**	**03/27/18 19:32**	**180327L035**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	53	1.00	
Benzene	ND	1.1	1.00	
Bromobenzene	ND	1.1	1.00	
Bromochloromethane	ND	2.1	1.00	
Bromodichloromethane	ND	1.1	1.00	
Bromoform	ND	5.3	1.00	
Bromomethane	ND	21	1.00	
2-Butanone	ND	21	1.00	
n-Butylbenzene	ND	1.1	1.00	
sec-Butylbenzene	ND	1.1	1.00	
tert-Butylbenzene	ND	1.1	1.00	
Carbon Disulfide	ND	11	1.00	
Carbon Tetrachloride	ND	1.1	1.00	
Chlorobenzene	ND	1.1	1.00	
Chloroethane	ND	2.1	1.00	
Chloroform	ND	1.1	1.00	
Chloromethane	ND	21	1.00	
2-Chlorotoluene	ND	1.1	1.00	
4-Chlorotoluene	ND	1.1	1.00	
Dibromochloromethane	ND	2.1	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.3	1.00	
1,2-Dibromoethane	ND	1.1	1.00	
Dibromomethane	ND	1.1	1.00	
1,2-Dichlorobenzene	ND	1.1	1.00	
1,3-Dichlorobenzene	ND	1.1	1.00	
1,4-Dichlorobenzene	ND	1.1	1.00	
Dichlorodifluoromethane	ND	2.1	1.00	
1,1-Dichloroethane	ND	1.1	1.00	
1,2-Dichloroethane	ND	1.1	1.00	
1,1-Dichloroethene	ND	1.1	1.00	
c-1,2-Dichloroethene	ND	1.1	1.00	
t-1,2-Dichloroethene	ND	1.1	1.00	
1,2-Dichloropropane	ND	1.1	1.00	
1,3-Dichloropropane	ND	1.1	1.00	
2,2-Dichloropropane	ND	5.3	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/27/18
1920 Main Street, Suite 300		Work Order:	18-03-2341
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon			Page 5 of 21

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.1	1.00	
c-1,3-Dichloropropene	ND	1.1	1.00	
t-1,3-Dichloropropene	ND	2.1	1.00	
Ethylbenzene	ND	1.1	1.00	
2-Hexanone	ND	21	1.00	
Isopropylbenzene	ND	1.1	1.00	
p-Isopropyltoluene	ND	1.1	1.00	
Methylene Chloride	ND	11	1.00	
4-Methyl-2-Pentanone	ND	21	1.00	
Naphthalene	ND	11	1.00	
n-Propylbenzene	ND	2.1	1.00	
Styrene	ND	1.1	1.00	
1,1,1,2-Tetrachloroethane	ND	1.1	1.00	
1,1,2,2-Tetrachloroethane	ND	2.1	1.00	
Tetrachloroethene	ND	1.1	1.00	
Toluene	ND	1.1	1.00	
1,2,3-Trichlorobenzene	ND	2.1	1.00	
1,2,4-Trichlorobenzene	ND	2.1	1.00	
1,1,1-Trichloroethane	ND	1.1	1.00	
1,1,2-Trichloroethane	ND	1.1	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	11	1.00	
Trichloroethene	ND	2.1	1.00	
Trichlorofluoromethane	ND	11	1.00	
1,2,3-Trichloropropane	ND	2.1	1.00	
1,2,4-Trimethylbenzene	ND	2.1	1.00	
1,3,5-Trimethylbenzene	ND	2.1	1.00	
Vinyl Acetate	ND	11	1.00	
Vinyl Chloride	ND	1.1	1.00	
p/m-Xylene	ND	2.1	1.00	
o-Xylene	ND	1.1	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.1	1.00	
Tert-Butyl Alcohol (TBA)	ND	21	1.00	
Diisopropyl Ether (DIPE)	ND	1.1	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.1	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.1	1.00	
Ethanol	ND	530	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	100	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/27/18
1920 Main Street, Suite 300		Work Order:	18-03-2341
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon			Page 6 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	103	79-133	
1,2-Dichloroethane-d4	112	71-155	
Toluene-d8	100	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon

Date Received: 03/27/18
Work Order: 18-03-2341
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B2-8-28	**18-03-2341-3-C**	**03/27/18 09:27**	**Solid**	**GC/MS OO**	**03/27/18**	**03/27/18 20:01**	**180327L035**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	52	1.00	
Benzene	ND	1.0	1.00	
Bromobenzene	ND	1.0	1.00	
Bromochloromethane	ND	2.1	1.00	
Bromodichloromethane	ND	1.0	1.00	
Bromoform	ND	5.2	1.00	
Bromomethane	ND	21	1.00	
2-Butanone	ND	21	1.00	
n-Butylbenzene	ND	1.0	1.00	
sec-Butylbenzene	ND	1.0	1.00	
tert-Butylbenzene	ND	1.0	1.00	
Carbon Disulfide	ND	10	1.00	
Carbon Tetrachloride	ND	1.0	1.00	
Chlorobenzene	ND	1.0	1.00	
Chloroethane	ND	2.1	1.00	
Chloroform	ND	1.0	1.00	
Chloromethane	ND	21	1.00	
2-Chlorotoluene	ND	1.0	1.00	
4-Chlorotoluene	ND	1.0	1.00	
Dibromochloromethane	ND	2.1	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.2	1.00	
1,2-Dibromoethane	ND	1.0	1.00	
Dibromomethane	ND	1.0	1.00	
1,2-Dichlorobenzene	ND	1.0	1.00	
1,3-Dichlorobenzene	ND	1.0	1.00	
1,4-Dichlorobenzene	ND	1.0	1.00	
Dichlorodifluoromethane	ND	2.1	1.00	
1,1-Dichloroethane	ND	1.0	1.00	
1,2-Dichloroethane	ND	1.0	1.00	
1,1-Dichloroethene	ND	1.0	1.00	
c-1,2-Dichloroethene	ND	1.0	1.00	
t-1,2-Dichloroethene	ND	1.0	1.00	
1,2-Dichloropropane	ND	1.0	1.00	
1,3-Dichloropropane	ND	1.0	1.00	
2,2-Dichloropropane	ND	5.2	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/27/18
1920 Main Street, Suite 300		Work Order:	18-03-2341
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon			Page 8 of 21

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.1	1.00	
c-1,3-Dichloropropene	ND	1.0	1.00	
t-1,3-Dichloropropene	ND	2.1	1.00	
Ethylbenzene	ND	1.0	1.00	
2-Hexanone	ND	21	1.00	
Isopropylbenzene	ND	1.0	1.00	
p-Isopropyltoluene	ND	1.0	1.00	
Methylene Chloride	ND	10	1.00	
4-Methyl-2-Pentanone	ND	21	1.00	
Naphthalene	ND	10	1.00	
n-Propylbenzene	ND	2.1	1.00	
Styrene	ND	1.0	1.00	
1,1,1,2-Tetrachloroethane	ND	1.0	1.00	
1,1,2,2-Tetrachloroethane	ND	2.1	1.00	
Tetrachloroethene	ND	1.0	1.00	
Toluene	ND	1.0	1.00	
1,2,3-Trichlorobenzene	ND	2.1	1.00	
1,2,4-Trichlorobenzene	ND	2.1	1.00	
1,1,1-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.00	
Trichloroethene	ND	2.1	1.00	
Trichlorofluoromethane	ND	10	1.00	
1,2,3-Trichloropropane	ND	2.1	1.00	
1,2,4-Trimethylbenzene	ND	2.1	1.00	
1,3,5-Trimethylbenzene	ND	2.1	1.00	
Vinyl Acetate	ND	10	1.00	
Vinyl Chloride	ND	1.0	1.00	
p/m-Xylene	ND	2.1	1.00	
o-Xylene	ND	1.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.1	1.00	
Tert-Butyl Alcohol (TBA)	ND	21	1.00	
Diisopropyl Ether (DIPE)	ND	1.0	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.0	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.0	1.00	
Ethanol	ND	520	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	99	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/27/18
1920 Main Street, Suite 300	Work Order:	18-03-2341
Irvine, CA 92614-7279	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: Infineon		Page 9 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	102	79-133	
1,2-Dichloroethane-d4	113	71-155	
Toluene-d8	100	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon

Date Received: 03/27/18
Work Order: 18-03-2341
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B2-8-55	**18-03-2341-4-C**	**03/27/18 09:51**	**Solid**	**GC/MS OO**	**03/27/18**	**03/27/18 20:30**	**180327L035**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	55	1.00	
Benzene	ND	1.1	1.00	
Bromobenzene	ND	1.1	1.00	
Bromochloromethane	ND	2.2	1.00	
Bromodichloromethane	ND	1.1	1.00	
Bromoform	ND	5.5	1.00	
Bromomethane	ND	22	1.00	
2-Butanone	ND	22	1.00	
n-Butylbenzene	ND	1.1	1.00	
sec-Butylbenzene	ND	1.1	1.00	
tert-Butylbenzene	ND	1.1	1.00	
Carbon Disulfide	ND	11	1.00	
Carbon Tetrachloride	ND	1.1	1.00	
Chlorobenzene	ND	1.1	1.00	
Chloroethane	ND	2.2	1.00	
Chloroform	ND	1.1	1.00	
Chloromethane	ND	22	1.00	
2-Chlorotoluene	ND	1.1	1.00	
4-Chlorotoluene	ND	1.1	1.00	
Dibromochloromethane	ND	2.2	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.5	1.00	
1,2-Dibromoethane	ND	1.1	1.00	
Dibromomethane	ND	1.1	1.00	
1,2-Dichlorobenzene	ND	1.1	1.00	
1,3-Dichlorobenzene	ND	1.1	1.00	
1,4-Dichlorobenzene	ND	1.1	1.00	
Dichlorodifluoromethane	ND	2.2	1.00	
1,1-Dichloroethane	ND	1.1	1.00	
1,2-Dichloroethane	ND	1.1	1.00	
1,1-Dichloroethene	ND	1.1	1.00	
c-1,2-Dichloroethene	ND	1.1	1.00	
t-1,2-Dichloroethene	ND	1.1	1.00	
1,2-Dichloropropane	ND	1.1	1.00	
1,3-Dichloropropane	ND	1.1	1.00	
2,2-Dichloropropane	ND	5.5	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/27/18
1920 Main Street, Suite 300		Work Order:	18-03-2341
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon			Page 11 of 21

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.2	1.00	
c-1,3-Dichloropropene	ND	1.1	1.00	
t-1,3-Dichloropropene	ND	2.2	1.00	
Ethylbenzene	ND	1.1	1.00	
2-Hexanone	ND	22	1.00	
Isopropylbenzene	ND	1.1	1.00	
p-Isopropyltoluene	ND	1.1	1.00	
Methylene Chloride	ND	11	1.00	
4-Methyl-2-Pentanone	ND	22	1.00	
Naphthalene	ND	11	1.00	
n-Propylbenzene	ND	2.2	1.00	
Styrene	ND	1.1	1.00	
1,1,1,2-Tetrachloroethane	ND	1.1	1.00	
1,1,2,2-Tetrachloroethane	ND	2.2	1.00	
Tetrachloroethene	ND	1.1	1.00	
Toluene	ND	1.1	1.00	
1,2,3-Trichlorobenzene	ND	2.2	1.00	
1,2,4-Trichlorobenzene	ND	2.2	1.00	
1,1,1-Trichloroethane	ND	1.1	1.00	
1,1,2-Trichloroethane	ND	1.1	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	11	1.00	
Trichloroethene	ND	2.2	1.00	
Trichlorofluoromethane	ND	11	1.00	
1,2,3-Trichloropropane	ND	2.2	1.00	
1,2,4-Trimethylbenzene	ND	2.2	1.00	
1,3,5-Trimethylbenzene	ND	2.2	1.00	
Vinyl Acetate	ND	11	1.00	
Vinyl Chloride	ND	1.1	1.00	
p/m-Xylene	ND	2.2	1.00	
o-Xylene	ND	1.1	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.2	1.00	
Tert-Butyl Alcohol (TBA)	ND	22	1.00	
Diisopropyl Ether (DIPE)	ND	1.1	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.1	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.1	1.00	
Ethanol	ND	550	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	100	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/27/18
1920 Main Street, Suite 300	Work Order:	18-03-2341
Irvine, CA 92614-7279	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: Infineon		Page 12 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	102	79-133	
1,2-Dichloroethane-d4	112	71-155	
Toluene-d8	100	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon

Date Received: 03/27/18
Work Order: 18-03-2341
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B2-8-80	**18-03-2341-5-C**	**03/27/18 10:36**	**Solid**	**GC/MS OO**	**03/27/18**	**03/27/18 20:58**	**180327L035**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	57	1.00	
Benzene	ND	1.1	1.00	
Bromobenzene	ND	1.1	1.00	
Bromochloromethane	ND	2.3	1.00	
Bromodichloromethane	ND	1.1	1.00	
Bromoform	ND	5.7	1.00	
Bromomethane	ND	23	1.00	
2-Butanone	ND	23	1.00	
n-Butylbenzene	ND	1.1	1.00	
sec-Butylbenzene	ND	1.1	1.00	
tert-Butylbenzene	ND	1.1	1.00	
Carbon Disulfide	ND	11	1.00	
Carbon Tetrachloride	ND	1.1	1.00	
Chlorobenzene	ND	1.1	1.00	
Chloroethane	ND	2.3	1.00	
Chloroform	ND	1.1	1.00	
Chloromethane	ND	23	1.00	
2-Chlorotoluene	ND	1.1	1.00	
4-Chlorotoluene	ND	1.1	1.00	
Dibromochloromethane	ND	2.3	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.7	1.00	
1,2-Dibromoethane	ND	1.1	1.00	
Dibromomethane	ND	1.1	1.00	
1,2-Dichlorobenzene	ND	1.1	1.00	
1,3-Dichlorobenzene	ND	1.1	1.00	
1,4-Dichlorobenzene	ND	1.1	1.00	
Dichlorodifluoromethane	ND	2.3	1.00	
1,1-Dichloroethane	ND	1.1	1.00	
1,2-Dichloroethane	ND	1.1	1.00	
1,1-Dichloroethene	ND	1.1	1.00	
c-1,2-Dichloroethene	ND	1.1	1.00	
t-1,2-Dichloroethene	ND	1.1	1.00	
1,2-Dichloropropane	ND	1.1	1.00	
1,3-Dichloropropane	ND	1.1	1.00	
2,2-Dichloropropane	ND	5.7	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/27/18
1920 Main Street, Suite 300		Work Order:	18-03-2341
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon			Page 14 of 21

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.3	1.00	
c-1,3-Dichloropropene	ND	1.1	1.00	
t-1,3-Dichloropropene	ND	2.3	1.00	
Ethylbenzene	ND	1.1	1.00	
2-Hexanone	ND	23	1.00	
Isopropylbenzene	ND	1.1	1.00	
p-Isopropyltoluene	ND	1.1	1.00	
Methylene Chloride	ND	11	1.00	
4-Methyl-2-Pentanone	ND	23	1.00	
Naphthalene	ND	11	1.00	
n-Propylbenzene	ND	2.3	1.00	
Styrene	ND	1.1	1.00	
1,1,1,2-Tetrachloroethane	ND	1.1	1.00	
1,1,2,2-Tetrachloroethane	ND	2.3	1.00	
Tetrachloroethene	ND	1.1	1.00	
Toluene	ND	1.1	1.00	
1,2,3-Trichlorobenzene	ND	2.3	1.00	
1,2,4-Trichlorobenzene	ND	2.3	1.00	
1,1,1-Trichloroethane	ND	1.1	1.00	
1,1,2-Trichloroethane	ND	1.1	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	11	1.00	
Trichloroethene	ND	2.3	1.00	
Trichlorofluoromethane	ND	11	1.00	
1,2,3-Trichloropropane	ND	2.3	1.00	
1,2,4-Trimethylbenzene	ND	2.3	1.00	
1,3,5-Trimethylbenzene	ND	2.3	1.00	
Vinyl Acetate	ND	11	1.00	
Vinyl Chloride	ND	1.1	1.00	
p/m-Xylene	ND	2.3	1.00	
o-Xylene	ND	1.1	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.3	1.00	
Tert-Butyl Alcohol (TBA)	ND	23	1.00	
Diisopropyl Ether (DIPE)	ND	1.1	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.1	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.1	1.00	
Ethanol	ND	570	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	99	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/27/18
1920 Main Street, Suite 300		Work Order:	18-03-2341
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon			Page 15 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	100	79-133	
1,2-Dichloroethane-d4	110	71-155	
Toluene-d8	100	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon

Date Received: 03/27/18
Work Order: 18-03-2341
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B2-18-80	**18-03-2341-6-C**	**03/27/18 00:00**	**Solid**	**GC/MS OO**	**03/27/18**	**03/27/18 21:27**	**180327L035**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	55	1.00	
Benzene	ND	1.1	1.00	
Bromobenzene	ND	1.1	1.00	
Bromochloromethane	ND	2.2	1.00	
Bromodichloromethane	ND	1.1	1.00	
Bromoform	ND	5.5	1.00	
Bromomethane	ND	22	1.00	
2-Butanone	ND	22	1.00	
n-Butylbenzene	ND	1.1	1.00	
sec-Butylbenzene	ND	1.1	1.00	
tert-Butylbenzene	ND	1.1	1.00	
Carbon Disulfide	ND	11	1.00	
Carbon Tetrachloride	ND	1.1	1.00	
Chlorobenzene	ND	1.1	1.00	
Chloroethane	ND	2.2	1.00	
Chloroform	ND	1.1	1.00	
Chloromethane	ND	22	1.00	
2-Chlorotoluene	ND	1.1	1.00	
4-Chlorotoluene	ND	1.1	1.00	
Dibromochloromethane	ND	2.2	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.5	1.00	
1,2-Dibromoethane	ND	1.1	1.00	
Dibromomethane	ND	1.1	1.00	
1,2-Dichlorobenzene	ND	1.1	1.00	
1,3-Dichlorobenzene	ND	1.1	1.00	
1,4-Dichlorobenzene	ND	1.1	1.00	
Dichlorodifluoromethane	ND	2.2	1.00	
1,1-Dichloroethane	ND	1.1	1.00	
1,2-Dichloroethane	ND	1.1	1.00	
1,1-Dichloroethene	ND	1.1	1.00	
c-1,2-Dichloroethene	ND	1.1	1.00	
t-1,2-Dichloroethene	ND	1.1	1.00	
1,2-Dichloropropane	ND	1.1	1.00	
1,3-Dichloropropane	ND	1.1	1.00	
2,2-Dichloropropane	ND	5.5	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/27/18
1920 Main Street, Suite 300		Work Order:	18-03-2341
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon			Page 17 of 21

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.2	1.00	
c-1,3-Dichloropropene	ND	1.1	1.00	
t-1,3-Dichloropropene	ND	2.2	1.00	
Ethylbenzene	ND	1.1	1.00	
2-Hexanone	ND	22	1.00	
Isopropylbenzene	ND	1.1	1.00	
p-Isopropyltoluene	ND	1.1	1.00	
Methylene Chloride	ND	11	1.00	
4-Methyl-2-Pentanone	ND	22	1.00	
Naphthalene	ND	11	1.00	
n-Propylbenzene	ND	2.2	1.00	
Styrene	ND	1.1	1.00	
1,1,1,2-Tetrachloroethane	ND	1.1	1.00	
1,1,2,2-Tetrachloroethane	ND	2.2	1.00	
Tetrachloroethene	ND	1.1	1.00	
Toluene	ND	1.1	1.00	
1,2,3-Trichlorobenzene	ND	2.2	1.00	
1,2,4-Trichlorobenzene	ND	2.2	1.00	
1,1,1-Trichloroethane	ND	1.1	1.00	
1,1,2-Trichloroethane	ND	1.1	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	11	1.00	
Trichloroethene	ND	2.2	1.00	
Trichlorofluoromethane	ND	11	1.00	
1,2,3-Trichloropropane	ND	2.2	1.00	
1,2,4-Trimethylbenzene	ND	2.2	1.00	
1,3,5-Trimethylbenzene	ND	2.2	1.00	
Vinyl Acetate	ND	11	1.00	
Vinyl Chloride	ND	1.1	1.00	
p/m-Xylene	ND	2.2	1.00	
o-Xylene	ND	1.1	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.2	1.00	
Tert-Butyl Alcohol (TBA)	ND	22	1.00	
Diisopropyl Ether (DIPE)	ND	1.1	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.1	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.1	1.00	
Ethanol	ND	550	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	99	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/27/18
1920 Main Street, Suite 300		Work Order:	18-03-2341
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon			Page 18 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	101	79-133	
1,2-Dichloroethane-d4	112	71-155	
Toluene-d8	101	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon

Date Received: 03/27/18
Work Order: 18-03-2341
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**095-01-025-29809**	**N/A**	**Solid**	**GC/MS OO**	**03/27/18**	**03/27/18 17:13**	**180327L035**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	50	1.00	
Benzene	ND	1.0	1.00	
Bromobenzene	ND	1.0	1.00	
Bromochloromethane	ND	2.0	1.00	
Bromodichloromethane	ND	1.0	1.00	
Bromoform	ND	5.0	1.00	
Bromomethane	ND	20	1.00	
2-Butanone	ND	20	1.00	
n-Butylbenzene	ND	1.0	1.00	
sec-Butylbenzene	ND	1.0	1.00	
tert-Butylbenzene	ND	1.0	1.00	
Carbon Disulfide	ND	10	1.00	
Carbon Tetrachloride	ND	1.0	1.00	
Chlorobenzene	ND	1.0	1.00	
Chloroethane	ND	2.0	1.00	
Chloroform	ND	1.0	1.00	
Chloromethane	ND	20	1.00	
2-Chlorotoluene	ND	1.0	1.00	
4-Chlorotoluene	ND	1.0	1.00	
Dibromochloromethane	ND	2.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.0	1.00	
1,2-Dibromoethane	ND	1.0	1.00	
Dibromomethane	ND	1.0	1.00	
1,2-Dichlorobenzene	ND	1.0	1.00	
1,3-Dichlorobenzene	ND	1.0	1.00	
1,4-Dichlorobenzene	ND	1.0	1.00	
Dichlorodifluoromethane	ND	2.0	1.00	
1,1-Dichloroethane	ND	1.0	1.00	
1,2-Dichloroethane	ND	1.0	1.00	
1,1-Dichloroethene	ND	1.0	1.00	
c-1,2-Dichloroethene	ND	1.0	1.00	
t-1,2-Dichloroethene	ND	1.0	1.00	
1,2-Dichloropropane	ND	1.0	1.00	
1,3-Dichloropropane	ND	1.0	1.00	
2,2-Dichloropropane	ND	5.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/27/18
1920 Main Street, Suite 300		Work Order:	18-03-2341
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon			Page 20 of 21

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.0	1.00	
c-1,3-Dichloropropene	ND	1.0	1.00	
t-1,3-Dichloropropene	ND	2.0	1.00	
Ethylbenzene	ND	1.0	1.00	
2-Hexanone	ND	20	1.00	
Isopropylbenzene	ND	1.0	1.00	
p-Isopropyltoluene	ND	1.0	1.00	
Methylene Chloride	ND	10	1.00	
4-Methyl-2-Pentanone	ND	20	1.00	
Naphthalene	ND	10	1.00	
n-Propylbenzene	ND	2.0	1.00	
Styrene	ND	1.0	1.00	
1,1,1,2-Tetrachloroethane	ND	1.0	1.00	
1,1,2,2-Tetrachloroethane	ND	2.0	1.00	
Tetrachloroethene	ND	1.0	1.00	
Toluene	ND	1.0	1.00	
1,2,3-Trichlorobenzene	ND	2.0	1.00	
1,2,4-Trichlorobenzene	ND	2.0	1.00	
1,1,1-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.00	
Trichloroethene	ND	2.0	1.00	
Trichlorofluoromethane	ND	10	1.00	
1,2,3-Trichloropropane	ND	2.0	1.00	
1,2,4-Trimethylbenzene	ND	2.0	1.00	
1,3,5-Trimethylbenzene	ND	2.0	1.00	
Vinyl Acetate	ND	10	1.00	
Vinyl Chloride	ND	1.0	1.00	
p/m-Xylene	ND	2.0	1.00	
o-Xylene	ND	1.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.0	1.00	
Tert-Butyl Alcohol (TBA)	ND	20	1.00	
Diisopropyl Ether (DIPE)	ND	1.0	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.0	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.0	1.00	
Ethanol	ND	500	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	99	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/27/18
1920 Main Street, Suite 300		Work Order:	18-03-2341
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon			Page 21 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	100	79-133	
1,2-Dichloroethane-d4	103	71-155	
Toluene-d8	100	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Quality Control - Spike/Spike Duplicate

ERM-WEST		Date Received:	03/27/18
1920 Main Street, Suite 300		Work Order:	18-03-2341
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
Project: Infineon			Page 1 of 2

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
18-03-2073-7	**Sample**	**Aqueous**	**GC/MS V V**	**03/27/18**	**03/27/18 16:45**	**180327S007**
18-03-2073-7	**Matrix Spike**	**Aqueous**	**GC/MS V V**	**03/27/18**	**03/27/18 17:27**	**180327S007**
18-03-2073-7	**Matrix Spike Duplicate**	**Aqueous**	**GC/MS V V**	**03/27/18**	**03/27/18 17:55**	**180327S007**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Acetone	ND	50.00	51.72	103	55.66	111	34-166	7	0-33	
Benzene	3.544	50.00	49.54	92	53.68	100	75-125	8	0-20	
Bromobenzene	ND	50.00	51.76	104	54.57	109	75-125	5	0-20	
Bromochloromethane	ND	50.00	56.56	113	56.29	113	75-125	0	0-20	
Bromodichloromethane	ND	50.00	49.19	98	52.01	104	75-134	6	0-20	
Bromoform	ND	50.00	49.12	98	53.18	106	74-134	8	0-20	
Bromomethane	ND	50.00	51.40	103	52.93	106	20-168	3	0-40	
2-Butanone	ND	50.00	45.14	90	48.48	97	37-157	7	0-20	
n-Butylbenzene	ND	50.00	49.27	99	53.35	107	73-145	8	0-20	
sec-Butylbenzene	ND	50.00	49.34	99	53.20	106	75-135	8	0-20	
tert-Butylbenzene	ND	50.00	49.80	100	53.89	108	75-136	8	0-20	
Carbon Disulfide	ND	50.00	46.91	94	51.15	102	50-152	9	0-27	
Carbon Tetrachloride	ND	50.00	52.65	105	55.18	110	70-154	5	0-20	
Chlorobenzene	ND	50.00	50.58	101	53.79	108	75-125	6	0-20	
Chloroethane	ND	50.00	58.71	117	59.63	119	41-167	2	0-26	
Chloroform	ND	50.00	47.15	94	49.86	100	75-127	6	0-20	
Chloromethane	ND	50.00	48.86	98	53.30	107	41-149	9	0-20	
2-Chlorotoluene	ND	50.00	50.48	101	53.55	107	75-128	6	0-20	
4-Chlorotoluene	ND	50.00	48.77	98	52.17	104	75-125	7	0-20	
Dibromochloromethane	ND	50.00	51.76	104	55.03	110	75-131	6	0-20	
1,2-Dibromo-3-Chloropropane	ND	50.00	51.32	103	54.57	109	64-142	6	0-20	
1,2-Dibromoethane	ND	50.00	51.38	103	54.39	109	75-129	6	0-20	
Dibromomethane	ND	50.00	50.67	101	52.44	105	75-125	3	0-20	
1,2-Dichlorobenzene	ND	50.00	51.66	103	54.47	109	75-125	5	0-20	
1,3-Dichlorobenzene	ND	50.00	50.30	101	53.64	107	75-125	6	0-20	
1,4-Dichlorobenzene	ND	50.00	49.84	100	53.17	106	75-125	6	0-20	
Dichlorodifluoromethane	ND	50.00	57.33	115	56.84	114	25-157	1	0-26	
1,1-Dichloroethane	ND	50.00	46.36	93	50.01	100	73-139	8	0-20	
1,2-Dichloroethane	ND	50.00	50.15	100	52.10	104	75-125	4	0-20	
1,1-Dichloroethene	ND	50.00	48.14	96	50.97	102	61-145	6	0-20	
c-1,2-Dichloroethene	1.203	50.00	46.85	91	50.81	99	75-125	8	0-20	
t-1,2-Dichloroethene	ND	50.00	46.92	94	50.36	101	64-142	7	0-20	
1,2-Dichloropropane	ND	50.00	46.52	93	49.60	99	75-127	6	0-20	
1,3-Dichloropropane	ND	50.00	48.36	97	51.22	102	75-125	6	0-20	
2,2-Dichloropropane	ND	50.00	53.16	106	54.76	110	24-180	3	0-20	

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - Spike/Spike Duplicate

ERM-WEST	Date Received:	03/27/18
1920 Main Street, Suite 300	Work Order:	18-03-2341
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
Project: Infineon		Page 2 of 2

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
1,1-Dichloropropene	ND	50.00	47.96	96	50.34	101	75-135	5	0-20	
c-1,3-Dichloropropene	ND	50.00	46.61	93	49.21	98	75-137	5	0-20	
t-1,3-Dichloropropene	ND	50.00	49.97	100	53.05	106	74-146	6	0-20	
Ethylbenzene	ND	50.00	51.20	102	54.34	109	75-129	6	0-20	
2-Hexanone	ND	50.00	45.24	90	46.89	94	47-161	4	0-20	
Isopropylbenzene	ND	50.00	50.79	102	54.50	109	75-135	7	0-20	
p-Isopropyltoluene	ND	50.00	49.98	100	53.18	106	75-136	6	0-20	
Methylene Chloride	ND	50.00	47.18	94	49.83	100	63-141	5	0-20	
4-Methyl-2-Pentanone	ND	50.00	43.66	87	46.47	93	66-138	6	0-20	
Naphthalene	ND	50.00	49.02	98	53.58	107	59-143	9	0-20	
n-Propylbenzene	ND	50.00	51.37	103	54.61	109	75-133	6	0-20	
Styrene	ND	50.00	51.57	103	54.03	108	70-142	5	0-28	
1,1,1,2-Tetrachloroethane	ND	50.00	52.05	104	55.00	110	75-139	6	0-20	
1,1,2,2-Tetrachloroethane	ND	50.00	48.15	96	51.47	103	61-145	7	0-20	
Tetrachloroethene	ND	50.00	51.09	102	54.13	108	47-143	6	0-20	
Toluene	ND	50.00	48.09	96	50.88	102	75-125	6	0-20	
1,2,3-Trichlorobenzene	ND	50.00	50.80	102	55.25	111	73-133	8	0-20	
1,2,4-Trichlorobenzene	ND	50.00	49.36	99	54.25	108	71-137	9	0-20	
1,1,1-Trichloroethane	ND	50.00	47.70	95	50.60	101	75-136	6	0-20	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	50.00	51.13	102	52.06	104	42-168	2	0-22	
1,1,2-Trichloroethane	ND	50.00	49.28	99	51.93	104	75-125	5	0-20	
Trichloroethene	ND	50.00	47.49	95	50.31	101	67-139	6	0-20	
Trichlorofluoromethane	ND	50.00	60.05	120	59.26	119	59-155	1	0-20	
1,2,3-Trichloropropane	ND	50.00	51.03	102	53.23	106	75-127	4	0-20	
1,2,4-Trimethylbenzene	ND	50.00	48.78	98	52.51	105	75-133	7	0-20	
1,3,5-Trimethylbenzene	ND	50.00	51.17	102	54.38	109	75-135	6	0-20	
Vinyl Acetate	ND	50.00	44.98	90	46.63	93	54-180	4	0-25	
Vinyl Chloride	1.659	50.00	68.11	133	69.15	135	51-153	2	0-20	
p/m-Xylene	ND	100.0	103.7	104	109.7	110	75-133	6	0-20	
o-Xylene	ND	50.00	51.61	103	54.22	108	75-134	5	0-20	
Methyl-t-Butyl Ether (MTBE)	ND	50.00	44.33	89	47.08	94	64-136	6	0-20	
Tert-Butyl Alcohol (TBA)	ND	250.0	313.4	125	315.6	126	75-136	1	0-20	
Diisopropyl Ether (DIPE)	ND	50.00	45.51	91	47.99	96	73-139	5	0-20	
Ethyl-t-Butyl Ether (ETBE)	ND	50.00	42.61	85	45.08	90	69-135	6	0-20	
Tert-Amyl-Methyl Ether (TAME)	ND	50.00	44.43	89	47.00	94	69-135	6	0-20	
Ethanol	ND	500.0	500.5	100	470.5	94	29-179	6	0-25	

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS

ERM-WEST		Date Received:	03/27/18
1920 Main Street, Suite 300		Work Order:	18-03-2341
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
Project: Infineon			Page 1 of 3

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-14-001-25511	**LCS**	**Aqueous**	**GC/MS V V**	**03/27/18**	**03/27/18 15:20**	**180327L025**

Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	ME CL	Qualifiers
Acetone	50.00	58.82	118	53-137	39-151	
Benzene	50.00	48.23	96	79-121	72-128	
Bromobenzene	50.00	53.47	107	80-120	73-127	
Bromochloromethane	50.00	53.35	107	80-122	73-129	
Bromodichloromethane	50.00	49.63	99	80-124	73-131	
Bromoform	50.00	49.87	100	73-127	64-136	
Bromomethane	50.00	50.03	100	50-150	33-167	
2-Butanone	50.00	52.23	104	60-126	49-137	
n-Butylbenzene	50.00	50.33	101	72-138	61-149	
sec-Butylbenzene	50.00	51.30	103	77-131	68-140	
tert-Butylbenzene	50.00	50.84	102	80-125	72-132	
Carbon Disulfide	50.00	48.34	97	50-150	33-167	
Carbon Tetrachloride	50.00	52.67	105	65-143	52-156	
Chlorobenzene	50.00	51.65	103	80-120	73-127	
Chloroethane	50.00	52.20	104	62-128	51-139	
Chloroform	50.00	47.79	96	80-120	73-127	
Chloromethane	50.00	47.55	95	43-133	28-148	
2-Chlorotoluene	50.00	51.20	102	80-121	73-128	
4-Chlorotoluene	50.00	49.36	99	80-120	73-127	
Dibromochloromethane	50.00	52.76	106	80-123	73-130	
1,2-Dibromo-3-Chloropropane	50.00	47.48	95	66-126	56-136	
1,2-Dibromoethane	50.00	52.02	104	80-120	73-127	
Dibromomethane	50.00	51.41	103	80-120	73-127	
1,2-Dichlorobenzene	50.00	51.92	104	80-120	73-127	
1,3-Dichlorobenzene	50.00	51.18	102	80-120	73-127	
1,4-Dichlorobenzene	50.00	50.74	101	80-120	73-127	
Dichlorodifluoromethane	50.00	48.63	97	50-150	33-167	
1,1-Dichloroethane	50.00	47.08	94	72-126	63-135	
1,2-Dichloroethane	50.00	49.30	99	76-120	69-127	
1,1-Dichloroethene	50.00	48.91	98	66-132	55-143	
c-1,2-Dichloroethene	50.00	47.07	94	78-120	71-127	
t-1,2-Dichloroethene	50.00	47.75	96	66-132	55-143	
1,2-Dichloropropane	50.00	47.14	94	80-120	73-127	
1,3-Dichloropropane	50.00	48.77	98	80-120	73-127	
2,2-Dichloropropane	50.00	50.23	100	50-150	33-167	
1,1-Dichloropropene	50.00	48.13	96	75-123	67-131	
c-1,3-Dichloropropene	50.00	47.97	96	77-131	68-140	
t-1,3-Dichloropropene	50.00	49.80	100	76-136	66-146	

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS

ERM-WEST		Date Received:	03/27/18
1920 Main Street, Suite 300		Work Order:	18-03-2341
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
Project: Infineon			Page 2 of 3

Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	ME CL	Qualifiers
Ethylbenzene	50.00	51.95	104	80-120	73-127	
2-Hexanone	50.00	45.61	91	63-123	53-133	
Isopropylbenzene	50.00	51.94	104	80-128	72-136	
p-Isopropyltoluene	50.00	51.60	103	73-133	63-143	
Methylene Chloride	50.00	47.40	95	61-133	49-145	
4-Methyl-2-Pentanone	50.00	42.62	85	65-125	55-135	
Naphthalene	50.00	46.04	92	69-129	59-139	
n-Propylbenzene	50.00	52.85	106	80-128	72-136	
Styrene	50.00	52.60	105	80-126	72-134	
1,1,1,2-Tetrachloroethane	50.00	52.39	105	80-129	72-137	
1,1,2,2-Tetrachloroethane	50.00	47.57	95	74-122	66-130	
Tetrachloroethene	50.00	53.63	107	55-139	41-153	
Toluene	50.00	48.93	98	80-120	73-127	
1,2,3-Trichlorobenzene	50.00	52.57	105	72-132	62-142	
1,2,4-Trichlorobenzene	50.00	51.04	102	74-134	64-144	
1,1,1-Trichloroethane	50.00	47.90	96	76-124	68-132	
1,1,2-Trichloro-1,2,2-Trifluoroethane	50.00	50.67	101	54-150	38-166	
1,1,2-Trichloroethane	50.00	50.79	102	80-120	73-127	
Trichloroethene	50.00	48.28	97	79-121	72-128	
Trichlorofluoromethane	50.00	50.87	102	72-132	62-142	
1,2,3-Trichloropropane	50.00	49.49	99	75-123	67-131	
1,2,4-Trimethylbenzene	50.00	49.75	99	74-128	65-137	
1,3,5-Trimethylbenzene	50.00	52.94	106	77-131	68-140	
Vinyl Acetate	50.00	43.66	87	50-150	33-167	
Vinyl Chloride	50.00	58.07	116	63-129	52-140	
p/m-Xylene	100.0	106.0	106	80-122	73-129	
o-Xylene	50.00	52.38	105	80-128	72-136	
Methyl-t-Butyl Ether (MTBE)	50.00	44.43	89	69-123	60-132	
Tert-Butyl Alcohol (TBA)	250.0	262.6	105	80-124	73-131	
Diisopropyl Ether (DIPE)	50.00	44.79	90	79-121	72-128	
Ethyl-t-Butyl Ether (ETBE)	50.00	43.07	86	71-125	62-134	
Tert-Amyl-Methyl Ether (TAME)	50.00	44.77	90	70-124	61-133	
Ethanol	500.0	528.0	106	53-149	37-165	

Total number of LCS compounds: 71
Total number of ME compounds: 0
Total number of ME compounds allowed: 4
LCS ME CL validation result: Pass

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS/LCSD

ERM-WEST		Date Received:	03/27/18
1920 Main Street, Suite 300		Work Order:	18-03-2341
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
Project: Infineon			Page 3 of 3

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
095-01-025-29809	**LCS**	**Solid**	**GC/MS OO**	**03/27/18**	**03/27/18 15:24**	**180327L035**
095-01-025-29809	**LCSD**	**Solid**	**GC/MS OO**	**03/27/18**	**03/27/18 15:53**	**180327L035**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Benzene	50.00	46.12	92	47.54	95	80-120	73-127	3	0-20	
Carbon Tetrachloride	50.00	49.57	99	53.33	107	65-137	53-149	7	0-20	
Chlorobenzene	50.00	47.25	94	49.40	99	80-120	73-127	4	0-20	
1,2-Dibromoethane	50.00	49.25	99	51.15	102	80-120	73-127	4	0-20	
1,2-Dichlorobenzene	50.00	46.25	93	48.92	98	80-120	73-127	6	0-20	
1,2-Dichloroethane	50.00	46.79	94	48.40	97	80-120	73-127	3	0-20	
1,1-Dichloroethene	50.00	49.13	98	50.65	101	68-128	58-138	3	0-20	
Ethylbenzene	50.00	47.89	96	50.16	100	80-120	73-127	5	0-20	
Toluene	50.00	47.03	94	49.08	98	80-120	73-127	4	0-20	
Trichloroethene	50.00	47.68	95	49.46	99	80-120	73-127	4	0-20	
Vinyl Chloride	50.00	52.96	106	55.96	112	67-127	57-137	6	0-20	
p/m-Xylene	100.0	93.92	94	98.22	98	75-125	67-133	4	0-25	
o-Xylene	50.00	47.44	95	49.69	99	75-125	67-133	5	0-25	
Methyl-t-Butyl Ether (MTBE)	50.00	55.14	110	46.64	93	70-124	61-133	17	0-20	
Tert-Butyl Alcohol (TBA)	250.0	248.8	100	242.5	97	73-121	65-129	3	0-20	
Diisopropyl Ether (DIPE)	50.00	48.72	97	50.74	101	69-129	59-139	4	0-20	
Ethyl-t-Butyl Ether (ETBE)	50.00	47.57	95	49.53	99	70-124	61-133	4	0-20	
Tert-Amyl-Methyl Ether (TAME)	50.00	47.65	95	48.89	98	74-122	66-130	3	0-20	
Ethanol	500.0	383.5	77	586.2	117	51-135	37-149	42	0-27	X

Total number of LCS compounds: 19
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

RPD: Relative Percent Difference. CL: Control Limits

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Sample Analysis Summary Report

Work Order: 18-03-2341 Page 1 of 1

Method	Extraction	Chemist ID	Instrument	Analytical Location
EPA 8260B	EPA 5035	849	GC/MS OO	2
EPA 8260B	EPA 5030C	1120	GC/MS V V	2

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Glossary of Terms and Qualifiers

Work Order: 18-03-2341 Page 1 of 1

Qualifiers	Definition
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
CI	See case narrative.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.
	Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.
	Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.
	A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

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For courier service / sample drop off information, contact us26_sales@eurofinsus.com or call us.

CHAIN-OF-CUSTODY RECORD

WO NO. / LAB USE ONLY: **18-03-2341**

Date 03/27/2018
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LABORATORY CLIENT: ERM
ADDRESS: 1920 Main Street – Suite 300
CITY: Irvine STATE: CA ZIP: 92614
TEL: 949-623-4700 E-MAIL: See Special Instructions

CLIENT PROJECT NAME / NO.: Infineon
P.O. NO.:
PROJECT CONTACT: Maggie Tymkow
LAB CONTACT OR QUOTE NO: Virendra Patel
GLOBAL ID:
LOG CODE:
SAMPLER(S): (PRINT) Manuel Leon

TURNAROUND TIME (Rush surcharges may apply to any TAT not "STANDARD"):
☐ SAME DAY ☒ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAYS ☐ STANDARD

EDD
☐ COELT EDF ☐ OTHER

SPECIAL INSTRUCTIONS:
– EQuIS –
Email to: maggie.tymkow@erm.com
stewart.emhof@erm.com
Brad.cross@erm.com
Tony.Perenteau@erm.com

REQUESTED ANALYSES
Please check box or fill in blank as needed.

LAB USE ONLY	SAMPLE ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	Unpreserved	Preserved	Field Filtered	☐ TPH(g) ☐ GRO	☐ TPH(d) ☐ DRO	TPH ☐ C6-C36 ☐ C6-C44	TPH ____	BTEX / MTBE ☐ 8260 ☐ ____	VOCs (8260)	Oxygenates (8260)	Prep (5035) ☐ En Core ☒ Terra Core	SVOCs (8270)	Pesticides (8081)	PCBs (8082)	PAHs ☐ 8270 ☐ 8270 SIM	T22 Metals ☐ 6010/747X ☐ 6020/747X	Cr(VI) ☐ 7196 ☐ 7199 ☐ 218.6
1	B2-8-5	3/27/18	08:43	Soil	1 Kit									✓								
2	B2-8-17	3/27/18	09:15	Soil	1 Kit									✓								
3	B2-8-28	3/27/18	09:27	Soil	1 Kit									✓								
4	B2-8-55	3/27/18	09:51	Soil	1 Kit									✓								
5	B2-8-80	3/27/18	10:36	Soil	1 Kit									✓								
6	B2-18-80	3/27/18	—	Soil	1 Kit									✓								
7	Trip BLK	—	—	Water	2									✓								

3/27/2018 12.00 VOA

Relinquished by: (Signature) Manuel Leon	3/27/18 – 1420	Received by: (Signature/Affiliation)	Date: 3/27/18 Time: 1420
Relinquished by: (Signature)		Received by: (Signature/Affiliation)	Date: 3/27/18 Time: 1700
Relinquished by: (Signature)		Received by: (Signature/Affiliation)	Date: Time:

2016-04-01-Revision

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WORK ORDER NUMBER: 18-03-2541

SAMPLE RECEIPT CHECKLIST

COOLER 1 OF 1

CLIENT: ERM

DATE: 03/27/2018

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)

Thermometer ID: SC6 (CF: +0.2°C); Temperature (w/o CF): 2.0 °C (w/ CF): 2.2 °C; ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____)

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling

☐ Sample(s) received at ambient temperature; placed on ice for transport by courier

Ambient Temperature: ☐ Air ☐ Filter Checked by: 1091

CUSTODY SEAL:

Cooler ☐ Present and Intact ☐ Present but Not Intact ☑ Not Present ☐ N/A Checked by: 1091

Sample(s) ☐ Present and Intact ☐ Present but Not Intact ☑ Not Present ☐ N/A Checked by: [illegible]

SAMPLE CONDITION:	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ Sampling date ☐ Sampling time ☐ Matrix ☐ Number of containers			
☐ No analysis requested ☐ Not relinquished ☐ No relinquished date ☐ No relinquished time			
Sampler's name indicated on COC	☑	☐	☐
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and in good condition	☑	☐	☐
Proper containers for analyses requested	☑	☐	☐
Sufficient volume/mass for analyses requested	☑	☐	☐
Samples received within holding time	☑	☐	☐
Aqueous samples for certain analyses received within 15-minute holding time			
☐ pH ☐ Residual Chlorine ☐ Dissolved Sulfide ☐ Dissolved Oxygen	☐	☐	☑
Proper preservation chemical(s) noted on COC and/or sample container	☑	☐	☐
Unpreserved aqueous sample(s) received for certain analyses			
☐ Volatile Organics ☐ Total Metals ☐ Dissolved Metals			
Acid/base preserved samples - pH within acceptable range	☐	☐	☑
Container(s) for certain analysis free of headspace	☐	☐	☐
☑ Volatile Organics ☐ Dissolved Gases (RSK-175) ☐ Dissolved Oxygen (SM 4500)			
☐ Carbon Dioxide (SM 4500) ☐ Ferrous Iron (SM 3500) ☐ Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE: (Trip Blank Lot Number: 1803164)

Aqueous: ☐ VOA ☑ VOA**h** ☐ VOA**na$_2$** ☐ 100PJ ☐ 100PJ**na$_2$** ☐ 125AGB ☐ 125AGB**h** ☐ 125AGB**p** ☐ 125PB ☐ 125PB**znna** (pH__9)

☐ 250AGB ☐ 250CGB ☐ 250CGB**s** (pH__2) ☐ 250PB ☐ 250PB**n** (pH__2) ☐ 500AGB ☐ 500AGJ ☐ 500AGJ**s** (pH__2) ☐ 500PB

☐ 1AGB ☐ 1AGB**na$_2$** ☐ 1AGB**s** (pH__2) ☐ 1AGB**s** (O&G) ☐ 1PB ☐ 1PB**na** (pH__12) ☐ _____ ☐ _____ ☐ _____

Solid: ☐ 4ozCGJ ☐ 8ozCGJ ☐ 16ozCGJ ☐ Sleeve (___) ☐ EnCores® (___) ☑ TerraCores® (3) ☑ 2oz PJ ☐ _____ ☐ _____

Air: ☐ Tedlar™ ☐ Canister ☐ Sorbent Tube ☐ PUF ☐ _____ **Other Matrix** (_____): ☐ _____ ☐ _____ ☐ _____

Container: **A** = Amber, **B** = Bottle, **C** = Clear, **E** = Envelope, **G** = Glass, **J** = Jar, **P** = Plastic, and **Z** = Ziploc/Resealable Bag

Preservative: **b** = buffered, **f** = filtered, **h** = HCl, **n** = HNO_3, **na** = NaOH, **na$_2$** = $Na_2S_2O_3$, **p** = H_3PO_4, **s** = H_2SO_4, **u** = ultra-pure, **x** = Na_2SO_3+$NaHSO_4.H_2O$, **znna** = Zn $(CH_3CO_2)_2$ + NaOH

Labeled/Checked by: [illegible]

Reviewed by: [illegible]

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WORK ORDER NUMBER: 18-03-2449

The difference is service

AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: ERM-WEST

Client Project Name: Infineon / 0444392

Attention: Maggie Tymkow
1920 Main Street
Suite 300
Irvine, CA 92614-7279

Approved for release on 03/30/2018 by:
Virendra Patel
Project Manager

ResultLink

Email your PM

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Client Project Name: Infineon / 0444392
Work Order Number: 18-03-2449

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Work Order Narrative

Work Order: 18-03-2449 Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 03/28/18. They were assigned to Work Order 18-03-2449.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

DoD Projects:

The test results contained in this report are accredited under the laboratory's ISO/IEC 17025:2005 and DoD-ELAP accreditation issued by the ANSI-ASQ National Accreditation Board. Refer to certificate and scope of accreditation ADE-1864.

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Sample Summary

Client:	ERM-WEST	Work Order:	18-03-2449
	1920 Main Street, Suite 300	Project Name:	Infineon / 0444392
	Irvine, CA 92614-7279	PO Number:	0444392
		Date/Time Received:	03/28/18 18:40
		Number of Containers:	22
Attn:	Maggie Tymkow		

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
B2-4-5	18-03-2449-1	03/28/18 08:11	4	Solid
B2-4-12	18-03-2449-2	03/28/18 09:14	4	Solid
B2-4-27	18-03-2449-3	03/28/18 09:24	4	Solid
B2-4-55	18-03-2449-4	03/28/18 09:58	4	Solid
B2-4-80	18-03-2449-5	03/28/18 10:40	4	Solid
Trip Blk	18-03-2449-6	03/28/18 00:00	2	Aqueous

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Detections Summary

Client:	ERM-WEST	Work Order:	18-03-2449
	1920 Main Street, Suite 300	Project Name:	Infineon / 0444392
	Irvine, CA 92614-7279	Received:	03/28/18
Attn:	Maggie Tymkow		Page 1 of 1

Client SampleID

Analyte	Result	Qualifiers	RL	Units	Method	Extraction
B2-4-80 (18-03-2449-5)						
Tetrachloroethene	1.8		1.1	ug/kg	EPA 8260B	EPA 5035

Subcontracted analyses, if any, are not included in this summary.

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* MDL is shown

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/28/18
Work Order: 18-03-2449
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

Project: Infineon / 0444392

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Trip Blk	**18-03-2449-6-A**	**03/28/18 00:00**	**Aqueous**	**GC/MS RR**	**03/28/18**	**03/28/18 20:07**	**180328L031**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	20	1.00	
Benzene	ND	0.50	1.00	
Bromobenzene	ND	1.0	1.00	
Bromochloromethane	ND	1.0	1.00	
Bromodichloromethane	ND	1.0	1.00	
Bromoform	ND	1.0	1.00	
Bromomethane	ND	10	1.00	
2-Butanone	ND	10	1.00	
n-Butylbenzene	ND	1.0	1.00	
sec-Butylbenzene	ND	1.0	1.00	
tert-Butylbenzene	ND	1.0	1.00	
Carbon Disulfide	ND	10	1.00	
Carbon Tetrachloride	ND	0.50	1.00	
Chlorobenzene	ND	1.0	1.00	
Chloroethane	ND	5.0	1.00	
Chloroform	ND	1.0	1.00	
Chloromethane	ND	10	1.00	
2-Chlorotoluene	ND	1.0	1.00	
4-Chlorotoluene	ND	1.0	1.00	
Dibromochloromethane	ND	1.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.0	1.00	
1,2-Dibromoethane	ND	1.0	1.00	
Dibromomethane	ND	1.0	1.00	
1,2-Dichlorobenzene	ND	1.0	1.00	
1,3-Dichlorobenzene	ND	1.0	1.00	
1,4-Dichlorobenzene	ND	1.0	1.00	
Dichlorodifluoromethane	ND	1.0	1.00	
1,1-Dichloroethane	ND	1.0	1.00	
1,2-Dichloroethane	ND	0.50	1.00	
1,1-Dichloroethene	ND	1.0	1.00	
c-1,2-Dichloroethene	ND	1.0	1.00	
t-1,2-Dichloroethene	ND	1.0	1.00	
1,2-Dichloropropane	ND	1.0	1.00	
1,3-Dichloropropane	ND	1.0	1.00	
2,2-Dichloropropane	ND	1.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/28/18
1920 Main Street, Suite 300	Work Order:	18-03-2449
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/L
Project: Infineon / 0444392		Page 2 of 6

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	1.0	1.00	
c-1,3-Dichloropropene	ND	0.50	1.00	
t-1,3-Dichloropropene	ND	0.50	1.00	
Ethylbenzene	ND	1.0	1.00	
2-Hexanone	ND	10	1.00	
Isopropylbenzene	ND	1.0	1.00	
p-Isopropyltoluene	ND	1.0	1.00	
Methylene Chloride	ND	10	1.00	
4-Methyl-2-Pentanone	ND	10	1.00	
Naphthalene	ND	10	1.00	
n-Propylbenzene	ND	1.0	1.00	
Styrene	ND	1.0	1.00	
1,1,1,2-Tetrachloroethane	ND	1.0	1.00	
1,1,2,2-Tetrachloroethane	ND	1.0	1.00	
Tetrachloroethene	ND	1.0	1.00	
Toluene	ND	1.0	1.00	
1,2,3-Trichlorobenzene	ND	1.0	1.00	
1,2,4-Trichlorobenzene	ND	1.0	1.00	
1,1,1-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.00	
1,1,2-Trichloroethane	ND	1.0	1.00	
Trichloroethene	ND	1.0	1.00	
Trichlorofluoromethane	ND	10	1.00	
1,2,3-Trichloropropane	ND	5.0	1.00	
1,2,4-Trimethylbenzene	ND	1.0	1.00	
1,3,5-Trimethylbenzene	ND	1.0	1.00	
Vinyl Acetate	ND	10	1.00	
Vinyl Chloride	ND	0.50	1.00	
p/m-Xylene	ND	1.0	1.00	
o-Xylene	ND	1.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	1.0	1.00	
Tert-Butyl Alcohol (TBA)	ND	10	1.00	
Diisopropyl Ether (DIPE)	ND	2.0	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	2.0	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	2.0	1.00	
Ethanol	ND	100	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	88	77-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/28/18
1920 Main Street, Suite 300		Work Order:	18-03-2449
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/L
Project: Infineon / 0444392			Page 3 of 6

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	110	80-128	
1,2-Dichloroethane-d4	108	80-129	
Toluene-d8	98	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/28/18
Work Order: 18-03-2449
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

Project: Infineon / 0444392

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-14-001-25519**	**N/A**	**Aqueous**	**GC/MS RR**	**03/28/18**	**03/28/18 19:05**	**180328L031**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	20	1.00	
Benzene	ND	0.50	1.00	
Bromobenzene	ND	1.0	1.00	
Bromochloromethane	ND	1.0	1.00	
Bromodichloromethane	ND	1.0	1.00	
Bromoform	ND	1.0	1.00	
Bromomethane	ND	10	1.00	
2-Butanone	ND	10	1.00	
n-Butylbenzene	ND	1.0	1.00	
sec-Butylbenzene	ND	1.0	1.00	
tert-Butylbenzene	ND	1.0	1.00	
Carbon Disulfide	ND	10	1.00	
Carbon Tetrachloride	ND	0.50	1.00	
Chlorobenzene	ND	1.0	1.00	
Chloroethane	ND	5.0	1.00	
Chloroform	ND	1.0	1.00	
Chloromethane	ND	10	1.00	
2-Chlorotoluene	ND	1.0	1.00	
4-Chlorotoluene	ND	1.0	1.00	
Dibromochloromethane	ND	1.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.0	1.00	
1,2-Dibromoethane	ND	1.0	1.00	
Dibromomethane	ND	1.0	1.00	
1,2-Dichlorobenzene	ND	1.0	1.00	
1,3-Dichlorobenzene	ND	1.0	1.00	
1,4-Dichlorobenzene	ND	1.0	1.00	
Dichlorodifluoromethane	ND	1.0	1.00	
1,1-Dichloroethane	ND	1.0	1.00	
1,2-Dichloroethane	ND	0.50	1.00	
1,1-Dichloroethene	ND	1.0	1.00	
c-1,2-Dichloroethene	ND	1.0	1.00	
t-1,2-Dichloroethene	ND	1.0	1.00	
1,2-Dichloropropane	ND	1.0	1.00	
1,3-Dichloropropane	ND	1.0	1.00	
2,2-Dichloropropane	ND	1.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/28/18
1920 Main Street, Suite 300	Work Order:	18-03-2449
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/L
Project: Infineon / 0444392		Page 5 of 6

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	1.0	1.00	
c-1,3-Dichloropropene	ND	0.50	1.00	
t-1,3-Dichloropropene	ND	0.50	1.00	
Ethylbenzene	ND	1.0	1.00	
2-Hexanone	ND	10	1.00	
Isopropylbenzene	ND	1.0	1.00	
p-Isopropyltoluene	ND	1.0	1.00	
Methylene Chloride	ND	10	1.00	
4-Methyl-2-Pentanone	ND	10	1.00	
Naphthalene	ND	10	1.00	
n-Propylbenzene	ND	1.0	1.00	
Styrene	ND	1.0	1.00	
1,1,1,2-Tetrachloroethane	ND	1.0	1.00	
1,1,2,2-Tetrachloroethane	ND	1.0	1.00	
Tetrachloroethene	ND	1.0	1.00	
Toluene	ND	1.0	1.00	
1,2,3-Trichlorobenzene	ND	1.0	1.00	
1,2,4-Trichlorobenzene	ND	1.0	1.00	
1,1,1-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.00	
1,1,2-Trichloroethane	ND	1.0	1.00	
Trichloroethene	ND	1.0	1.00	
Trichlorofluoromethane	ND	10	1.00	
1,2,3-Trichloropropane	ND	5.0	1.00	
1,2,4-Trimethylbenzene	ND	1.0	1.00	
1,3,5-Trimethylbenzene	ND	1.0	1.00	
Vinyl Acetate	ND	10	1.00	
Vinyl Chloride	ND	0.50	1.00	
p/m-Xylene	ND	1.0	1.00	
o-Xylene	ND	1.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	1.0	1.00	
Tert-Butyl Alcohol (TBA)	ND	10	1.00	
Diisopropyl Ether (DIPE)	ND	2.0	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	2.0	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	2.0	1.00	
Ethanol	ND	100	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	88	77-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/28/18
1920 Main Street, Suite 300		Work Order:	18-03-2449
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/L
Project: Infineon / 0444392			Page 6 of 6

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	111	80-128	
1,2-Dichloroethane-d4	108	80-129	
Toluene-d8	98	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392

Date Received: 03/28/18
Work Order: 18-03-2449
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B2-4-5	**18-03-2449-1-C**	**03/28/18 08:11**	**Solid**	**GC/MS GGG**	**03/28/18**	**03/28/18 20:08**	**180328L024**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	40	1.00	
Benzene	ND	0.79	1.00	
Bromobenzene	ND	0.79	1.00	
Bromochloromethane	ND	1.6	1.00	
Bromodichloromethane	ND	0.79	1.00	
Bromoform	ND	4.0	1.00	
Bromomethane	ND	16	1.00	
2-Butanone	ND	16	1.00	
n-Butylbenzene	ND	0.79	1.00	
sec-Butylbenzene	ND	0.79	1.00	
tert-Butylbenzene	ND	0.79	1.00	
Carbon Disulfide	ND	7.9	1.00	
Carbon Tetrachloride	ND	0.79	1.00	
Chlorobenzene	ND	0.79	1.00	
Chloroethane	ND	1.6	1.00	
Chloroform	ND	0.79	1.00	
Chloromethane	ND	16	1.00	
2-Chlorotoluene	ND	0.79	1.00	
4-Chlorotoluene	ND	0.79	1.00	
Dibromochloromethane	ND	1.6	1.00	
1,2-Dibromo-3-Chloropropane	ND	4.0	1.00	
1,2-Dibromoethane	ND	0.79	1.00	
Dibromomethane	ND	0.79	1.00	
1,2-Dichlorobenzene	ND	0.79	1.00	
1,3-Dichlorobenzene	ND	0.79	1.00	
1,4-Dichlorobenzene	ND	0.79	1.00	
Dichlorodifluoromethane	ND	1.6	1.00	
1,1-Dichloroethane	ND	0.79	1.00	
1,2-Dichloroethane	ND	0.79	1.00	
1,1-Dichloroethene	ND	0.79	1.00	
c-1,2-Dichloroethene	ND	0.79	1.00	
t-1,2-Dichloroethene	ND	0.79	1.00	
1,2-Dichloropropane	ND	0.79	1.00	
1,3-Dichloropropane	ND	0.79	1.00	
2,2-Dichloropropane	ND	4.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/28/18
1920 Main Street, Suite 300		Work Order:	18-03-2449
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392			Page 2 of 21

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	1.6	1.00	
c-1,3-Dichloropropene	ND	0.79	1.00	
t-1,3-Dichloropropene	ND	1.6	1.00	
Ethylbenzene	ND	0.79	1.00	
2-Hexanone	ND	16	1.00	
Isopropylbenzene	ND	0.79	1.00	
p-Isopropyltoluene	ND	0.79	1.00	
Methylene Chloride	ND	7.9	1.00	
4-Methyl-2-Pentanone	ND	16	1.00	
Naphthalene	ND	7.9	1.00	
n-Propylbenzene	ND	1.6	1.00	
Styrene	ND	0.79	1.00	
1,1,1,2-Tetrachloroethane	ND	0.79	1.00	
1,1,2,2-Tetrachloroethane	ND	1.6	1.00	
Tetrachloroethene	ND	0.79	1.00	
Toluene	ND	0.79	1.00	
1,2,3-Trichlorobenzene	ND	1.6	1.00	
1,2,4-Trichlorobenzene	ND	1.6	1.00	
1,1,1-Trichloroethane	ND	0.79	1.00	
1,1,2-Trichloroethane	ND	0.79	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	7.9	1.00	
Trichloroethene	ND	1.6	1.00	
Trichlorofluoromethane	ND	7.9	1.00	
1,2,3-Trichloropropane	ND	1.6	1.00	
1,2,4-Trimethylbenzene	ND	1.6	1.00	
1,3,5-Trimethylbenzene	ND	1.6	1.00	
Vinyl Acetate	ND	7.9	1.00	
Vinyl Chloride	ND	0.79	1.00	
p/m-Xylene	ND	1.6	1.00	
o-Xylene	ND	0.79	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	1.6	1.00	
Tert-Butyl Alcohol (TBA)	ND	16	1.00	
Diisopropyl Ether (DIPE)	ND	0.79	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.79	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.79	1.00	
Ethanol	ND	400	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	95	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/28/18
1920 Main Street, Suite 300		Work Order:	18-03-2449
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392			Page 3 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	108	79-133	
1,2-Dichloroethane-d4	119	71-155	
Toluene-d8	102	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392

Date Received: 03/28/18
Work Order: 18-03-2449
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B2-4-12	**18-03-2449-2-C**	**03/28/18 09:14**	**Solid**	**GC/MS GGG**	**03/28/18**	**03/28/18 20:37**	**180328L024**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	47	1.00	
Benzene	ND	0.93	1.00	
Bromobenzene	ND	0.93	1.00	
Bromochloromethane	ND	1.9	1.00	
Bromodichloromethane	ND	0.93	1.00	
Bromoform	ND	4.7	1.00	
Bromomethane	ND	19	1.00	
2-Butanone	ND	19	1.00	
n-Butylbenzene	ND	0.93	1.00	
sec-Butylbenzene	ND	0.93	1.00	
tert-Butylbenzene	ND	0.93	1.00	
Carbon Disulfide	ND	9.3	1.00	
Carbon Tetrachloride	ND	0.93	1.00	
Chlorobenzene	ND	0.93	1.00	
Chloroethane	ND	1.9	1.00	
Chloroform	ND	0.93	1.00	
Chloromethane	ND	19	1.00	
2-Chlorotoluene	ND	0.93	1.00	
4-Chlorotoluene	ND	0.93	1.00	
Dibromochloromethane	ND	1.9	1.00	
1,2-Dibromo-3-Chloropropane	ND	4.7	1.00	
1,2-Dibromoethane	ND	0.93	1.00	
Dibromomethane	ND	0.93	1.00	
1,2-Dichlorobenzene	ND	0.93	1.00	
1,3-Dichlorobenzene	ND	0.93	1.00	
1,4-Dichlorobenzene	ND	0.93	1.00	
Dichlorodifluoromethane	ND	1.9	1.00	
1,1-Dichloroethane	ND	0.93	1.00	
1,2-Dichloroethane	ND	0.93	1.00	
1,1-Dichloroethene	ND	0.93	1.00	
c-1,2-Dichloroethene	ND	0.93	1.00	
t-1,2-Dichloroethene	ND	0.93	1.00	
1,2-Dichloropropane	ND	0.93	1.00	
1,3-Dichloropropane	ND	0.93	1.00	
2,2-Dichloropropane	ND	4.7	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/28/18
1920 Main Street, Suite 300		Work Order:	18-03-2449
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392			Page 5 of 21

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	1.9	1.00	
c-1,3-Dichloropropene	ND	0.93	1.00	
t-1,3-Dichloropropene	ND	1.9	1.00	
Ethylbenzene	ND	0.93	1.00	
2-Hexanone	ND	19	1.00	
Isopropylbenzene	ND	0.93	1.00	
p-Isopropyltoluene	ND	0.93	1.00	
Methylene Chloride	ND	9.3	1.00	
4-Methyl-2-Pentanone	ND	19	1.00	
Naphthalene	ND	9.3	1.00	
n-Propylbenzene	ND	1.9	1.00	
Styrene	ND	0.93	1.00	
1,1,1,2-Tetrachloroethane	ND	0.93	1.00	
1,1,2,2-Tetrachloroethane	ND	1.9	1.00	
Tetrachloroethene	ND	0.93	1.00	
Toluene	ND	0.93	1.00	
1,2,3-Trichlorobenzene	ND	1.9	1.00	
1,2,4-Trichlorobenzene	ND	1.9	1.00	
1,1,1-Trichloroethane	ND	0.93	1.00	
1,1,2-Trichloroethane	ND	0.93	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	9.3	1.00	
Trichloroethene	ND	1.9	1.00	
Trichlorofluoromethane	ND	9.3	1.00	
1,2,3-Trichloropropane	ND	1.9	1.00	
1,2,4-Trimethylbenzene	ND	1.9	1.00	
1,3,5-Trimethylbenzene	ND	1.9	1.00	
Vinyl Acetate	ND	9.3	1.00	
Vinyl Chloride	ND	0.93	1.00	
p/m-Xylene	ND	1.9	1.00	
o-Xylene	ND	0.93	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	1.9	1.00	
Tert-Butyl Alcohol (TBA)	ND	19	1.00	
Diisopropyl Ether (DIPE)	ND	0.93	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.93	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.93	1.00	
Ethanol	ND	470	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	94	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/28/18
1920 Main Street, Suite 300		Work Order:	18-03-2449
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392			Page 6 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	108	79-133	
1,2-Dichloroethane-d4	119	71-155	
Toluene-d8	103	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392

Date Received: 03/28/18
Work Order: 18-03-2449
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B2-4-27	**18-03-2449-3-C**	**03/28/18 09:24**	**Solid**	**GC/MS GGG**	**03/28/18**	**03/28/18 21:05**	**180328L024**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	51	1.00	
Benzene	ND	1.0	1.00	
Bromobenzene	ND	1.0	1.00	
Bromochloromethane	ND	2.0	1.00	
Bromodichloromethane	ND	1.0	1.00	
Bromoform	ND	5.1	1.00	
Bromomethane	ND	20	1.00	
2-Butanone	ND	20	1.00	
n-Butylbenzene	ND	1.0	1.00	
sec-Butylbenzene	ND	1.0	1.00	
tert-Butylbenzene	ND	1.0	1.00	
Carbon Disulfide	ND	10	1.00	
Carbon Tetrachloride	ND	1.0	1.00	
Chlorobenzene	ND	1.0	1.00	
Chloroethane	ND	2.0	1.00	
Chloroform	ND	1.0	1.00	
Chloromethane	ND	20	1.00	
2-Chlorotoluene	ND	1.0	1.00	
4-Chlorotoluene	ND	1.0	1.00	
Dibromochloromethane	ND	2.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.1	1.00	
1,2-Dibromoethane	ND	1.0	1.00	
Dibromomethane	ND	1.0	1.00	
1,2-Dichlorobenzene	ND	1.0	1.00	
1,3-Dichlorobenzene	ND	1.0	1.00	
1,4-Dichlorobenzene	ND	1.0	1.00	
Dichlorodifluoromethane	ND	2.0	1.00	
1,1-Dichloroethane	ND	1.0	1.00	
1,2-Dichloroethane	ND	1.0	1.00	
1,1-Dichloroethene	ND	1.0	1.00	
c-1,2-Dichloroethene	ND	1.0	1.00	
t-1,2-Dichloroethene	ND	1.0	1.00	
1,2-Dichloropropane	ND	1.0	1.00	
1,3-Dichloropropane	ND	1.0	1.00	
2,2-Dichloropropane	ND	5.1	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/28/18
1920 Main Street, Suite 300		Work Order:	18-03-2449
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392			Page 8 of 21

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.0	1.00	
c-1,3-Dichloropropene	ND	1.0	1.00	
t-1,3-Dichloropropene	ND	2.0	1.00	
Ethylbenzene	ND	1.0	1.00	
2-Hexanone	ND	20	1.00	
Isopropylbenzene	ND	1.0	1.00	
p-Isopropyltoluene	ND	1.0	1.00	
Methylene Chloride	ND	10	1.00	
4-Methyl-2-Pentanone	ND	20	1.00	
Naphthalene	ND	10	1.00	
n-Propylbenzene	ND	2.0	1.00	
Styrene	ND	1.0	1.00	
1,1,1,2-Tetrachloroethane	ND	1.0	1.00	
1,1,2,2-Tetrachloroethane	ND	2.0	1.00	
Tetrachloroethene	ND	1.0	1.00	
Toluene	ND	1.0	1.00	
1,2,3-Trichlorobenzene	ND	2.0	1.00	
1,2,4-Trichlorobenzene	ND	2.0	1.00	
1,1,1-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.00	
Trichloroethene	ND	2.0	1.00	
Trichlorofluoromethane	ND	10	1.00	
1,2,3-Trichloropropane	ND	2.0	1.00	
1,2,4-Trimethylbenzene	ND	2.0	1.00	
1,3,5-Trimethylbenzene	ND	2.0	1.00	
Vinyl Acetate	ND	10	1.00	
Vinyl Chloride	ND	1.0	1.00	
p/m-Xylene	ND	2.0	1.00	
o-Xylene	ND	1.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.0	1.00	
Tert-Butyl Alcohol (TBA)	ND	20	1.00	
Diisopropyl Ether (DIPE)	ND	1.0	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.0	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.0	1.00	
Ethanol	ND	510	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	94	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/28/18
1920 Main Street, Suite 300		Work Order:	18-03-2449
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392			Page 9 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	110	79-133	
1,2-Dichloroethane-d4	122	71-155	
Toluene-d8	102	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392

Date Received: 03/28/18
Work Order: 18-03-2449
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B2-4-55	**18-03-2449-4-C**	**03/28/18 09:58**	**Solid**	**GC/MS GGG**	**03/28/18**	**03/28/18 21:34**	**180328L024**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	59	1.00	
Benzene	ND	1.2	1.00	
Bromobenzene	ND	1.2	1.00	
Bromochloromethane	ND	2.3	1.00	
Bromodichloromethane	ND	1.2	1.00	
Bromoform	ND	5.9	1.00	
Bromomethane	ND	23	1.00	
2-Butanone	ND	23	1.00	
n-Butylbenzene	ND	1.2	1.00	
sec-Butylbenzene	ND	1.2	1.00	
tert-Butylbenzene	ND	1.2	1.00	
Carbon Disulfide	ND	12	1.00	
Carbon Tetrachloride	ND	1.2	1.00	
Chlorobenzene	ND	1.2	1.00	
Chloroethane	ND	2.3	1.00	
Chloroform	ND	1.2	1.00	
Chloromethane	ND	23	1.00	
2-Chlorotoluene	ND	1.2	1.00	
4-Chlorotoluene	ND	1.2	1.00	
Dibromochloromethane	ND	2.3	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.9	1.00	
1,2-Dibromoethane	ND	1.2	1.00	
Dibromomethane	ND	1.2	1.00	
1,2-Dichlorobenzene	ND	1.2	1.00	
1,3-Dichlorobenzene	ND	1.2	1.00	
1,4-Dichlorobenzene	ND	1.2	1.00	
Dichlorodifluoromethane	ND	2.3	1.00	
1,1-Dichloroethane	ND	1.2	1.00	
1,2-Dichloroethane	ND	1.2	1.00	
1,1-Dichloroethene	ND	1.2	1.00	
c-1,2-Dichloroethene	ND	1.2	1.00	
t-1,2-Dichloroethene	ND	1.2	1.00	
1,2-Dichloropropane	ND	1.2	1.00	
1,3-Dichloropropane	ND	1.2	1.00	
2,2-Dichloropropane	ND	5.9	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/28/18
1920 Main Street, Suite 300		Work Order:	18-03-2449
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392			Page 11 of 21

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.3	1.00	
c-1,3-Dichloropropene	ND	1.2	1.00	
t-1,3-Dichloropropene	ND	2.3	1.00	
Ethylbenzene	ND	1.2	1.00	
2-Hexanone	ND	23	1.00	
Isopropylbenzene	ND	1.2	1.00	
p-Isopropyltoluene	ND	1.2	1.00	
Methylene Chloride	ND	12	1.00	
4-Methyl-2-Pentanone	ND	23	1.00	
Naphthalene	ND	12	1.00	
n-Propylbenzene	ND	2.3	1.00	
Styrene	ND	1.2	1.00	
1,1,1,2-Tetrachloroethane	ND	1.2	1.00	
1,1,2,2-Tetrachloroethane	ND	2.3	1.00	
Tetrachloroethene	ND	1.2	1.00	
Toluene	ND	1.2	1.00	
1,2,3-Trichlorobenzene	ND	2.3	1.00	
1,2,4-Trichlorobenzene	ND	2.3	1.00	
1,1,1-Trichloroethane	ND	1.2	1.00	
1,1,2-Trichloroethane	ND	1.2	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	12	1.00	
Trichloroethene	ND	2.3	1.00	
Trichlorofluoromethane	ND	12	1.00	
1,2,3-Trichloropropane	ND	2.3	1.00	
1,2,4-Trimethylbenzene	ND	2.3	1.00	
1,3,5-Trimethylbenzene	ND	2.3	1.00	
Vinyl Acetate	ND	12	1.00	
Vinyl Chloride	ND	1.2	1.00	
p/m-Xylene	ND	2.3	1.00	
o-Xylene	ND	1.2	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.3	1.00	
Tert-Butyl Alcohol (TBA)	ND	23	1.00	
Diisopropyl Ether (DIPE)	ND	1.2	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.2	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.2	1.00	
Ethanol	ND	590	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	93	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/28/18
1920 Main Street, Suite 300		Work Order:	18-03-2449
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392			Page 12 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	109	79-133	
1,2-Dichloroethane-d4	120	71-155	
Toluene-d8	102	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392

Date Received: 03/28/18
Work Order: 18-03-2449
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B2-4-80	**18-03-2449-5-D**	**03/28/18 10:40**	**Solid**	**GC/MS LL**	**03/28/18**	**03/29/18 14:31**	**180329L001**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	53	1.00	
Benzene	ND	1.1	1.00	
Bromobenzene	ND	1.1	1.00	
Bromochloromethane	ND	2.1	1.00	
Bromodichloromethane	ND	1.1	1.00	
Bromoform	ND	5.3	1.00	
Bromomethane	ND	21	1.00	
2-Butanone	ND	21	1.00	
n-Butylbenzene	ND	1.1	1.00	
sec-Butylbenzene	ND	1.1	1.00	
tert-Butylbenzene	ND	1.1	1.00	
Carbon Disulfide	ND	11	1.00	
Carbon Tetrachloride	ND	1.1	1.00	
Chlorobenzene	ND	1.1	1.00	
Chloroethane	ND	2.1	1.00	
Chloroform	ND	1.1	1.00	
Chloromethane	ND	21	1.00	
2-Chlorotoluene	ND	1.1	1.00	
4-Chlorotoluene	ND	1.1	1.00	
Dibromochloromethane	ND	2.1	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.3	1.00	
1,2-Dibromoethane	ND	1.1	1.00	
Dibromomethane	ND	1.1	1.00	
1,2-Dichlorobenzene	ND	1.1	1.00	
1,3-Dichlorobenzene	ND	1.1	1.00	
1,4-Dichlorobenzene	ND	1.1	1.00	
Dichlorodifluoromethane	ND	2.1	1.00	
1,1-Dichloroethane	ND	1.1	1.00	
1,2-Dichloroethane	ND	1.1	1.00	
1,1-Dichloroethene	ND	1.1	1.00	
c-1,2-Dichloroethene	ND	1.1	1.00	
t-1,2-Dichloroethene	ND	1.1	1.00	
1,2-Dichloropropane	ND	1.1	1.00	
1,3-Dichloropropane	ND	1.1	1.00	
2,2-Dichloropropane	ND	5.3	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/28/18
1920 Main Street, Suite 300		Work Order:	18-03-2449
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392			Page 14 of 21

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.1	1.00	
c-1,3-Dichloropropene	ND	1.1	1.00	
t-1,3-Dichloropropene	ND	2.1	1.00	
Ethylbenzene	ND	1.1	1.00	
2-Hexanone	ND	21	1.00	
Isopropylbenzene	ND	1.1	1.00	
p-Isopropyltoluene	ND	1.1	1.00	
Methylene Chloride	ND	11	1.00	
4-Methyl-2-Pentanone	ND	21	1.00	
Naphthalene	ND	11	1.00	
n-Propylbenzene	ND	2.1	1.00	
Styrene	ND	1.1	1.00	
1,1,1,2-Tetrachloroethane	ND	1.1	1.00	
1,1,2,2-Tetrachloroethane	ND	2.1	1.00	
Tetrachloroethene	1.8	1.1	1.00	
Toluene	ND	1.1	1.00	
1,2,3-Trichlorobenzene	ND	2.1	1.00	
1,2,4-Trichlorobenzene	ND	2.1	1.00	
1,1,1-Trichloroethane	ND	1.1	1.00	
1,1,2-Trichloroethane	ND	1.1	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	11	1.00	
Trichloroethene	ND	2.1	1.00	
Trichlorofluoromethane	ND	11	1.00	
1,2,3-Trichloropropane	ND	2.1	1.00	
1,2,4-Trimethylbenzene	ND	2.1	1.00	
1,3,5-Trimethylbenzene	ND	2.1	1.00	
Vinyl Acetate	ND	11	1.00	
Vinyl Chloride	ND	1.1	1.00	
p/m-Xylene	ND	2.1	1.00	
o-Xylene	ND	1.1	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.1	1.00	
Tert-Butyl Alcohol (TBA)	ND	21	1.00	
Diisopropyl Ether (DIPE)	ND	1.1	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.1	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.1	1.00	
Ethanol	ND	530	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	93	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/28/18
1920 Main Street, Suite 300		Work Order:	18-03-2449
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392			Page 15 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	95	79-133	
1,2-Dichloroethane-d4	93	71-155	
Toluene-d8	97	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392

Date Received: 03/28/18
Work Order: 18-03-2449
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**095-01-025-29812**	**N/A**	**Solid**	**GC/MS GGG**	**03/28/18**	**03/28/18 16:49**	**180328L024**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	50	1.00	
Benzene	ND	1.0	1.00	
Bromobenzene	ND	1.0	1.00	
Bromochloromethane	ND	2.0	1.00	
Bromodichloromethane	ND	1.0	1.00	
Bromoform	ND	5.0	1.00	
Bromomethane	ND	20	1.00	
2-Butanone	ND	20	1.00	
n-Butylbenzene	ND	1.0	1.00	
sec-Butylbenzene	ND	1.0	1.00	
tert-Butylbenzene	ND	1.0	1.00	
Carbon Disulfide	ND	10	1.00	
Carbon Tetrachloride	ND	1.0	1.00	
Chlorobenzene	ND	1.0	1.00	
Chloroethane	ND	2.0	1.00	
Chloroform	ND	1.0	1.00	
Chloromethane	ND	20	1.00	
2-Chlorotoluene	ND	1.0	1.00	
4-Chlorotoluene	ND	1.0	1.00	
Dibromochloromethane	ND	2.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.0	1.00	
1,2-Dibromoethane	ND	1.0	1.00	
Dibromomethane	ND	1.0	1.00	
1,2-Dichlorobenzene	ND	1.0	1.00	
1,3-Dichlorobenzene	ND	1.0	1.00	
1,4-Dichlorobenzene	ND	1.0	1.00	
Dichlorodifluoromethane	ND	2.0	1.00	
1,1-Dichloroethane	ND	1.0	1.00	
1,2-Dichloroethane	ND	1.0	1.00	
1,1-Dichloroethene	ND	1.0	1.00	
c-1,2-Dichloroethene	ND	1.0	1.00	
t-1,2-Dichloroethene	ND	1.0	1.00	
1,2-Dichloropropane	ND	1.0	1.00	
1,3-Dichloropropane	ND	1.0	1.00	
2,2-Dichloropropane	ND	5.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/28/18
1920 Main Street, Suite 300		Work Order:	18-03-2449
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392			Page 17 of 21

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.0	1.00	
c-1,3-Dichloropropene	ND	1.0	1.00	
t-1,3-Dichloropropene	ND	2.0	1.00	
Ethylbenzene	ND	1.0	1.00	
2-Hexanone	ND	20	1.00	
Isopropylbenzene	ND	1.0	1.00	
p-Isopropyltoluene	ND	1.0	1.00	
Methylene Chloride	ND	10	1.00	
4-Methyl-2-Pentanone	ND	20	1.00	
Naphthalene	ND	10	1.00	
n-Propylbenzene	ND	2.0	1.00	
Styrene	ND	1.0	1.00	
1,1,1,2-Tetrachloroethane	ND	1.0	1.00	
1,1,2,2-Tetrachloroethane	ND	2.0	1.00	
Tetrachloroethene	ND	1.0	1.00	
Toluene	ND	1.0	1.00	
1,2,3-Trichlorobenzene	ND	2.0	1.00	
1,2,4-Trichlorobenzene	ND	2.0	1.00	
1,1,1-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.00	
Trichloroethene	ND	2.0	1.00	
Trichlorofluoromethane	ND	10	1.00	
1,2,3-Trichloropropane	ND	2.0	1.00	
1,2,4-Trimethylbenzene	ND	2.0	1.00	
1,3,5-Trimethylbenzene	ND	2.0	1.00	
Vinyl Acetate	ND	10	1.00	
Vinyl Chloride	ND	1.0	1.00	
p/m-Xylene	ND	2.0	1.00	
o-Xylene	ND	1.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.0	1.00	
Tert-Butyl Alcohol (TBA)	ND	20	1.00	
Diisopropyl Ether (DIPE)	ND	1.0	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.0	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.0	1.00	
Ethanol	ND	500	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	92	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/28/18
1920 Main Street, Suite 300	Work Order:	18-03-2449
Irvine, CA 92614-7279	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: Infineon / 0444392		Page 18 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	107	79-133	
1,2-Dichloroethane-d4	111	71-155	
Toluene-d8	102	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392

Date Received: 03/28/18
Work Order: 18-03-2449
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**095-01-025-29814**	**N/A**	**Solid**	**GC/MS LL**	**03/29/18**	**03/29/18 13:37**	**180329L001**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	50	1.00	
Benzene	ND	1.0	1.00	
Bromobenzene	ND	1.0	1.00	
Bromochloromethane	ND	2.0	1.00	
Bromodichloromethane	ND	1.0	1.00	
Bromoform	ND	5.0	1.00	
Bromomethane	ND	20	1.00	
2-Butanone	ND	20	1.00	
n-Butylbenzene	ND	1.0	1.00	
sec-Butylbenzene	ND	1.0	1.00	
tert-Butylbenzene	ND	1.0	1.00	
Carbon Disulfide	ND	10	1.00	
Carbon Tetrachloride	ND	1.0	1.00	
Chlorobenzene	ND	1.0	1.00	
Chloroethane	ND	2.0	1.00	
Chloroform	ND	1.0	1.00	
Chloromethane	ND	20	1.00	
2-Chlorotoluene	ND	1.0	1.00	
4-Chlorotoluene	ND	1.0	1.00	
Dibromochloromethane	ND	2.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.0	1.00	
1,2-Dibromoethane	ND	1.0	1.00	
Dibromomethane	ND	1.0	1.00	
1,2-Dichlorobenzene	ND	1.0	1.00	
1,3-Dichlorobenzene	ND	1.0	1.00	
1,4-Dichlorobenzene	ND	1.0	1.00	
Dichlorodifluoromethane	ND	2.0	1.00	
1,1-Dichloroethane	ND	1.0	1.00	
1,2-Dichloroethane	ND	1.0	1.00	
1,1-Dichloroethene	ND	1.0	1.00	
c-1,2-Dichloroethene	ND	1.0	1.00	
t-1,2-Dichloroethene	ND	1.0	1.00	
1,2-Dichloropropane	ND	1.0	1.00	
1,3-Dichloropropane	ND	1.0	1.00	
2,2-Dichloropropane	ND	5.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/28/18
1920 Main Street, Suite 300		Work Order:	18-03-2449
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392			Page 20 of 21

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.0	1.00	
c-1,3-Dichloropropene	ND	1.0	1.00	
t-1,3-Dichloropropene	ND	2.0	1.00	
Ethylbenzene	ND	1.0	1.00	
2-Hexanone	ND	20	1.00	
Isopropylbenzene	ND	1.0	1.00	
p-Isopropyltoluene	ND	1.0	1.00	
Methylene Chloride	ND	10	1.00	
4-Methyl-2-Pentanone	ND	20	1.00	
Naphthalene	ND	10	1.00	
n-Propylbenzene	ND	2.0	1.00	
Styrene	ND	1.0	1.00	
1,1,1,2-Tetrachloroethane	ND	1.0	1.00	
1,1,2,2-Tetrachloroethane	ND	2.0	1.00	
Tetrachloroethene	ND	1.0	1.00	
Toluene	ND	1.0	1.00	
1,2,3-Trichlorobenzene	ND	2.0	1.00	
1,2,4-Trichlorobenzene	ND	2.0	1.00	
1,1,1-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.00	
Trichloroethene	ND	2.0	1.00	
Trichlorofluoromethane	ND	10	1.00	
1,2,3-Trichloropropane	ND	2.0	1.00	
1,2,4-Trimethylbenzene	ND	2.0	1.00	
1,3,5-Trimethylbenzene	ND	2.0	1.00	
Vinyl Acetate	ND	10	1.00	
Vinyl Chloride	ND	1.0	1.00	
p/m-Xylene	ND	2.0	1.00	
o-Xylene	ND	1.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.0	1.00	
Tert-Butyl Alcohol (TBA)	ND	20	1.00	
Diisopropyl Ether (DIPE)	ND	1.0	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.0	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.0	1.00	
Ethanol	ND	500	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	94	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/28/18
1920 Main Street, Suite 300		Work Order:	18-03-2449
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392			Page 21 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	93	79-133	
1,2-Dichloroethane-d4	87	71-155	
Toluene-d8	98	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Quality Control - LCS/LCSD

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392

Date Received: 03/28/18
Work Order: 18-03-2449
Preparation: EPA 5030C
Method: EPA 8260B

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-14-001-25519	**LCS**	**Aqueous**	**GC/MS RR**	**03/28/18**	**03/28/18 15:39**	**180328L031**
099-14-001-25519	**LCSD**	**Aqueous**	**GC/MS RR**	**03/28/18**	**03/28/18 16:10**	**180328L031**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Acetone	50.00	48.55	97	47.59	95	53-137	39-151	2	0-21	
Benzene	50.00	54.52	109	52.08	104	79-121	72-128	5	0-20	
Bromobenzene	50.00	56.64	113	54.79	110	80-120	73-127	3	0-20	
Bromochloromethane	50.00	60.35	121	57.53	115	80-122	73-129	5	0-20	
Bromodichloromethane	50.00	56.90	114	54.75	110	80-124	73-131	4	0-20	
Bromoform	50.00	54.93	110	54.20	108	73-127	64-136	1	0-20	
Bromomethane	50.00	30.22	60	28.07	56	50-150	33-167	7	0-26	
2-Butanone	50.00	50.58	101	50.53	101	60-126	49-137	0	0-20	
n-Butylbenzene	50.00	54.79	110	52.80	106	72-138	61-149	4	0-20	
sec-Butylbenzene	50.00	55.59	111	54.47	109	77-131	68-140	2	0-20	
tert-Butylbenzene	50.00	55.97	112	54.78	110	80-125	72-132	2	0-20	
Carbon Disulfide	50.00	51.95	104	49.94	100	50-150	33-167	4	0-22	
Carbon Tetrachloride	50.00	56.91	114	54.92	110	65-143	52-156	4	0-20	
Chlorobenzene	50.00	55.89	112	53.27	107	80-120	73-127	5	0-20	
Chloroethane	50.00	50.00	100	46.34	93	62-128	51-139	8	0-20	
Chloroform	50.00	55.44	111	52.62	105	80-120	73-127	5	0-20	
Chloromethane	50.00	30.19	60	28.16	56	43-133	28-148	7	0-20	
2-Chlorotoluene	50.00	57.11	114	54.29	109	80-121	73-128	5	0-20	
4-Chlorotoluene	50.00	55.94	112	54.04	108	80-120	73-127	3	0-20	
Dibromochloromethane	50.00	56.17	112	54.18	108	80-123	73-130	4	0-20	
1,2-Dibromo-3-Chloropropane	50.00	48.90	98	48.11	96	66-126	56-136	2	0-20	
1,2-Dibromoethane	50.00	57.33	115	55.44	111	80-120	73-127	3	0-20	
Dibromomethane	50.00	57.60	115	55.10	110	80-120	73-127	4	0-20	
1,2-Dichlorobenzene	50.00	54.31	109	52.82	106	80-120	73-127	3	0-20	
1,3-Dichlorobenzene	50.00	54.82	110	53.10	106	80-120	73-127	3	0-20	
1,4-Dichlorobenzene	50.00	53.72	107	51.82	104	80-120	73-127	4	0-20	
Dichlorodifluoromethane	50.00	39.56	79	39.50	79	50-150	33-167	0	0-30	
1,1-Dichloroethane	50.00	55.03	110	52.06	104	72-126	63-135	6	0-20	
1,2-Dichloroethane	50.00	53.74	107	51.53	103	76-120	69-127	4	0-20	
1,1-Dichloroethene	50.00	52.20	104	49.56	99	66-132	55-143	5	0-20	
c-1,2-Dichloroethene	50.00	54.44	109	51.38	103	78-120	71-127	6	0-20	
t-1,2-Dichloroethene	50.00	53.69	107	51.03	102	66-132	55-143	5	0-20	
1,2-Dichloropropane	50.00	56.33	113	53.74	107	80-120	73-127	5	0-20	
1,3-Dichloropropane	50.00	54.76	110	53.08	106	80-120	73-127	3	0-20	
2,2-Dichloropropane	50.00	50.03	100	45.54	91	50-150	33-167	9	0-20	
1,1-Dichloropropene	50.00	52.42	105	51.26	103	75-123	67-131	2	0-20	

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS/LCSD

ERM-WEST		Date Received:	03/28/18
1920 Main Street, Suite 300		Work Order:	18-03-2449
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
Project: Infineon / 0444392			Page 2 of 5

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
c-1,3-Dichloropropene	50.00	55.29	111	52.86	106	77-131	68-140	5	0-20	
t-1,3-Dichloropropene	50.00	53.13	106	50.90	102	76-136	66-146	4	0-20	
Ethylbenzene	50.00	58.10	116	55.36	111	80-120	73-127	5	0-20	
2-Hexanone	50.00	50.55	101	49.93	100	63-123	53-133	1	0-20	
Isopropylbenzene	50.00	56.47	113	54.13	108	80-128	72-136	4	0-20	
p-Isopropyltoluene	50.00	55.96	112	54.94	110	73-133	63-143	2	0-20	
Methylene Chloride	50.00	55.97	112	53.73	107	61-133	49-145	4	0-27	
4-Methyl-2-Pentanone	50.00	52.71	105	52.09	104	65-125	55-135	1	0-20	
Naphthalene	50.00	50.73	101	49.90	100	69-129	59-139	2	0-20	
n-Propylbenzene	50.00	58.17	116	55.25	110	80-128	72-136	5	0-20	
Styrene	50.00	59.25	118	56.49	113	80-126	72-134	5	0-20	
1,1,1,2-Tetrachloroethane	50.00	56.10	112	53.23	106	80-129	72-137	5	0-20	
1,1,2,2-Tetrachloroethane	50.00	55.01	110	53.69	107	74-122	66-130	2	0-20	
Tetrachloroethene	50.00	52.28	105	52.98	106	55-139	41-153	1	0-23	
Toluene	50.00	57.05	114	54.37	109	80-120	73-127	5	0-20	
1,2,3-Trichlorobenzene	50.00	51.76	104	50.45	101	72-132	62-142	3	0-20	
1,2,4-Trichlorobenzene	50.00	48.16	96	46.70	93	74-134	64-144	3	0-20	
1,1,1-Trichloroethane	50.00	52.19	104	49.79	100	76-124	68-132	5	0-20	
1,1,2-Trichloro-1,2,2-Trifluoroethane	50.00	52.61	105	51.82	104	54-150	38-166	2	0-30	
1,1,2-Trichloroethane	50.00	55.98	112	53.55	107	80-120	73-127	4	0-20	
Trichloroethene	50.00	56.25	113	53.80	108	79-121	72-128	4	0-20	
Trichlorofluoromethane	50.00	51.78	104	50.71	101	72-132	62-142	2	0-20	
1,2,3-Trichloropropane	50.00	54.75	109	52.96	106	75-123	67-131	3	0-20	
1,2,4-Trimethylbenzene	50.00	58.12	116	55.38	111	74-128	65-137	5	0-20	
1,3,5-Trimethylbenzene	50.00	57.63	115	54.80	110	77-131	68-140	5	0-20	
Vinyl Acetate	50.00	53.68	107	51.11	102	50-150	33-167	5	0-20	
Vinyl Chloride	50.00	46.41	93	44.05	88	63-129	52-140	5	0-20	
p/m-Xylene	100.0	117.3	117	111.7	112	80-122	73-129	5	0-20	
o-Xylene	50.00	58.68	117	55.81	112	80-128	72-136	5	0-20	
Methyl-t-Butyl Ether (MTBE)	50.00	48.85	98	47.48	95	69-123	60-132	3	0-20	
Tert-Butyl Alcohol (TBA)	250.0	269.8	108	269.7	108	80-124	73-131	0	0-20	
Diisopropyl Ether (DIPE)	50.00	53.75	108	51.71	103	79-121	72-128	4	0-20	
Ethyl-t-Butyl Ether (ETBE)	50.00	48.76	98	47.17	94	71-125	62-134	3	0-20	
Tert-Amyl-Methyl Ether (TAME)	50.00	49.01	98	47.84	96	70-124	61-133	2	0-20	
Ethanol	500.0	621.0	124	585.0	117	53-149	37-165	6	0-24	

Total number of LCS compounds: 71
Total number of ME compounds: 0

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS/LCSD

ERM-WEST	Date Received:	03/28/18
1920 Main Street, Suite 300	Work Order:	18-03-2449
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
Project: Infineon / 0444392		Page 3 of 5

Total number of ME compounds allowed: 4
LCS ME CL validation result: Pass

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS/LCSD

ERM-WEST		Date Received:	03/28/18
1920 Main Street, Suite 300		Work Order:	18-03-2449
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
Project: Infineon / 0444392			Page 4 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
095-01-025-29814	**LCS**	**Solid**	**GC/MS LL**	**03/29/18**	**03/29/18 12:15**	**180329L001**
095-01-025-29814	**LCSD**	**Solid**	**GC/MS LL**	**03/29/18**	**03/29/18 12:42**	**180329L001**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Benzene	50.00	50.81	102	49.00	98	80-120	73-127	4	0-20	
Carbon Tetrachloride	50.00	58.09	116	57.50	115	65-137	53-149	1	0-20	
Chlorobenzene	50.00	53.12	106	52.19	104	80-120	73-127	2	0-20	
1,2-Dibromoethane	50.00	53.96	108	54.20	108	80-120	73-127	0	0-20	
1,2-Dichlorobenzene	50.00	53.79	108	52.04	104	80-120	73-127	3	0-20	
1,2-Dichloroethane	50.00	51.72	103	50.47	101	80-120	73-127	2	0-20	
1,1-Dichloroethene	50.00	53.47	107	51.81	104	68-128	58-138	3	0-20	
Ethylbenzene	50.00	55.64	111	55.25	111	80-120	73-127	1	0-20	
Toluene	50.00	53.04	106	50.79	102	80-120	73-127	4	0-20	
Trichloroethene	50.00	56.20	112	53.71	107	80-120	73-127	5	0-20	
Vinyl Chloride	50.00	63.30	127	61.65	123	67-127	57-137	3	0-20	
p/m-Xylene	100.0	104.9	105	103.2	103	75-125	67-133	2	0-25	
o-Xylene	50.00	54.71	109	53.33	107	75-125	67-133	3	0-25	
Methyl-t-Butyl Ether (MTBE)	50.00	50.23	100	48.57	97	70-124	61-133	3	0-20	
Tert-Butyl Alcohol (TBA)	250.0	279.2	112	260.1	104	73-121	65-129	7	0-20	
Diisopropyl Ether (DIPE)	50.00	49.73	99	46.87	94	69-129	59-139	6	0-20	
Ethyl-t-Butyl Ether (ETBE)	50.00	51.76	104	49.26	99	70-124	61-133	5	0-20	
Tert-Amyl-Methyl Ether (TAME)	50.00	52.10	104	50.01	100	74-122	66-130	4	0-20	
Ethanol	500.0	528.6	106	507.8	102	51-135	37-149	4	0-27	

Total number of LCS compounds: 19
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS/LCSD

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392

Date Received: 03/28/18
Work Order: 18-03-2449
Preparation: EPA 5035
Method: EPA 8260B
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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
095-01-025-29812	**LCS**	**Solid**	**GC/MS GGG**	**03/28/18**	**03/28/18 15:24**	**180328L024**
095-01-025-29812	**LCSD**	**Solid**	**GC/MS GGG**	**03/28/18**	**03/28/18 15:52**	**180328L024**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Benzene	50.00	48.47	97	48.35	97	80-120	73-127	0	0-20	
Carbon Tetrachloride	50.00	41.89	84	42.18	84	65-137	53-149	1	0-20	
Chlorobenzene	50.00	49.73	99	49.10	98	80-120	73-127	1	0-20	
1,2-Dibromoethane	50.00	48.75	97	47.53	95	80-120	73-127	3	0-20	
1,2-Dichlorobenzene	50.00	49.48	99	49.67	99	80-120	73-127	0	0-20	
1,2-Dichloroethane	50.00	53.32	107	52.50	105	80-120	73-127	2	0-20	
1,1-Dichloroethene	50.00	52.14	104	52.75	105	68-128	58-138	1	0-20	
Ethylbenzene	50.00	51.06	102	51.69	103	80-120	73-127	1	0-20	
Toluene	50.00	49.42	99	49.48	99	80-120	73-127	0	0-20	
Trichloroethene	50.00	50.64	101	50.27	101	80-120	73-127	1	0-20	
Vinyl Chloride	50.00	75.92	152	71.31	143	67-127	57-137	6	0-20	X
p/m-Xylene	100.0	103.2	103	104.5	104	75-125	67-133	1	0-25	
o-Xylene	50.00	52.97	106	51.83	104	75-125	67-133	2	0-25	
Methyl-t-Butyl Ether (MTBE)	50.00	50.36	101	50.46	101	70-124	61-133	0	0-20	
Tert-Butyl Alcohol (TBA)	250.0	245.8	98	242.7	97	73-121	65-129	1	0-20	
Diisopropyl Ether (DIPE)	50.00	55.69	111	55.62	111	69-129	59-139	0	0-20	
Ethyl-t-Butyl Ether (ETBE)	50.00	51.11	102	51.76	104	70-124	61-133	1	0-20	
Tert-Amyl-Methyl Ether (TAME)	50.00	48.72	97	48.24	96	74-122	66-130	1	0-20	
Ethanol	500.0	489.6	98	489.5	98	51-135	37-149	0	0-27	

Total number of LCS compounds: 19
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

RPD: Relative Percent Difference. CL: Control Limits

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Sample Analysis Summary Report

Work Order: 18-03-2449 Page 1 of 1

Method	Extraction	Chemist ID	Instrument	Analytical Location
EPA 8260B	EPA 5035	867	GC/MS LL	2
EPA 8260B	EPA 5035	1126	GC/MS GGG	2
EPA 8260B	EPA 5030C	1126	GC/MS RR	2

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Glossary of Terms and Qualifiers

Work Order: 18-03-2449 Page 1 of 1

Qualifiers	Definition
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
CI	See case narrative.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.
	Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.
	Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.
	A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

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7440 Lincoln Way, Garden Grove, CA 92841-1427 • (714) 895-5494
For courier service / sample drop off information, contact us26_sales@eurofinsus.com or call us.

CHAIN-OF-CUSTODY RECORD

WO NO. / LAB USE ONLY: **18-03-2449**

Date 03/28/2018

Page 1 of 1

LABORATORY CLIENT: ERM

ADDRESS: 1920 Main Street - Suite 300

CITY: Irvine | STATE: CA | ZIP: 92614

TEL: 949-623-4700 | E-MAIL: See special Instructions:

CLIENT PROJECT NAME / NO.: INFINEON

PROJECT CONTACT: Maggie Tymkow

GLOBAL ID:

LOG CODE:

P.O. NO.: 0444392

LAB CONTACT OR QUOTE NO: Virendra Patel

SAMPLER(S): (PRINT) Manuel LEON

TURNAROUND TIME (Rush surcharges may apply to any TAT not "STANDARD"):

☐ SAME DAY ☒ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAYS ☐ STANDARD

EDD

☐ COELT EDF ☐ OTHER

SPECIAL INSTRUCTIONS:

—EQuiS—

Email to: maggie.TymKow@erm.com
Stewart.emHof@erm.com
Brad.Cross@erm.com
Tony.Parenteau@erm.com

REQUESTED ANALYSES
Please check box or fill in blank as needed.

LAB USE ONLY	SAMPLE ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	Unpreserved	Preserved	Field Filtered	☐ TPH(g) ☐ GRO	☐ TPH(d) ☐ DRO	TPH ☐ C6-C36 ☐ C6-C44	TPH ____	BTEX / MTBE ☐ 8260 ☐ ____	VOCs (8260)	Oxygenates (8260)	Prep (5035) ☐ En Core ☒ Terra Core	SVOCs (8270)	Pesticides (8081)	PCBs (8082)	PAHs ☐ 8270 ☐ 8270 SIM	T22 Metals ☐ 6010/747X ☐ 6020/747X	Cr(VI) ☐ 7196 ☐ 7199 ☐ 218.6				
1	B2-4-5	3/28/18	08:11	Soil	1 Kit									✓												
2	B2-4-12	3/28/18	09:14	Soil	1 Kit									✓												
3	B2-4-27	3/28/18	09:24	Soil	1 Kit									✓												
4	B2-4-55	3/28/18	09:58	Soil	1 Kit									✓												
5	B2-4-80	3/28/18	10	Soil	1 Kit									✓												
6	Trip BLK	—		Water	2									✓												

3/28/18 - 1300

Relinquished by: (Signature) — 3/28/18 — 1535

Received by: (Signature/Affiliation)

Date: 3/28/18 Time: 1535

Relinquished by: (Signature)

Received by: (Signature/Affiliation) Danny G

Date: 3/28/18 Time: 1840

Relinquished by: (Signature)

Received by: (Signature/Affiliation)

Date: Time:

2016-04-01-Revision

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WORK ORDER NUMBER: 18-03-2449

SAMPLE RECEIPT CHECKLIST

COOLER 1 OF 1

CLIENT: ERM

DATE: 03/28/2018

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)

Thermometer ID: SC6 (CF: +0.2°C); Temperature (w/o CF): 2.2 °C (w/ CF): 2.4 °C; ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____)

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling

☐ Sample(s) received at ambient temperature; placed on ice for transport by courier

Ambient Temperature: ☐ Air ☐ Filter Checked by: 1091

CUSTODY SEAL:

Cooler ☐ Present and Intact ☐ Present but Not Intact ☑ Not Present ☐ N/A Checked by: 1091

Sample(s) ☐ Present and Intact ☐ Present but Not Intact ☑ Not Present ☐ N/A Checked by: 1140

SAMPLE CONDITION:	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ Sampling date ☐ Sampling time ☐ Matrix ☐ Number of containers			
☐ No analysis requested ☐ Not relinquished ☐ No relinquished date ☐ No relinquished time			
Sampler's name indicated on COC	☑	☐	☐
Sample container label(s) consistent with COC	☐	☑	☐
Sample container(s) intact and in good condition	☐	☑	☐
Proper containers for analyses requested	☑	☐	☐
Sufficient volume/mass for analyses requested	☑	☐	☐
Samples received within holding time	☑	☐	☐
Aqueous samples for certain analyses received within 15-minute holding time			
☐ pH ☐ Residual Chlorine ☐ Dissolved Sulfide ☐ Dissolved Oxygen	☐	☐	☑
Proper preservation chemical(s) noted on COC and/or sample container	☑	☐	☐
Unpreserved aqueous sample(s) received for certain analyses			
☐ Volatile Organics ☐ Total Metals ☐ Dissolved Metals			
Acid/base preserved samples - pH within acceptable range	☐	☐	☑
Container(s) for certain analysis free of headspace	☑	☐	☐
☑ Volatile Organics ☐ Dissolved Gases (RSK-175) ☐ Dissolved Oxygen (SM 4500)			
☐ Carbon Dioxide (SM 4500) ☐ Ferrous Iron (SM 3500) ☐ Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE: (Trip Blank Lot Number: 180316A)

Aqueous: ☐ VOA ☑ VOA**h** ☐ VOA**na$_2$** ☐ 100PJ ☐ 100PJ**na$_2$** ☐ 125AGB ☐ 125AGB**h** ☐ 125AGB**p** ☐ 125PB ☐ 125PB**znna** (pH__9)

☐ 250AGB ☐ 250CGB ☐ 250CGB**s** (pH__2) ☐ 250PB ☐ 250PB**n** (pH__2) ☐ 500AGB ☐ 500AGJ ☐ 500AGJ**s** (pH__2) ☐ 500PB

☐ 1AGB ☐ 1AGB**na$_2$** ☐ 1AGB**s** (pH__2) ☐ 1AGB**s** (O&G) ☐ 1PB ☐ 1PB**na** (pH__12) ☐ _____ ☐ _____ ☐ _____

Solid: ☐ 4ozCGJ ☐ 8ozCGJ ☐ 16ozCGJ ☐ Sleeve (___) ☐ EnCores® (___) ☑ TerraCores® (3) ☑ 2ozPJ ☐ _____ ☐ _____

Air: ☐ Tedlar™ ☐ Canister ☐ Sorbent Tube ☐ PUF ☐ _____ **Other Matrix** (_____): ☐ _____ ☐ _____ ☐ _____

Container: **A** = Amber, **B** = Bottle, **C** = Clear, **E** = Envelope, **G** = Glass, **J** = Jar, **P** = Plastic, and **Z** = Ziploc/Resealable Bag

Preservative: **b** = buffered, **f** = filtered, **h** = HCl, **n** = HNO_3, **na** = NaOH, **na$_2$** = $Na_2S_2O_3$, **p** = H_3PO_4, Labeled/Checked by: 1140

s = H_2SO_4, **u** = ultra-pure, **x** = Na_2SO_3+$NaHSO_4.H_2O$, **znna** = Zn $(CH_3CO_2)_2$ + NaOH Reviewed by: 659

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WORK ORDER NUMBER: 18-03-2449

SAMPLE ANOMALY REPORT

DATE: 03 / 28 / 2018

SAMPLES, CONTAINERS, AND LABELS:

- ☐ Sample(s) NOT RECEIVED but listed on COC
- ☐ Sample(s) received but NOT LISTED on COC
- ☐ Holding time expired (list client or ECI sample ID and analysis)
- ☐ Insufficient sample amount for requested analysis (list analysis)
- ☐ Improper container(s) used (list analysis)
- ☐ Improper preservative used (list analysis)
- ☐ pH outside acceptable range (list analysis)
- ☐ No preservative noted on COC or label (list analysis and notify lab)
- ☐ Sample container(s) not labeled
- ☐ Client sample label(s) illegible (list container type and analysis)
- ☑ Client sample label(s) do not match COC (comment)
  - ☐ Project information
  - ☐ Client sample ID
  - ☑ Sampling date and/or time
  - ☐ Number of container(s)
  - ☐ Requested analysis
- ☐ Sample container(s) compromised (comment)
  - ☐ Broken
  - ☐ Water present in sample container
- ☐ Air sample container(s) compromised (comment)
  - ☐ Flat
  - ☐ Very low in volume
  - ☐ Leaking (not transferred; duplicate bag submitted)
  - ☐ Leaking (transferred into ECI Tedlar™ bags*)
  - ☐ Leaking (transferred into client's Tedlar™ bags*)

* Transferred at client's request.

Comments

* (-1) Received 1 of 3 terracores (Methanol) no preservative.

(-5) Collection time per label is 10:40

MISCELLANEOUS: (Describe)

* No preservative.

Comments

HEADSPACE:

(Containers with bubble > 6 mm or ¼ inch for volatile organic or dissolved gas analysis)

ECI Sample ID	ECI Container ID	Total Number**	ECI Sample ID	ECI Container ID	Total Number**

(Containers with bubble for other analysis)

ECI Sample ID	ECI Container ID	Total Number**	Requested Analysis

Comments: ______

Reported by: 619

Reviewed by: 1140

** Record the total number of containers (i.e., vials or bottles) for the affected sample.

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WORK ORDER NUMBER: 18-03-2568

The difference is service

AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: ERM-WEST

Client Project Name: Infineon / 0444392

Attention: Maggie Tymkow
1920 Main Street
Suite 300
Irvine, CA 92614-7279

Approved for release on 03/30/2018 by:
Virendra Patel
Project Manager

ResultLink

Email your PM

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Client Project Name: Infineon / 0444392
Work Order Number: 18-03-2568

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Work Order Narrative

Work Order: 18-03-2568 Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 03/29/18. They were assigned to Work Order 18-03-2568.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

DoD Projects:

The test results contained in this report are accredited under the laboratory's ISO/IEC 17025:2005 and DoD-ELAP accreditation issued by the ANSI-ASQ National Accreditation Board. Refer to certificate and scope of accreditation ADE-1864.

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Sample Summary

Client:	ERM-WEST 1920 Main Street, Suite 300 Irvine, CA 92614-7279	Work Order:	18-03-2568
		Project Name:	Infineon / 0444392
		PO Number:	
		Date/Time Received:	03/29/18 18:40
		Number of Containers:	22
Attn:	Maggie Tymkow		

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
B2-1-6	18-03-2568-1	03/29/18 11:05	4	Solid
B2-1-18	18-03-2568-2	03/29/18 11:20	4	Solid
B2-1-42	18-03-2568-3	03/29/18 11:40	4	Solid
B2-1-52	18-03-2568-4	03/29/18 11:49	4	Solid
B2-1-80	18-03-2568-5	03/29/18 12:22	4	Solid
Trip Blk	18-03-2568-6	03/29/18 00:00	2	Aqueous

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392

Date Received: 03/29/18
Work Order: 18-03-2568
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Trip Blk	**18-03-2568-6-A**	**03/29/18 00:00**	**Aqueous**	**GC/MS W**	**03/29/18**	**03/29/18 20:21**	**180329L032**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	20	1.00	
Benzene	ND	0.50	1.00	
Bromobenzene	ND	1.0	1.00	
Bromochloromethane	ND	1.0	1.00	
Bromodichloromethane	ND	1.0	1.00	
Bromoform	ND	1.0	1.00	
Bromomethane	ND	10	1.00	
2-Butanone	ND	10	1.00	
n-Butylbenzene	ND	1.0	1.00	
sec-Butylbenzene	ND	1.0	1.00	
tert-Butylbenzene	ND	1.0	1.00	
Carbon Disulfide	ND	10	1.00	
Carbon Tetrachloride	ND	0.50	1.00	
Chlorobenzene	ND	1.0	1.00	
Chloroethane	ND	5.0	1.00	
Chloroform	ND	1.0	1.00	
Chloromethane	ND	10	1.00	
2-Chlorotoluene	ND	1.0	1.00	
4-Chlorotoluene	ND	1.0	1.00	
Dibromochloromethane	ND	1.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.0	1.00	
1,2-Dibromoethane	ND	1.0	1.00	
Dibromomethane	ND	1.0	1.00	
1,2-Dichlorobenzene	ND	1.0	1.00	
1,3-Dichlorobenzene	ND	1.0	1.00	
1,4-Dichlorobenzene	ND	1.0	1.00	
Dichlorodifluoromethane	ND	1.0	1.00	
1,1-Dichloroethane	ND	1.0	1.00	
1,2-Dichloroethane	ND	0.50	1.00	
1,1-Dichloroethene	ND	1.0	1.00	
c-1,2-Dichloroethene	ND	1.0	1.00	
t-1,2-Dichloroethene	ND	1.0	1.00	
1,2-Dichloropropane	ND	1.0	1.00	
1,3-Dichloropropane	ND	1.0	1.00	
2,2-Dichloropropane	ND	1.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392

Date Received: 03/29/18
Work Order: 18-03-2568
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	1.0	1.00	
c-1,3-Dichloropropene	ND	0.50	1.00	
t-1,3-Dichloropropene	ND	0.50	1.00	
Ethylbenzene	ND	1.0	1.00	
2-Hexanone	ND	10	1.00	
Isopropylbenzene	ND	1.0	1.00	
p-Isopropyltoluene	ND	1.0	1.00	
Methylene Chloride	ND	10	1.00	
4-Methyl-2-Pentanone	ND	10	1.00	
Naphthalene	ND	10	1.00	
n-Propylbenzene	ND	1.0	1.00	
Styrene	ND	1.0	1.00	
1,1,1,2-Tetrachloroethane	ND	1.0	1.00	
1,1,2,2-Tetrachloroethane	ND	1.0	1.00	
Tetrachloroethene	ND	1.0	1.00	
Toluene	ND	1.0	1.00	
1,2,3-Trichlorobenzene	ND	1.0	1.00	
1,2,4-Trichlorobenzene	ND	1.0	1.00	
1,1,1-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.00	
1,1,2-Trichloroethane	ND	1.0	1.00	
Trichloroethene	ND	1.0	1.00	
Trichlorofluoromethane	ND	10	1.00	
1,2,3-Trichloropropane	ND	5.0	1.00	
1,2,4-Trimethylbenzene	ND	1.0	1.00	
1,3,5-Trimethylbenzene	ND	1.0	1.00	
Vinyl Acetate	ND	10	1.00	
Vinyl Chloride	ND	0.50	1.00	
p/m-Xylene	ND	1.0	1.00	
o-Xylene	ND	1.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	1.0	1.00	
Tert-Butyl Alcohol (TBA)	ND	10	1.00	
Diisopropyl Ether (DIPE)	ND	2.0	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	2.0	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	2.0	1.00	
Ethanol	ND	100	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	95	77-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/29/18
1920 Main Street, Suite 300		Work Order:	18-03-2568
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/L
Project: Infineon / 0444392			Page 3 of 6

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	108	80-128	
1,2-Dichloroethane-d4	104	80-129	
Toluene-d8	99	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Date Received: 03/29/18
Work Order: 18-03-2568
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

Project: Infineon / 0444392

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-14-001-25529**	**N/A**	**Aqueous**	**GC/MS W**	**03/29/18**	**03/29/18 17:59**	**180329L032**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	20	1.00	
Benzene	ND	0.50	1.00	
Bromobenzene	ND	1.0	1.00	
Bromochloromethane	ND	1.0	1.00	
Bromodichloromethane	ND	1.0	1.00	
Bromoform	ND	1.0	1.00	
Bromomethane	ND	10	1.00	
2-Butanone	ND	10	1.00	
n-Butylbenzene	ND	1.0	1.00	
sec-Butylbenzene	ND	1.0	1.00	
tert-Butylbenzene	ND	1.0	1.00	
Carbon Disulfide	ND	10	1.00	
Carbon Tetrachloride	ND	0.50	1.00	
Chlorobenzene	ND	1.0	1.00	
Chloroethane	ND	5.0	1.00	
Chloroform	ND	1.0	1.00	
Chloromethane	ND	10	1.00	
2-Chlorotoluene	ND	1.0	1.00	
4-Chlorotoluene	ND	1.0	1.00	
Dibromochloromethane	ND	1.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.0	1.00	
1,2-Dibromoethane	ND	1.0	1.00	
Dibromomethane	ND	1.0	1.00	
1,2-Dichlorobenzene	ND	1.0	1.00	
1,3-Dichlorobenzene	ND	1.0	1.00	
1,4-Dichlorobenzene	ND	1.0	1.00	
Dichlorodifluoromethane	ND	1.0	1.00	
1,1-Dichloroethane	ND	1.0	1.00	
1,2-Dichloroethane	ND	0.50	1.00	
1,1-Dichloroethene	ND	1.0	1.00	
c-1,2-Dichloroethene	ND	1.0	1.00	
t-1,2-Dichloroethene	ND	1.0	1.00	
1,2-Dichloropropane	ND	1.0	1.00	
1,3-Dichloropropane	ND	1.0	1.00	
2,2-Dichloropropane	ND	1.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/29/18
1920 Main Street, Suite 300	Work Order:	18-03-2568
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	ug/L
Project: Infineon / 0444392		Page 5 of 6

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	1.0	1.00	
c-1,3-Dichloropropene	ND	0.50	1.00	
t-1,3-Dichloropropene	ND	0.50	1.00	
Ethylbenzene	ND	1.0	1.00	
2-Hexanone	ND	10	1.00	
Isopropylbenzene	ND	1.0	1.00	
p-Isopropyltoluene	ND	1.0	1.00	
Methylene Chloride	ND	10	1.00	
4-Methyl-2-Pentanone	ND	10	1.00	
Naphthalene	ND	10	1.00	
n-Propylbenzene	ND	1.0	1.00	
Styrene	ND	1.0	1.00	
1,1,1,2-Tetrachloroethane	ND	1.0	1.00	
1,1,2,2-Tetrachloroethane	ND	1.0	1.00	
Tetrachloroethene	ND	1.0	1.00	
Toluene	ND	1.0	1.00	
1,2,3-Trichlorobenzene	ND	1.0	1.00	
1,2,4-Trichlorobenzene	ND	1.0	1.00	
1,1,1-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.00	
1,1,2-Trichloroethane	ND	1.0	1.00	
Trichloroethene	ND	1.0	1.00	
Trichlorofluoromethane	ND	10	1.00	
1,2,3-Trichloropropane	ND	5.0	1.00	
1,2,4-Trimethylbenzene	ND	1.0	1.00	
1,3,5-Trimethylbenzene	ND	1.0	1.00	
Vinyl Acetate	ND	10	1.00	
Vinyl Chloride	ND	0.50	1.00	
p/m-Xylene	ND	1.0	1.00	
o-Xylene	ND	1.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	1.0	1.00	
Tert-Butyl Alcohol (TBA)	ND	10	1.00	
Diisopropyl Ether (DIPE)	ND	2.0	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	2.0	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	2.0	1.00	
Ethanol	ND	100	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	97	77-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/29/18
1920 Main Street, Suite 300		Work Order:	18-03-2568
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/L
Project: Infineon / 0444392			Page 6 of 6

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	105	80-128	
1,2-Dichloroethane-d4	104	80-129	
Toluene-d8	100	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392

Date Received: 03/29/18
Work Order: 18-03-2568
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B2-1-6	**18-03-2568-1-C**	**03/29/18 11:05**	**Solid**	**GC/MS OO**	**03/29/18**	**03/29/18 20:56**	**180329L030**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	48	1.00	
Benzene	ND	0.96	1.00	
Bromobenzene	ND	0.96	1.00	
Bromochloromethane	ND	1.9	1.00	
Bromodichloromethane	ND	0.96	1.00	
Bromoform	ND	4.8	1.00	
Bromomethane	ND	19	1.00	
2-Butanone	ND	19	1.00	
n-Butylbenzene	ND	0.96	1.00	
sec-Butylbenzene	ND	0.96	1.00	
tert-Butylbenzene	ND	0.96	1.00	
Carbon Disulfide	ND	9.6	1.00	
Carbon Tetrachloride	ND	0.96	1.00	
Chlorobenzene	ND	0.96	1.00	
Chloroethane	ND	1.9	1.00	
Chloroform	ND	0.96	1.00	
Chloromethane	ND	19	1.00	
2-Chlorotoluene	ND	0.96	1.00	
4-Chlorotoluene	ND	0.96	1.00	
Dibromochloromethane	ND	1.9	1.00	
1,2-Dibromo-3-Chloropropane	ND	4.8	1.00	
1,2-Dibromoethane	ND	0.96	1.00	
Dibromomethane	ND	0.96	1.00	
1,2-Dichlorobenzene	ND	0.96	1.00	
1,3-Dichlorobenzene	ND	0.96	1.00	
1,4-Dichlorobenzene	ND	0.96	1.00	
Dichlorodifluoromethane	ND	1.9	1.00	
1,1-Dichloroethane	ND	0.96	1.00	
1,2-Dichloroethane	ND	0.96	1.00	
1,1-Dichloroethene	ND	0.96	1.00	
c-1,2-Dichloroethene	ND	0.96	1.00	
t-1,2-Dichloroethene	ND	0.96	1.00	
1,2-Dichloropropane	ND	0.96	1.00	
1,3-Dichloropropane	ND	0.96	1.00	
2,2-Dichloropropane	ND	4.8	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/29/18
1920 Main Street, Suite 300		Work Order:	18-03-2568
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392			Page 2 of 21

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	1.9	1.00	
c-1,3-Dichloropropene	ND	0.96	1.00	
t-1,3-Dichloropropene	ND	1.9	1.00	
Ethylbenzene	ND	0.96	1.00	
2-Hexanone	ND	19	1.00	
Isopropylbenzene	ND	0.96	1.00	
p-Isopropyltoluene	ND	0.96	1.00	
Methylene Chloride	ND	9.6	1.00	
4-Methyl-2-Pentanone	ND	19	1.00	
Naphthalene	ND	9.6	1.00	
n-Propylbenzene	ND	1.9	1.00	
Styrene	ND	0.96	1.00	
1,1,1,2-Tetrachloroethane	ND	0.96	1.00	
1,1,2,2-Tetrachloroethane	ND	1.9	1.00	
Tetrachloroethene	ND	0.96	1.00	
Toluene	ND	0.96	1.00	
1,2,3-Trichlorobenzene	ND	1.9	1.00	
1,2,4-Trichlorobenzene	ND	1.9	1.00	
1,1,1-Trichloroethane	ND	0.96	1.00	
1,1,2-Trichloroethane	ND	0.96	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	9.6	1.00	
Trichloroethene	ND	1.9	1.00	
Trichlorofluoromethane	ND	9.6	1.00	
1,2,3-Trichloropropane	ND	1.9	1.00	
1,2,4-Trimethylbenzene	ND	1.9	1.00	
1,3,5-Trimethylbenzene	ND	1.9	1.00	
Vinyl Acetate	ND	9.6	1.00	
Vinyl Chloride	ND	0.96	1.00	
p/m-Xylene	ND	1.9	1.00	
o-Xylene	ND	0.96	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	1.9	1.00	
Tert-Butyl Alcohol (TBA)	ND	19	1.00	
Diisopropyl Ether (DIPE)	ND	0.96	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.96	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.96	1.00	
Ethanol	ND	480	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	99	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/29/18
1920 Main Street, Suite 300		Work Order:	18-03-2568
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392			Page 3 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	101	79-133	
1,2-Dichloroethane-d4	111	71-155	
Toluene-d8	100	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392

Date Received: 03/29/18
Work Order: 18-03-2568
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B2-1-18	**18-03-2568-2-C**	**03/29/18 11:20**	**Solid**	**GC/MS OO**	**03/29/18**	**03/29/18 21:25**	**180329L030**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	48	1.00	
Benzene	ND	0.96	1.00	
Bromobenzene	ND	0.96	1.00	
Bromochloromethane	ND	1.9	1.00	
Bromodichloromethane	ND	0.96	1.00	
Bromoform	ND	4.8	1.00	
Bromomethane	ND	19	1.00	
2-Butanone	ND	19	1.00	
n-Butylbenzene	ND	0.96	1.00	
sec-Butylbenzene	ND	0.96	1.00	
tert-Butylbenzene	ND	0.96	1.00	
Carbon Disulfide	ND	9.6	1.00	
Carbon Tetrachloride	ND	0.96	1.00	
Chlorobenzene	ND	0.96	1.00	
Chloroethane	ND	1.9	1.00	
Chloroform	ND	0.96	1.00	
Chloromethane	ND	19	1.00	
2-Chlorotoluene	ND	0.96	1.00	
4-Chlorotoluene	ND	0.96	1.00	
Dibromochloromethane	ND	1.9	1.00	
1,2-Dibromo-3-Chloropropane	ND	4.8	1.00	
1,2-Dibromoethane	ND	0.96	1.00	
Dibromomethane	ND	0.96	1.00	
1,2-Dichlorobenzene	ND	0.96	1.00	
1,3-Dichlorobenzene	ND	0.96	1.00	
1,4-Dichlorobenzene	ND	0.96	1.00	
Dichlorodifluoromethane	ND	1.9	1.00	
1,1-Dichloroethane	ND	0.96	1.00	
1,2-Dichloroethane	ND	0.96	1.00	
1,1-Dichloroethene	ND	0.96	1.00	
c-1,2-Dichloroethene	ND	0.96	1.00	
t-1,2-Dichloroethene	ND	0.96	1.00	
1,2-Dichloropropane	ND	0.96	1.00	
1,3-Dichloropropane	ND	0.96	1.00	
2,2-Dichloropropane	ND	4.8	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/29/18
1920 Main Street, Suite 300		Work Order:	18-03-2568
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392			Page 5 of 21

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	1.9	1.00	
c-1,3-Dichloropropene	ND	0.96	1.00	
t-1,3-Dichloropropene	ND	1.9	1.00	
Ethylbenzene	ND	0.96	1.00	
2-Hexanone	ND	19	1.00	
Isopropylbenzene	ND	0.96	1.00	
p-Isopropyltoluene	ND	0.96	1.00	
Methylene Chloride	ND	9.6	1.00	
4-Methyl-2-Pentanone	ND	19	1.00	
Naphthalene	ND	9.6	1.00	
n-Propylbenzene	ND	1.9	1.00	
Styrene	ND	0.96	1.00	
1,1,1,2-Tetrachloroethane	ND	0.96	1.00	
1,1,2,2-Tetrachloroethane	ND	1.9	1.00	
Tetrachloroethene	ND	0.96	1.00	
Toluene	ND	0.96	1.00	
1,2,3-Trichlorobenzene	ND	1.9	1.00	
1,2,4-Trichlorobenzene	ND	1.9	1.00	
1,1,1-Trichloroethane	ND	0.96	1.00	
1,1,2-Trichloroethane	ND	0.96	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	9.6	1.00	
Trichloroethene	ND	1.9	1.00	
Trichlorofluoromethane	ND	9.6	1.00	
1,2,3-Trichloropropane	ND	1.9	1.00	
1,2,4-Trimethylbenzene	ND	1.9	1.00	
1,3,5-Trimethylbenzene	ND	1.9	1.00	
Vinyl Acetate	ND	9.6	1.00	
Vinyl Chloride	ND	0.96	1.00	
p/m-Xylene	ND	1.9	1.00	
o-Xylene	ND	0.96	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	1.9	1.00	
Tert-Butyl Alcohol (TBA)	ND	19	1.00	
Diisopropyl Ether (DIPE)	ND	0.96	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.96	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.96	1.00	
Ethanol	ND	480	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	99	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/29/18
1920 Main Street, Suite 300		Work Order:	18-03-2568
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392			Page 6 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	100	79-133	
1,2-Dichloroethane-d4	111	71-155	
Toluene-d8	100	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392

Date Received: 03/29/18
Work Order: 18-03-2568
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B2-1-42	**18-03-2568-3-C**	**03/29/18 11:40**	**Solid**	**GC/MS OO**	**03/29/18**	**03/29/18 21:54**	**180329L030**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	54	1.00	
Benzene	ND	1.1	1.00	
Bromobenzene	ND	1.1	1.00	
Bromochloromethane	ND	2.2	1.00	
Bromodichloromethane	ND	1.1	1.00	
Bromoform	ND	5.4	1.00	
Bromomethane	ND	22	1.00	
2-Butanone	ND	22	1.00	
n-Butylbenzene	ND	1.1	1.00	
sec-Butylbenzene	ND	1.1	1.00	
tert-Butylbenzene	ND	1.1	1.00	
Carbon Disulfide	ND	11	1.00	
Carbon Tetrachloride	ND	1.1	1.00	
Chlorobenzene	ND	1.1	1.00	
Chloroethane	ND	2.2	1.00	
Chloroform	ND	1.1	1.00	
Chloromethane	ND	22	1.00	
2-Chlorotoluene	ND	1.1	1.00	
4-Chlorotoluene	ND	1.1	1.00	
Dibromochloromethane	ND	2.2	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.4	1.00	
1,2-Dibromoethane	ND	1.1	1.00	
Dibromomethane	ND	1.1	1.00	
1,2-Dichlorobenzene	ND	1.1	1.00	
1,3-Dichlorobenzene	ND	1.1	1.00	
1,4-Dichlorobenzene	ND	1.1	1.00	
Dichlorodifluoromethane	ND	2.2	1.00	
1,1-Dichloroethane	ND	1.1	1.00	
1,2-Dichloroethane	ND	1.1	1.00	
1,1-Dichloroethene	ND	1.1	1.00	
c-1,2-Dichloroethene	ND	1.1	1.00	
t-1,2-Dichloroethene	ND	1.1	1.00	
1,2-Dichloropropane	ND	1.1	1.00	
1,3-Dichloropropane	ND	1.1	1.00	
2,2-Dichloropropane	ND	5.4	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/29/18
1920 Main Street, Suite 300	Work Order:	18-03-2568
Irvine, CA 92614-7279	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: Infineon / 0444392		Page 8 of 21

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.2	1.00	
c-1,3-Dichloropropene	ND	1.1	1.00	
t-1,3-Dichloropropene	ND	2.2	1.00	
Ethylbenzene	ND	1.1	1.00	
2-Hexanone	ND	22	1.00	
Isopropylbenzene	ND	1.1	1.00	
p-Isopropyltoluene	ND	1.1	1.00	
Methylene Chloride	ND	11	1.00	
4-Methyl-2-Pentanone	ND	22	1.00	
Naphthalene	ND	11	1.00	
n-Propylbenzene	ND	2.2	1.00	
Styrene	ND	1.1	1.00	
1,1,1,2-Tetrachloroethane	ND	1.1	1.00	
1,1,2,2-Tetrachloroethane	ND	2.2	1.00	
Tetrachloroethene	ND	1.1	1.00	
Toluene	ND	1.1	1.00	
1,2,3-Trichlorobenzene	ND	2.2	1.00	
1,2,4-Trichlorobenzene	ND	2.2	1.00	
1,1,1-Trichloroethane	ND	1.1	1.00	
1,1,2-Trichloroethane	ND	1.1	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	11	1.00	
Trichloroethene	ND	2.2	1.00	
Trichlorofluoromethane	ND	11	1.00	
1,2,3-Trichloropropane	ND	2.2	1.00	
1,2,4-Trimethylbenzene	ND	2.2	1.00	
1,3,5-Trimethylbenzene	ND	2.2	1.00	
Vinyl Acetate	ND	11	1.00	
Vinyl Chloride	ND	1.1	1.00	
p/m-Xylene	ND	2.2	1.00	
o-Xylene	ND	1.1	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.2	1.00	
Tert-Butyl Alcohol (TBA)	ND	22	1.00	
Diisopropyl Ether (DIPE)	ND	1.1	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.1	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.1	1.00	
Ethanol	ND	540	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	99	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST	Date Received:	03/29/18
1920 Main Street, Suite 300	Work Order:	18-03-2568
Irvine, CA 92614-7279	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: Infineon / 0444392		Page 9 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	99	79-133	
1,2-Dichloroethane-d4	109	71-155	
Toluene-d8	100	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392

Date Received: 03/29/18
Work Order: 18-03-2568
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B2-1-52	**18-03-2568-4-C**	**03/29/18 11:49**	**Solid**	**GC/MS OO**	**03/29/18**	**03/29/18 22:22**	**180329L030**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	56	1.00	
Benzene	ND	1.1	1.00	
Bromobenzene	ND	1.1	1.00	
Bromochloromethane	ND	2.2	1.00	
Bromodichloromethane	ND	1.1	1.00	
Bromoform	ND	5.6	1.00	
Bromomethane	ND	22	1.00	
2-Butanone	ND	22	1.00	
n-Butylbenzene	ND	1.1	1.00	
sec-Butylbenzene	ND	1.1	1.00	
tert-Butylbenzene	ND	1.1	1.00	
Carbon Disulfide	ND	11	1.00	
Carbon Tetrachloride	ND	1.1	1.00	
Chlorobenzene	ND	1.1	1.00	
Chloroethane	ND	2.2	1.00	
Chloroform	ND	1.1	1.00	
Chloromethane	ND	22	1.00	
2-Chlorotoluene	ND	1.1	1.00	
4-Chlorotoluene	ND	1.1	1.00	
Dibromochloromethane	ND	2.2	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.6	1.00	
1,2-Dibromoethane	ND	1.1	1.00	
Dibromomethane	ND	1.1	1.00	
1,2-Dichlorobenzene	ND	1.1	1.00	
1,3-Dichlorobenzene	ND	1.1	1.00	
1,4-Dichlorobenzene	ND	1.1	1.00	
Dichlorodifluoromethane	ND	2.2	1.00	
1,1-Dichloroethane	ND	1.1	1.00	
1,2-Dichloroethane	ND	1.1	1.00	
1,1-Dichloroethene	ND	1.1	1.00	
c-1,2-Dichloroethene	ND	1.1	1.00	
t-1,2-Dichloroethene	ND	1.1	1.00	
1,2-Dichloropropane	ND	1.1	1.00	
1,3-Dichloropropane	ND	1.1	1.00	
2,2-Dichloropropane	ND	5.6	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/29/18
1920 Main Street, Suite 300		Work Order:	18-03-2568
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392			Page 11 of 21

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.2	1.00	
c-1,3-Dichloropropene	ND	1.1	1.00	
t-1,3-Dichloropropene	ND	2.2	1.00	
Ethylbenzene	ND	1.1	1.00	
2-Hexanone	ND	22	1.00	
Isopropylbenzene	ND	1.1	1.00	
p-Isopropyltoluene	ND	1.1	1.00	
Methylene Chloride	ND	11	1.00	
4-Methyl-2-Pentanone	ND	22	1.00	
Naphthalene	ND	11	1.00	
n-Propylbenzene	ND	2.2	1.00	
Styrene	ND	1.1	1.00	
1,1,1,2-Tetrachloroethane	ND	1.1	1.00	
1,1,2,2-Tetrachloroethane	ND	2.2	1.00	
Tetrachloroethene	ND	1.1	1.00	
Toluene	ND	1.1	1.00	
1,2,3-Trichlorobenzene	ND	2.2	1.00	
1,2,4-Trichlorobenzene	ND	2.2	1.00	
1,1,1-Trichloroethane	ND	1.1	1.00	
1,1,2-Trichloroethane	ND	1.1	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	11	1.00	
Trichloroethene	ND	2.2	1.00	
Trichlorofluoromethane	ND	11	1.00	
1,2,3-Trichloropropane	ND	2.2	1.00	
1,2,4-Trimethylbenzene	ND	2.2	1.00	
1,3,5-Trimethylbenzene	ND	2.2	1.00	
Vinyl Acetate	ND	11	1.00	
Vinyl Chloride	ND	1.1	1.00	
p/m-Xylene	ND	2.2	1.00	
o-Xylene	ND	1.1	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.2	1.00	
Tert-Butyl Alcohol (TBA)	ND	22	1.00	
Diisopropyl Ether (DIPE)	ND	1.1	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.1	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.1	1.00	
Ethanol	ND	560	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	98	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/29/18
1920 Main Street, Suite 300		Work Order:	18-03-2568
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392			Page 12 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	100	79-133	
1,2-Dichloroethane-d4	111	71-155	
Toluene-d8	100	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392

Date Received: 03/29/18
Work Order: 18-03-2568
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B2-1-80	**18-03-2568-5-D**	**03/29/18 12:22**	**Solid**	**GC/MS LL**	**03/29/18**	**03/30/18 12:03**	**180330L003**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	55	1.00	
Benzene	ND	1.1	1.00	
Bromobenzene	ND	1.1	1.00	
Bromochloromethane	ND	2.2	1.00	
Bromodichloromethane	ND	1.1	1.00	
Bromoform	ND	5.5	1.00	
Bromomethane	ND	22	1.00	
2-Butanone	ND	22	1.00	
n-Butylbenzene	ND	1.1	1.00	
sec-Butylbenzene	ND	1.1	1.00	
tert-Butylbenzene	ND	1.1	1.00	
Carbon Disulfide	ND	11	1.00	
Carbon Tetrachloride	ND	1.1	1.00	
Chlorobenzene	ND	1.1	1.00	
Chloroethane	ND	2.2	1.00	
Chloroform	ND	1.1	1.00	
Chloromethane	ND	22	1.00	
2-Chlorotoluene	ND	1.1	1.00	
4-Chlorotoluene	ND	1.1	1.00	
Dibromochloromethane	ND	2.2	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.5	1.00	
1,2-Dibromoethane	ND	1.1	1.00	
Dibromomethane	ND	1.1	1.00	
1,2-Dichlorobenzene	ND	1.1	1.00	
1,3-Dichlorobenzene	ND	1.1	1.00	
1,4-Dichlorobenzene	ND	1.1	1.00	
Dichlorodifluoromethane	ND	2.2	1.00	
1,1-Dichloroethane	ND	1.1	1.00	
1,2-Dichloroethane	ND	1.1	1.00	
1,1-Dichloroethene	ND	1.1	1.00	
c-1,2-Dichloroethene	ND	1.1	1.00	
t-1,2-Dichloroethene	ND	1.1	1.00	
1,2-Dichloropropane	ND	1.1	1.00	
1,3-Dichloropropane	ND	1.1	1.00	
2,2-Dichloropropane	ND	5.5	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/29/18
1920 Main Street, Suite 300		Work Order:	18-03-2568
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392			Page 14 of 21

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.2	1.00	
c-1,3-Dichloropropene	ND	1.1	1.00	
t-1,3-Dichloropropene	ND	2.2	1.00	
Ethylbenzene	ND	1.1	1.00	
2-Hexanone	ND	22	1.00	
Isopropylbenzene	ND	1.1	1.00	
p-Isopropyltoluene	ND	1.1	1.00	
Methylene Chloride	ND	11	1.00	
4-Methyl-2-Pentanone	ND	22	1.00	
Naphthalene	ND	11	1.00	
n-Propylbenzene	ND	2.2	1.00	
Styrene	ND	1.1	1.00	
1,1,1,2-Tetrachloroethane	ND	1.1	1.00	
1,1,2,2-Tetrachloroethane	ND	2.2	1.00	
Tetrachloroethene	ND	1.1	1.00	
Toluene	ND	1.1	1.00	
1,2,3-Trichlorobenzene	ND	2.2	1.00	
1,2,4-Trichlorobenzene	ND	2.2	1.00	
1,1,1-Trichloroethane	ND	1.1	1.00	
1,1,2-Trichloroethane	ND	1.1	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	11	1.00	
Trichloroethene	ND	2.2	1.00	
Trichlorofluoromethane	ND	11	1.00	
1,2,3-Trichloropropane	ND	2.2	1.00	
1,2,4-Trimethylbenzene	ND	2.2	1.00	
1,3,5-Trimethylbenzene	ND	2.2	1.00	
Vinyl Acetate	ND	11	1.00	
Vinyl Chloride	ND	1.1	1.00	
p/m-Xylene	ND	2.2	1.00	
o-Xylene	ND	1.1	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.2	1.00	
Tert-Butyl Alcohol (TBA)	ND	22	1.00	
Diisopropyl Ether (DIPE)	ND	1.1	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.1	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.1	1.00	
Ethanol	ND	550	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	123	80-120	2,7

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/29/18
1920 Main Street, Suite 300		Work Order:	18-03-2568
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392			Page 15 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	93	79-133	
1,2-Dichloroethane-d4	84	71-155	
Toluene-d8	99	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392

Date Received: 03/29/18
Work Order: 18-03-2568
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**095-01-025-29816**	**N/A**	**Solid**	**GC/MS OO**	**03/29/18**	**03/29/18 17:29**	**180329L030**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	50	1.00	
Benzene	ND	1.0	1.00	
Bromobenzene	ND	1.0	1.00	
Bromochloromethane	ND	2.0	1.00	
Bromodichloromethane	ND	1.0	1.00	
Bromoform	ND	5.0	1.00	
Bromomethane	ND	20	1.00	
2-Butanone	ND	20	1.00	
n-Butylbenzene	ND	1.0	1.00	
sec-Butylbenzene	ND	1.0	1.00	
tert-Butylbenzene	ND	1.0	1.00	
Carbon Disulfide	ND	10	1.00	
Carbon Tetrachloride	ND	1.0	1.00	
Chlorobenzene	ND	1.0	1.00	
Chloroethane	ND	2.0	1.00	
Chloroform	ND	1.0	1.00	
Chloromethane	ND	20	1.00	
2-Chlorotoluene	ND	1.0	1.00	
4-Chlorotoluene	ND	1.0	1.00	
Dibromochloromethane	ND	2.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.0	1.00	
1,2-Dibromoethane	ND	1.0	1.00	
Dibromomethane	ND	1.0	1.00	
1,2-Dichlorobenzene	ND	1.0	1.00	
1,3-Dichlorobenzene	ND	1.0	1.00	
1,4-Dichlorobenzene	ND	1.0	1.00	
Dichlorodifluoromethane	ND	2.0	1.00	
1,1-Dichloroethane	ND	1.0	1.00	
1,2-Dichloroethane	ND	1.0	1.00	
1,1-Dichloroethene	ND	1.0	1.00	
c-1,2-Dichloroethene	ND	1.0	1.00	
t-1,2-Dichloroethene	ND	1.0	1.00	
1,2-Dichloropropane	ND	1.0	1.00	
1,3-Dichloropropane	ND	1.0	1.00	
2,2-Dichloropropane	ND	5.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/29/18
1920 Main Street, Suite 300		Work Order:	18-03-2568
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392			Page 17 of 21

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.0	1.00	
c-1,3-Dichloropropene	ND	1.0	1.00	
t-1,3-Dichloropropene	ND	2.0	1.00	
Ethylbenzene	ND	1.0	1.00	
2-Hexanone	ND	20	1.00	
Isopropylbenzene	ND	1.0	1.00	
p-Isopropyltoluene	ND	1.0	1.00	
Methylene Chloride	ND	10	1.00	
4-Methyl-2-Pentanone	ND	20	1.00	
Naphthalene	ND	10	1.00	
n-Propylbenzene	ND	2.0	1.00	
Styrene	ND	1.0	1.00	
1,1,1,2-Tetrachloroethane	ND	1.0	1.00	
1,1,2,2-Tetrachloroethane	ND	2.0	1.00	
Tetrachloroethene	ND	1.0	1.00	
Toluene	ND	1.0	1.00	
1,2,3-Trichlorobenzene	ND	2.0	1.00	
1,2,4-Trichlorobenzene	ND	2.0	1.00	
1,1,1-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.00	
Trichloroethene	ND	2.0	1.00	
Trichlorofluoromethane	ND	10	1.00	
1,2,3-Trichloropropane	ND	2.0	1.00	
1,2,4-Trimethylbenzene	ND	2.0	1.00	
1,3,5-Trimethylbenzene	ND	2.0	1.00	
Vinyl Acetate	ND	10	1.00	
Vinyl Chloride	ND	1.0	1.00	
p/m-Xylene	ND	2.0	1.00	
o-Xylene	ND	1.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.0	1.00	
Tert-Butyl Alcohol (TBA)	ND	20	1.00	
Diisopropyl Ether (DIPE)	ND	1.0	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.0	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.0	1.00	
Ethanol	ND	500	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	97	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/29/18
1920 Main Street, Suite 300		Work Order:	18-03-2568
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392			Page 18 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	98	79-133	
1,2-Dichloroethane-d4	99	71-155	
Toluene-d8	99	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392

Date Received: 03/29/18
Work Order: 18-03-2568
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**095-01-025-29817**	**N/A**	**Solid**	**GC/MS LL**	**03/30/18**	**03/30/18 10:41**	**180330L003**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	50	1.00	
Benzene	ND	1.0	1.00	
Bromobenzene	ND	1.0	1.00	
Bromochloromethane	ND	2.0	1.00	
Bromodichloromethane	ND	1.0	1.00	
Bromoform	ND	5.0	1.00	
Bromomethane	ND	20	1.00	
2-Butanone	ND	20	1.00	
n-Butylbenzene	ND	1.0	1.00	
sec-Butylbenzene	ND	1.0	1.00	
tert-Butylbenzene	ND	1.0	1.00	
Carbon Disulfide	ND	10	1.00	
Carbon Tetrachloride	ND	1.0	1.00	
Chlorobenzene	ND	1.0	1.00	
Chloroethane	ND	2.0	1.00	
Chloroform	ND	1.0	1.00	
Chloromethane	ND	20	1.00	
2-Chlorotoluene	ND	1.0	1.00	
4-Chlorotoluene	ND	1.0	1.00	
Dibromochloromethane	ND	2.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.0	1.00	
1,2-Dibromoethane	ND	1.0	1.00	
Dibromomethane	ND	1.0	1.00	
1,2-Dichlorobenzene	ND	1.0	1.00	
1,3-Dichlorobenzene	ND	1.0	1.00	
1,4-Dichlorobenzene	ND	1.0	1.00	
Dichlorodifluoromethane	ND	2.0	1.00	
1,1-Dichloroethane	ND	1.0	1.00	
1,2-Dichloroethane	ND	1.0	1.00	
1,1-Dichloroethene	ND	1.0	1.00	
c-1,2-Dichloroethene	ND	1.0	1.00	
t-1,2-Dichloroethene	ND	1.0	1.00	
1,2-Dichloropropane	ND	1.0	1.00	
1,3-Dichloropropane	ND	1.0	1.00	
2,2-Dichloropropane	ND	5.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/29/18
1920 Main Street, Suite 300		Work Order:	18-03-2568
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392			Page 20 of 21

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.0	1.00	
c-1,3-Dichloropropene	ND	1.0	1.00	
t-1,3-Dichloropropene	ND	2.0	1.00	
Ethylbenzene	ND	1.0	1.00	
2-Hexanone	ND	20	1.00	
Isopropylbenzene	ND	1.0	1.00	
p-Isopropyltoluene	ND	1.0	1.00	
Methylene Chloride	ND	10	1.00	
4-Methyl-2-Pentanone	ND	20	1.00	
Naphthalene	ND	10	1.00	
n-Propylbenzene	ND	2.0	1.00	
Styrene	ND	1.0	1.00	
1,1,1,2-Tetrachloroethane	ND	1.0	1.00	
1,1,2,2-Tetrachloroethane	ND	2.0	1.00	
Tetrachloroethene	ND	1.0	1.00	
Toluene	ND	1.0	1.00	
1,2,3-Trichlorobenzene	ND	2.0	1.00	
1,2,4-Trichlorobenzene	ND	2.0	1.00	
1,1,1-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.00	
Trichloroethene	ND	2.0	1.00	
Trichlorofluoromethane	ND	10	1.00	
1,2,3-Trichloropropane	ND	2.0	1.00	
1,2,4-Trimethylbenzene	ND	2.0	1.00	
1,3,5-Trimethylbenzene	ND	2.0	1.00	
Vinyl Acetate	ND	10	1.00	
Vinyl Chloride	ND	1.0	1.00	
p/m-Xylene	ND	2.0	1.00	
o-Xylene	ND	1.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.0	1.00	
Tert-Butyl Alcohol (TBA)	ND	20	1.00	
Diisopropyl Ether (DIPE)	ND	1.0	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.0	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.0	1.00	
Ethanol	ND	500	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	100	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ERM-WEST		Date Received:	03/29/18
1920 Main Street, Suite 300		Work Order:	18-03-2568
Irvine, CA 92614-7279		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Infineon / 0444392			Page 21 of 21

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	93	79-133	
1,2-Dichloroethane-d4	80	71-155	
Toluene-d8	99	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Quality Control - LCS/LCSD

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392

Date Received: 03/29/18
Work Order: 18-03-2568
Preparation: EPA 5030C
Method: EPA 8260B

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-14-001-25529	**LCS**	**Aqueous**	**GC/MS W**	**03/29/18**	**03/29/18 16:32**	**180329L032**
099-14-001-25529	**LCSD**	**Aqueous**	**GC/MS W**	**03/29/18**	**03/29/18 17:01**	**180329L032**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Acetone	50.00	46.27	93	49.40	99	53-137	39-151	7	0-21	
Benzene	50.00	56.80	114	55.91	112	79-121	72-128	2	0-20	
Bromobenzene	50.00	56.39	113	55.82	112	80-120	73-127	1	0-20	
Bromochloromethane	50.00	73.06	146	69.55	139	80-122	73-129	5	0-20	X
Bromodichloromethane	50.00	60.72	121	59.08	118	80-124	73-131	3	0-20	
Bromoform	50.00	52.29	105	50.39	101	73-127	64-136	4	0-20	
Bromomethane	50.00	43.83	88	41.31	83	50-150	33-167	6	0-26	
2-Butanone	50.00	54.51	109	55.47	111	60-126	49-137	2	0-20	
n-Butylbenzene	50.00	55.47	111	52.92	106	72-138	61-149	5	0-20	
sec-Butylbenzene	50.00	54.64	109	52.02	104	77-131	68-140	5	0-20	
tert-Butylbenzene	50.00	55.63	111	55.02	110	80-125	72-132	1	0-20	
Carbon Disulfide	50.00	50.21	100	49.78	100	50-150	33-167	1	0-22	
Carbon Tetrachloride	50.00	51.28	103	50.15	100	65-143	52-156	2	0-20	
Chlorobenzene	50.00	56.82	114	55.06	110	80-120	73-127	3	0-20	
Chloroethane	50.00	51.16	102	49.32	99	62-128	51-139	4	0-20	
Chloroform	50.00	59.57	119	57.21	114	80-120	73-127	4	0-20	
Chloromethane	50.00	51.76	104	47.74	95	43-133	28-148	8	0-20	
2-Chlorotoluene	50.00	55.86	112	53.84	108	80-121	73-128	4	0-20	
4-Chlorotoluene	50.00	55.96	112	53.07	106	80-120	73-127	5	0-20	
Dibromochloromethane	50.00	60.04	120	58.38	117	80-123	73-130	3	0-20	
1,2-Dibromo-3-Chloropropane	50.00	57.89	116	57.83	116	66-126	56-136	0	0-20	
1,2-Dibromoethane	50.00	54.78	110	55.60	111	80-120	73-127	1	0-20	
Dibromomethane	50.00	57.32	115	56.10	112	80-120	73-127	2	0-20	
1,2-Dichlorobenzene	50.00	55.81	112	54.74	109	80-120	73-127	2	0-20	
1,3-Dichlorobenzene	50.00	56.41	113	55.79	112	80-120	73-127	1	0-20	
1,4-Dichlorobenzene	50.00	55.57	111	53.48	107	80-120	73-127	4	0-20	
Dichlorodifluoromethane	50.00	53.27	107	50.02	100	50-150	33-167	6	0-30	
1,1-Dichloroethane	50.00	58.56	117	55.88	112	72-126	63-135	5	0-20	
1,2-Dichloroethane	50.00	55.36	111	55.37	111	76-120	69-127	0	0-20	
1,1-Dichloroethene	50.00	46.89	94	45.71	91	66-132	55-143	3	0-20	
c-1,2-Dichloroethene	50.00	59.51	119	57.44	115	78-120	71-127	4	0-20	
t-1,2-Dichloroethene	50.00	56.70	113	51.90	104	66-132	55-143	9	0-20	
1,2-Dichloropropane	50.00	58.52	117	56.86	114	80-120	73-127	3	0-20	
1,3-Dichloropropane	50.00	56.78	114	54.22	108	80-120	73-127	5	0-20	
2,2-Dichloropropane	50.00	54.13	108	50.94	102	50-150	33-167	6	0-20	
1,1-Dichloropropene	50.00	55.87	112	53.97	108	75-123	67-131	3	0-20	

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS/LCSD

ERM-WEST		Date Received:	03/29/18
1920 Main Street, Suite 300		Work Order:	18-03-2568
Irvine, CA 92614-7279		Preparation:	EPA 5030C
		Method:	EPA 8260B
Project: Infineon / 0444392			Page 2 of 5

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
c-1,3-Dichloropropene	50.00	60.66	121	56.61	113	77-131	68-140	7	0-20	
t-1,3-Dichloropropene	50.00	51.52	103	48.57	97	76-136	66-146	6	0-20	
Ethylbenzene	50.00	56.14	112	54.38	109	80-120	73-127	3	0-20	
2-Hexanone	50.00	52.92	106	52.49	105	63-123	53-133	1	0-20	
Isopropylbenzene	50.00	55.70	111	54.11	108	80-128	72-136	3	0-20	
p-Isopropyltoluene	50.00	53.54	107	52.90	106	73-133	63-143	1	0-20	
Methylene Chloride	50.00	58.60	117	50.68	101	61-133	49-145	14	0-27	
4-Methyl-2-Pentanone	50.00	57.59	115	55.82	112	65-125	55-135	3	0-20	
Naphthalene	50.00	56.51	113	55.72	111	69-129	59-139	1	0-20	
n-Propylbenzene	50.00	54.45	109	52.62	105	80-128	72-136	3	0-20	
Styrene	50.00	57.44	115	55.92	112	80-126	72-134	3	0-20	
1,1,1,2-Tetrachloroethane	50.00	58.81	118	56.52	113	80-129	72-137	4	0-20	
1,1,2,2-Tetrachloroethane	50.00	54.49	109	53.80	108	74-122	66-130	1	0-20	
Tetrachloroethene	50.00	48.33	97	48.78	98	55-139	41-153	1	0-23	
Toluene	50.00	57.73	115	56.41	113	80-120	73-127	2	0-20	
1,2,3-Trichlorobenzene	50.00	57.24	114	55.61	111	72-132	62-142	3	0-20	
1,2,4-Trichlorobenzene	50.00	57.89	116	55.22	110	74-134	64-144	5	0-20	
1,1,1-Trichloroethane	50.00	58.50	117	55.27	111	76-124	68-132	6	0-20	
1,1,2-Trichloro-1,2,2-Trifluoroethane	50.00	46.73	93	43.72	87	54-150	38-166	7	0-30	
1,1,2-Trichloroethane	50.00	54.69	109	53.54	107	80-120	73-127	2	0-20	
Trichloroethene	50.00	57.78	116	54.67	109	79-121	72-128	6	0-20	
Trichlorofluoromethane	50.00	45.50	91	43.73	87	72-132	62-142	4	0-20	
1,2,3-Trichloropropane	50.00	52.54	105	50.63	101	75-123	67-131	4	0-20	
1,2,4-Trimethylbenzene	50.00	55.89	112	54.02	108	74-128	65-137	3	0-20	
1,3,5-Trimethylbenzene	50.00	55.96	112	54.64	109	77-131	68-140	2	0-20	
Vinyl Acetate	50.00	66.04	132	60.86	122	50-150	33-167	8	0-20	
Vinyl Chloride	50.00	47.65	95	46.30	93	63-129	52-140	3	0-20	
p/m-Xylene	100.0	113.3	113	109.2	109	80-122	73-129	4	0-20	
o-Xylene	50.00	59.23	118	57.15	114	80-128	72-136	4	0-20	
Methyl-t-Butyl Ether (MTBE)	50.00	52.51	105	51.26	103	69-123	60-132	2	0-20	
Tert-Butyl Alcohol (TBA)	250.0	264.0	106	260.7	104	80-124	73-131	1	0-20	
Diisopropyl Ether (DIPE)	50.00	56.00	112	53.99	108	79-121	72-128	4	0-20	
Ethyl-t-Butyl Ether (ETBE)	50.00	52.35	105	50.14	100	71-125	62-134	4	0-20	
Tert-Amyl-Methyl Ether (TAME)	50.00	53.10	106	51.41	103	70-124	61-133	3	0-20	
Ethanol	500.0	476.1	95	493.3	99	53-149	37-165	4	0-24	

Total number of LCS compounds: 71
Total number of ME compounds: 0

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS/LCSD

ERM-WEST	Date Received:	03/29/18
1920 Main Street, Suite 300	Work Order:	18-03-2568
Irvine, CA 92614-7279	Preparation:	EPA 5030C
	Method:	EPA 8260B
Project: Infineon / 0444392		Page 3 of 5

Total number of ME compounds allowed: 4
LCS ME CL validation result: Pass

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS/LCSD

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392

Date Received: 03/29/18
Work Order: 18-03-2568
Preparation: EPA 5035
Method: EPA 8260B

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
095-01-025-29817	**LCS**	**Solid**	**GC/MS LL**	**03/30/18**	**03/30/18 09:47**	**180330L003**
095-01-025-29817	**LCSD**	**Solid**	**GC/MS LL**	**03/30/18**	**03/30/18 10:14**	**180330L003**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Benzene	50.00	48.68	97	48.43	97	80-120	73-127	1	0-20	
Carbon Tetrachloride	50.00	54.54	109	51.05	102	65-137	53-149	7	0-20	
Chlorobenzene	50.00	50.66	101	50.39	101	80-120	73-127	1	0-20	
1,2-Dibromoethane	50.00	51.10	102	52.57	105	80-120	73-127	3	0-20	
1,2-Dichlorobenzene	50.00	51.50	103	51.05	102	80-120	73-127	1	0-20	
1,2-Dichloroethane	50.00	44.97	90	44.90	90	80-120	73-127	0	0-20	
1,1-Dichloroethene	50.00	51.01	102	48.61	97	68-128	58-138	5	0-20	
Ethylbenzene	50.00	52.57	105	51.10	102	80-120	73-127	3	0-20	
Toluene	50.00	51.03	102	48.89	98	80-120	73-127	4	0-20	
Trichloroethene	50.00	52.57	105	51.04	102	80-120	73-127	3	0-20	
Vinyl Chloride	50.00	65.85	132	62.37	125	67-127	57-137	5	0-20	ME
p/m-Xylene	100.0	97.28	97	94.79	95	75-125	67-133	3	0-25	
o-Xylene	50.00	50.24	100	48.90	98	75-125	67-133	3	0-25	
Methyl-t-Butyl Ether (MTBE)	50.00	48.15	96	48.02	96	70-124	61-133	0	0-20	
Tert-Butyl Alcohol (TBA)	250.0	248.4	99	251.9	101	73-121	65-129	1	0-20	
Diisopropyl Ether (DIPE)	50.00	47.64	95	47.46	95	69-129	59-139	0	0-20	
Ethyl-t-Butyl Ether (ETBE)	50.00	49.52	99	49.70	99	70-124	61-133	0	0-20	
Tert-Amyl-Methyl Ether (TAME)	50.00	49.69	99	50.01	100	74-122	66-130	1	0-20	
Ethanol	500.0	553.0	111	513.4	103	51-135	37-149	7	0-27	

Total number of LCS compounds: 19
Total number of ME compounds: 1
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS/LCSD

ERM-WEST
1920 Main Street, Suite 300
Irvine, CA 92614-7279

Project: Infineon / 0444392

Date Received: 03/29/18
Work Order: 18-03-2568
Preparation: EPA 5035
Method: EPA 8260B

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
095-01-025-29816	**LCS**	**Solid**	**GC/MS OO**	**03/29/18**	**03/29/18 15:50**	**180329L030**
095-01-025-29816	**LCSD**	**Solid**	**GC/MS OO**	**03/29/18**	**03/29/18 16:19**	**180329L030**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Benzene	50.00	46.77	94	44.11	88	80-120	73-127	6	0-20	
Carbon Tetrachloride	50.00	46.52	93	44.85	90	65-137	53-149	4	0-20	
Chlorobenzene	50.00	48.51	97	45.32	91	80-120	73-127	7	0-20	
1,2-Dibromoethane	50.00	50.12	100	47.78	96	80-120	73-127	5	0-20	
1,2-Dichlorobenzene	50.00	47.50	95	45.41	91	80-120	73-127	5	0-20	
1,2-Dichloroethane	50.00	48.00	96	45.69	91	80-120	73-127	5	0-20	
1,1-Dichloroethene	50.00	48.83	98	45.85	92	68-128	58-138	6	0-20	
Ethylbenzene	50.00	49.18	98	45.82	92	80-120	73-127	7	0-20	
Toluene	50.00	48.44	97	45.62	91	80-120	73-127	6	0-20	
Trichloroethene	50.00	50.23	100	46.01	92	80-120	73-127	9	0-20	
Vinyl Chloride	50.00	52.11	104	52.91	106	67-127	57-137	2	0-20	
p/m-Xylene	100.0	96.19	96	89.25	89	75-125	67-133	7	0-25	
o-Xylene	50.00	48.71	97	45.57	91	75-125	67-133	7	0-25	
Methyl-t-Butyl Ether (MTBE)	50.00	44.47	89	42.93	86	70-124	61-133	4	0-20	
Tert-Butyl Alcohol (TBA)	250.0	226.2	90	221.1	88	73-121	65-129	2	0-20	
Diisopropyl Ether (DIPE)	50.00	47.77	96	45.06	90	69-129	59-139	6	0-20	
Ethyl-t-Butyl Ether (ETBE)	50.00	49.72	99	46.77	94	70-124	61-133	6	0-20	
Tert-Amyl-Methyl Ether (TAME)	50.00	51.39	103	48.84	98	74-122	66-130	5	0-20	
Ethanol	500.0	529.0	106	482.4	96	51-135	37-149	9	0-27	

Total number of LCS compounds: 19
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

RPD: Relative Percent Difference. CL: Control Limits

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Sample Analysis Summary Report

Work Order: 18-03-2568 Page 1 of 1

Method	Extraction	Chemist ID	Instrument	Analytical Location
EPA 8260B	EPA 5035	867	GC/MS LL	2
EPA 8260B	EPA 5035	1055	GC/MS OO	2
EPA 8260B	EPA 5030C	823	GC/MS W	2

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Glossary of Terms and Qualifiers

Work Order: 18-03-2568 Page 1 of 1

Qualifiers	Definition
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
CI	See case narrative.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.
	Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.
	Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.
	A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

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7440 Lincoln Way, Garden Grove, CA 92841-1427 • (714) 895-5494
For courier service / sample drop off information, contact us26_sales@eurofinsus.com or call us.

WO NO. / LAB USE ONLY
18-03-2568

CHAIN-OF-CUSTODY RECORD

Date 3/29/2018
Page 1 of 1

LABORATORY CLIENT: ERM
ADDRESS: 1920 Main street - Suite 300
CITY: Irvin STATE: CA ZIP: 92614
TEL: 949-623-4700 E-MAIL: See special Instructions

CLIENT PROJECT NAME / NO.: IVFineon
P.O. NO.: 0444392
PROJECT CONTACT: Maggie Tymkow
LAB CONTACT OR QUOTE NO: Virendra Patel
GLOBAL ID:
LOG CODE:
SAMPLER(S): (PRINT) Manuel Leon

TURNAROUND TIME (Rush surcharges may apply to any TAT not "STANDARD"):
☐ SAME DAY ☒ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAYS ☐ STANDARD

EDD
☐ COELT EDF ☐ OTHER

SPECIAL INSTRUCTIONS:
—EQuis—
Email to: Maggie.Tymkow@erm.com
Stewart.Emhof@erm.com
Brad.Cross@erm.com
Tony.Parenteau@erm.com

REQUESTED ANALYSES
Please check box or fill in blank as needed.

LAB USE ONLY	SAMPLE ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	Unpreserved	Preserved	Field Filtered	☐ TPH(g) ☐ GRO	☐ TPH(d) ☐ DRO	TPH ☐ C6-C36 ☐ C6-C44	TPH ____	BTEX / MTBE ☐ 8260 ☐ ____	VOCs (8260)	Oxygenates (8260)	Prep (5035) ☐ En Core ☒ Terra Core	SVOCs (8270)	Pesticides (8081)	PCBs (8082)	PAHs ☐ 8270 ☐ 8270 SIM	T22 Metals ☐ 6010/747X ☐ 6020/747X	Cr(VI) ☐ 7196 ☐ 7199 ☐ 218.6				
1	B2-1-6	3/29/18	1105	Soil	1 Kit									✓												
2	B2-1-18	3/29/18	1120	Soil	1 Kit									✓												
3	B2-1-42	3/29/18	1140	Soil	1 Kit									✓												
4	B2-1-52	3/29/18	1149	Soil	1 Kit									✓												
5	B2-1-80	3/29/18	1222	Soil	1 Kit									✓												
6	Trip BlK	—	—	Water	2									✓												

3/29/18 — 1455

Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
[signature] 3/29/18 — 1507	[signature] EC	3/29/18	1507
[signature]	[signature]	3/29/18	1840

2016-04-01-Revision

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WORK ORDER NUMBER: 18-03-2568

SAMPLE RECEIPT CHECKLIST

COOLER 1 OF 1

CLIENT: ERM

DATE: 03/29/2018

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)

Thermometer ID: SC6 (CF: +0.2°C); Temperature (w/o CF): 2.7 °C (w/ CF): 2.9 °C; ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____)

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling

☐ Sample(s) received at ambient temperature; placed on ice for transport by courier

Ambient Temperature: ☐ Air ☐ Filter Checked by: 676

CUSTODY SEAL:

Cooler ☐ Present and Intact ☐ Present but Not Intact ☑ Not Present ☐ N/A Checked by: 676

Sample(s) ☐ Present and Intact ☐ Present but Not Intact ☑ Not Present ☐ N/A Checked by: 687

SAMPLE CONDITION:	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ Sampling date ☐ Sampling time ☐ Matrix ☐ Number of containers			
☐ No analysis requested ☐ Not relinquished ☐ No relinquished date ☐ No relinquished time			
Sampler's name indicated on COC	☑	☐	☐
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and in good condition	☐	☑	☐
Proper containers for analyses requested	☑	☐	☐
Sufficient volume/mass for analyses requested	☑	☐	☐
Samples received within holding time	☑	☐	☐
Aqueous samples for certain analyses received within 15-minute holding time			
☐ pH ☐ Residual Chlorine ☐ Dissolved Sulfide ☐ Dissolved Oxygen	☐	☐	☑
Proper preservation chemical(s) noted on COC and/or sample container	☑	☐	☐
Unpreserved aqueous sample(s) received for certain analyses			
☐ Volatile Organics ☐ Total Metals ☐ Dissolved Metals			
Acid/base preserved samples - pH within acceptable range	☐	☐	☑
Container(s) for certain analysis free of headspace	☑	☐	☐
☑ Volatile Organics ☐ Dissolved Gases (RSK-175) ☐ Dissolved Oxygen (SM 4500)			
☐ Carbon Dioxide (SM 4500) ☐ Ferrous Iron (SM 3500) ☐ Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE: (Trip Blank Lot Number: 180316A)

Aqueous: ☐ VOA ☑ VOA**h** ☐ VOA**na$_2$** ☐ 100PJ ☐ 100PJ**na$_2$** ☐ 125AGB ☐ 125AGB**h** ☐ 125AGB**p** ☐ 125PB ☐ 125PB**znna** (pH__9)

☐ 250AGB ☐ 250CGB ☐ 250CGB**s** (pH__2) ☐ 250PB ☐ 250PB**n** (pH__2) ☐ 500AGB ☐ 500AGJ ☐ 500AGJ**s** (pH__2) ☐ 500PB

☐ 1AGB ☐ 1AGB**na$_2$** ☐ 1AGB**s** (pH__2) ☐ 1AGB**s** (O&G) ☐ 1PB ☐ 1PB**na** (pH__12) ☐ _____ ☐ _____ ☐ _____

Solid: ☐ 4ozCGJ ☐ 8ozCGJ ☐ 16ozCGJ ☐ Sleeve (___) ☐ EnCores® (___) ☑ TerraCores® (3) ☑ 2oz RI ☐ _____ ☐ _____

Air: ☐ Tedlar™ ☐ Canister ☐ Sorbent Tube ☐ PUF ☐ _____ **Other Matrix** (_____): ☐ _____ ☐ _____ ☐ _____

Container: **A** = Amber, **B** = Bottle, **C** = Clear, **E** = Envelope, **G** = Glass, **J** = Jar, **P** = Plastic, and **Z** = Ziploc/Resealable Bag

Preservative: **b** = buffered, **f** = filtered, **h** = HCl, **n** = HNO_3, **na** = NaOH, **na$_2$** = $Na_2S_2O_3$, **p** = H_3PO_4, Labeled/Checked by: 687

s = H_2SO_4, **u** = ultra-pure, **x** = Na_2SO_3+$NaHSO_4.H_2O$, **znna** = Zn $(CH_3CO_2)_2$ + NaOH Reviewed by: 728

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WORK ORDER NUMBER: 18-03-2568

SAMPLE ANOMALY REPORT

DATE: 03 / 29 / 2018

SAMPLES, CONTAINERS, AND LABELS:

- ☐ Sample(s) NOT RECEIVED but listed on COC
- ☐ Sample(s) received but NOT LISTED on COC
- ☐ Holding time expired (list client or ECI sample ID and analysis)
- ☐ Insufficient sample amount for requested analysis (list analysis)
- ☐ Improper container(s) used (list analysis)
- ☐ Improper preservative used (list analysis)
- ☐ pH outside acceptable range (list analysis)
- ☐ No preservative noted on COC or label (list analysis and notify lab)
- ☐ Sample container(s) not labeled
- ☐ Client sample label(s) illegible (list container type and analysis)
- ☐ Client sample label(s) do not match COC (comment)
  - ☐ Project information
  - ☐ Client sample ID
  - ☐ Sampling date and/or time
  - ☐ Number of container(s)
  - ☐ Requested analysis
- ☑ Sample container(s) compromised (comment)
  - ☑ Broken
  - ☐ Water present in sample container
- ☐ Air sample container(s) compromised (comment)
  - ☐ Flat
  - ☐ Very low in volume
  - ☐ Leaking (not transferred; duplicate bag submitted)
  - ☐ Leaking (transferred into ECI Tedlar™ bags*)
  - ☐ Leaking (transferred into client's Tedlar™ bags*)

* Transferred at client's request.

Comments

(-6) 1 of 2 Trip-Blank received broken.

MISCELLANEOUS: (Describe)

Comments

HEADSPACE:

(Containers with bubble > 6 mm or ¼ inch for volatile organic or dissolved gas analysis)

ECI Sample ID	ECI Container ID	Total Number**	ECI Sample ID	ECI Container ID	Total Number**

(Containers with bubble for other analysis)

ECI Sample ID	ECI Container ID	Total Number**	Requested Analysis

Comments: _____

** Record the total number of containers (i.e., vials or bottles) for the affected sample.

Reported by: _____

Reviewed by: _____

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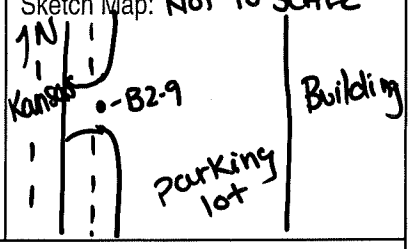
APPENDIX J SOIL BORING LOGS - ERM 2019 SUBSURFACE SOIL INVESTIGATION - FORMER RAILROAD TRACKS - BLOCK 2

ENVIRONMENTAL RESOURCES MANAGEMENT
1920 Main Street, Suite 300
Irvine, CA 92614
949-623-4700 Fax 949-623-4711

Log of Borehole: B2-9

Project Name:	Infineon
Project Number:	0477647.009
Location:	1521 E. Grand Ave., El Segundo, CA
Logged by:	R Kolenko
Reviewed by:	
Date Started:	9/5/19
Date Borehole Completed:	9/5/19
Borehole Diam.:	
Date Well Completed:	N/A
Drilling Company:	AIS - (American Integrated Services)
Driller (Crew):	—
Drilling Method/Equipment:	Hand Auger
Disposition of Soil Cuttings:	Backfilled into hole
Sampling Method:	Grab Sample
Hammer Weight:	N/A
Drop Height:	N/A
Ground Elevation:	N/A
TOC Elevation:	N/A
Easting:	N/A
Northing:	N/A
Borehole Total Depth:	2 ft.
Well Total Depth:	N/A
DTW (initial):	N/A
DTW (static):	N/A
Well ID:	
Well Diameter:	N/A
Casing Mtrl:	
Screen Type:	No well
Filter Pack Size:	installed
Vault Type:	
Lock No.:	

Sketch Map: NOT TO SCALE



Notes:

Depth (in.)	Samples: Time	Blow Counts	Sample Interval	Sample ID	OVA Reading (ppm) [PID/FID]	USCS Code	SOIL TYPE (IN CAPS): sample Description / Drilling Notes [in brackets]	Well Construction Details
							~4 in. of asphalt above soil	
0							silty SAND w/ medium grains, loose, dry, no odor or staining - 10YR 5/3 (brown)	
6								
12							tough gravel layer ~1-2 in. thick	
18							SAND, coarse grains, moist, no staining or odor - 7.5YR 5/6 (yellowish brown)	
24							Borehole terminated @ 24 in / 2 ft.	
							Borehole backfilled w/ soil and capped w/ cold patch	

RK
9/5/19

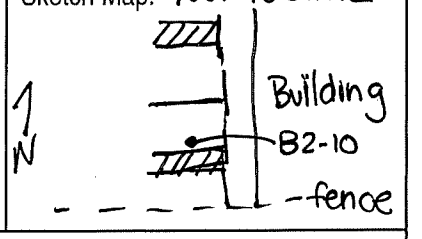
ENVIRONMENTAL RESOURCES MANAGEMENT
1920 Main Street, Suite 300
Irvine, CA 92614
949-623-4700 Fax 949-623-4711

Log of Borehole: B2-10

Project Name:	Infineon
Project Number:	0477647.009
Location:	1521 E. Grand Ave, El Segundo, CA
Logged by:	R. Kolenko
Reviewed by:	
Date Started:	9/5/19
Date Borehole Completed:	9/5/19
Borehole Diam.:	
Date Well Completed:	N/A
Drilling Company:	AIS (American Integrated Services)
Driller (Crew):	—
Drilling Method/Equipment:	Hand Auger
Disposition of Soil Cuttings:	Backfilled into hole
Sampling Method:	Grab sample
Hammer Weight:	N/A
Drop Height:	N/A
Ground Elevation:	N/A
TOC Elevation:	N/A
Easting:	N/A
Northing:	N/A
Borehole Total Depth:	2 ft.
Well Total Depth:	N/A
DTW (initial):	N/A
DTW (static):	N/A

Well ID:
Well Diameter:
Casing Mtrl: N/A
Screen Type: No well
Filter Pack Size:
Vault Type: installed
Lock No.:

Sketch Map: NOT TO SCALE



Notes:

Depth (in feet)	Samples: Time	Samples: Blow Counts	Samples: Sample Interval	Samples: Sample ID	OVA Reading (ppm) [PID/FID]	USCS Code	SOIL TYPE (IN CAPS): sample Description / Drilling Notes [in brackets]	Well Construction Details
							~4 in. of asphalt above soil	
0							silty SAND, dry, loose, no staining or odor medium grain sand - 10YR 6/2 (light brownish gray	
6							color change to 10YR 5/3 (brown)	
12							~~Color change~~ RK tough gravel layer ~1-2 in. thick	
18							SAND, coarse grain, clumpy, moist, no staining or odor - 7.5YR 5/6 (yellowish brown)	
24								

Borehole terminated @ 24 in. / 2 ft.

Borehole backfilled w/ soil and capped w/ cold patch

RK 9/5/19

APPENDIX K LABORATORY REPORT - ERM 2019 SUBSURFACE SOIL INVESTIGATION - FORMER RAILROAD TRACKS - BLOCK 2

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

Eurofins TestAmerica, Irvine
17461 Derian Ave
Suite 100
Irvine, CA 92614-5817
Tel: (949)261-1022

Laboratory Job ID: 440-249454-1
Laboratory Sample Delivery Group: 1521 E. Grand Ave.
Client Project/Site: Infineon

For:
Environmental Resources Management Inc
1920 Main Street
Suite 300
Irvine, California 92614

Attn: Maggie Tymkow

Authorized for release by:
9/11/2019 1:38:46 PM

Danielle Roberts, Senior Project Manager
(949)260-3249
danielle.roberts@testamericainc.com

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Chain of Custody 17
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Sample Summary

Client: Environmental Resources Management Inc
Project/Site: Infineon

Job ID: 440-249454-1
SDG: 1521 E. Grand Ave.

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
440-249454-1	B2-9-0	Solid	09/05/19 08:00	09/05/19 10:55	
440-249454-2	B2-9-6	Solid	09/05/19 08:03	09/05/19 10:55	
440-249454-5	B2-10-0	Solid	09/05/19 08:40	09/05/19 10:55	
440-249454-6	B2-10-6	Solid	09/05/19 08:45	09/05/19 10:55	

Job ID: 440-249454-1

Laboratory: Eurofins TestAmerica, Irvine

Narrative

Job Narrative
440-249454-1

Comments
No additional comments.

Receipt
The samples were received on 9/5/2019 10:55 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 5.9º C.

Receipt Exceptions

B2-9-0 (440-249454-1), B2-9-6 (440-249454-2), B2-9-12 (440-249454-3), B2-9-24 (440-249454-4), B2-10-0 (440-249454-5), B2-10-6 (440-249454-6), B2-10-12 (440-249454-7) and B2-10-24 (440-249454-8) All the times are switched on the containers. The times for B-9 are switched with B-10. Logged in as per Chain of Custody.

Metals
Method(s) 6020: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision of Antimony for preparation batch 440-567384 and analytical batch 440-567560 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) was within acceptance limits.

Method(s) 6020: The matrix spike / matrix spike duplicate (MS/MSD) recoveries of Barium, Molybdenum, Selenium, Thallium, Vanadium and Zinc for preparation batch 440-567384 and analytical batch 440-567560 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) 7471A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for Mercury were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Environmental Resources Management Inc
Project/Site: Infineon

Job ID: 440-249454-1
SDG: 1521 E. Grand Ave.

Client Sample ID: B2-9-0 — Lab Sample ID: 440-249454-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	2.7		0.50	0.25	mg/Kg	20		6020	Total/NA
Barium	75	F1	0.50	0.25	mg/Kg	20		6020	Total/NA
Beryllium	0.23	J	0.30	0.15	mg/Kg	20		6020	Total/NA
Cadmium	0.65		0.50	0.25	mg/Kg	20		6020	Total/NA
Chromium	11		1.0	0.50	mg/Kg	20		6020	Total/NA
Cobalt	3.4		0.50	0.21	mg/Kg	20		6020	Total/NA
Copper	8.5		1.0	0.50	mg/Kg	20		6020	Total/NA
Lead	7.6		0.50	0.25	mg/Kg	20		6020	Total/NA
Molybdenum	0.62	J F1	1.0	0.50	mg/Kg	20		6020	Total/NA
Nickel	8.2		1.0	0.50	mg/Kg	20		6020	Total/NA
Selenium	0.63	J F1	1.0	0.20	mg/Kg	20		6020	Total/NA
Vanadium	20	F1	1.0	0.50	mg/Kg	20		6020	Total/NA
Zinc	28	F1	10	5.0	mg/Kg	20		6020	Total/NA
Mercury	0.020		0.020	0.012	mg/Kg	1		7471A	Total/NA

Client Sample ID: B2-9-6 — Lab Sample ID: 440-249454-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Antimony	0.42	J	1.0	0.27	mg/Kg	20		6020	Total/NA
Arsenic	4.4		0.51	0.25	mg/Kg	20		6020	Total/NA
Barium	52		0.51	0.25	mg/Kg	20		6020	Total/NA
Beryllium	0.22	J	0.30	0.15	mg/Kg	20		6020	Total/NA
Cadmium	2.4		0.51	0.25	mg/Kg	20		6020	Total/NA
Chromium	16		1.0	0.51	mg/Kg	20		6020	Total/NA
Cobalt	3.8		0.51	0.21	mg/Kg	20		6020	Total/NA
Copper	11		1.0	0.51	mg/Kg	20		6020	Total/NA
Lead	18		0.51	0.25	mg/Kg	20		6020	Total/NA
Molybdenum	0.68	J	1.0	0.51	mg/Kg	20		6020	Total/NA
Nickel	8.7		1.0	0.51	mg/Kg	20		6020	Total/NA
Selenium	0.61	J	1.0	0.20	mg/Kg	20		6020	Total/NA
Vanadium	24		1.0	0.51	mg/Kg	20		6020	Total/NA
Zinc	44		10	5.1	mg/Kg	20		6020	Total/NA
Mercury	0.050		0.020	0.012	mg/Kg	1		7471A	Total/NA

Client Sample ID: B2-10-0 — Lab Sample ID: 440-249454-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Antimony	0.44	J	1.0	0.27	mg/Kg	20		6020	Total/NA
Arsenic	4.3		0.50	0.25	mg/Kg	20		6020	Total/NA
Barium	96		0.50	0.25	mg/Kg	20		6020	Total/NA
Beryllium	0.36		0.30	0.15	mg/Kg	20		6020	Total/NA
Cadmium	0.65		0.50	0.25	mg/Kg	20		6020	Total/NA
Chromium	13		1.0	0.50	mg/Kg	20		6020	Total/NA
Cobalt	4.4		0.50	0.21	mg/Kg	20		6020	Total/NA
Copper	19		1.0	0.50	mg/Kg	20		6020	Total/NA
Lead	24		0.50	0.25	mg/Kg	20		6020	Total/NA
Molybdenum	0.71	J	1.0	0.50	mg/Kg	20		6020	Total/NA
Nickel	11		1.0	0.50	mg/Kg	20		6020	Total/NA
Selenium	0.45	J	1.0	0.20	mg/Kg	20		6020	Total/NA
Vanadium	26		1.0	0.50	mg/Kg	20		6020	Total/NA
Zinc	66		10	5.0	mg/Kg	20		6020	Total/NA
Mercury	0.043		0.020	0.012	mg/Kg	1		7471A	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Environmental Resources Management Inc
Project/Site: Infineon

Job ID: 440-249454-1
SDG: 1521 E. Grand Ave.

Client Sample ID: B2-10-6

Lab Sample ID: 440-249454-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Antimony	0.35	J	0.99	0.27	mg/Kg	20		6020	Total/NA
Arsenic	4.6		0.49	0.25	mg/Kg	20		6020	Total/NA
Barium	89		0.49	0.25	mg/Kg	20		6020	Total/NA
Beryllium	0.25	J	0.30	0.15	mg/Kg	20		6020	Total/NA
Cadmium	1.7		0.49	0.25	mg/Kg	20		6020	Total/NA
Chromium	16		0.99	0.49	mg/Kg	20		6020	Total/NA
Cobalt	3.9		0.49	0.21	mg/Kg	20		6020	Total/NA
Copper	15		0.99	0.49	mg/Kg	20		6020	Total/NA
Lead	18		0.49	0.25	mg/Kg	20		6020	Total/NA
Molybdenum	0.73	J	0.99	0.49	mg/Kg	20		6020	Total/NA
Nickel	10		0.99	0.49	mg/Kg	20		6020	Total/NA
Selenium	0.67	J	0.99	0.20	mg/Kg	20		6020	Total/NA
Vanadium	25		0.99	0.49	mg/Kg	20		6020	Total/NA
Zinc	49		9.9	4.9	mg/Kg	20		6020	Total/NA
Mercury	0.037		0.020	0.012	mg/Kg	1		7471A	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: B2-9-0

Date Collected: 09/05/19 08:00
Date Received: 09/05/19 10:55

Lab Sample ID: 440-249454-1

Matrix: Solid

Method: 6020 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	F1 F2	1.0	0.27	mg/Kg		09/06/19 11:40	09/08/19 15:43	20
Arsenic	**2.7**		0.50	0.25	mg/Kg		09/06/19 11:40	09/08/19 15:43	20
Barium	**75**	**F1**	0.50	0.25	mg/Kg		09/06/19 11:40	09/08/19 15:43	20
Beryllium	**0.23**	**J**	0.30	0.15	mg/Kg		09/06/19 11:40	09/08/19 15:43	20
Cadmium	**0.65**		0.50	0.25	mg/Kg		09/06/19 11:40	09/08/19 15:43	20
Chromium	**11**		1.0	0.50	mg/Kg		09/06/19 11:40	09/08/19 15:43	20
Cobalt	**3.4**		0.50	0.21	mg/Kg		09/06/19 11:40	09/08/19 15:43	20
Copper	**8.5**		1.0	0.50	mg/Kg		09/06/19 11:40	09/08/19 15:43	20
Lead	**7.6**		0.50	0.25	mg/Kg		09/06/19 11:40	09/08/19 15:43	20
Molybdenum	**0.62**	**J F1**	1.0	0.50	mg/Kg		09/06/19 11:40	09/08/19 15:43	20
Nickel	**8.2**		1.0	0.50	mg/Kg		09/06/19 11:40	09/08/19 15:43	20
Selenium	**0.63**	**J F1**	1.0	0.20	mg/Kg		09/06/19 11:40	09/08/19 15:43	20
Silver	ND		0.50	0.10	mg/Kg		09/06/19 11:40	09/08/19 15:43	20
Thallium	ND	F1	0.50	0.25	mg/Kg		09/06/19 11:40	09/08/19 15:43	20
Vanadium	**20**	**F1**	1.0	0.50	mg/Kg		09/06/19 11:40	09/08/19 15:43	20
Zinc	**28**	**F1**	10	5.0	mg/Kg		09/06/19 11:40	09/08/19 15:43	20

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.020**		0.020	0.012	mg/Kg		09/07/19 13:24	09/09/19 16:46	1

Client Sample ID: B2-9-6

Date Collected: 09/05/19 08:03
Date Received: 09/05/19 10:55

Lab Sample ID: 440-249454-2

Matrix: Solid

Method: 6020 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.42**	**J**	1.0	0.27	mg/Kg		09/06/19 11:40	09/08/19 16:03	20
Arsenic	**4.4**		0.51	0.25	mg/Kg		09/06/19 11:40	09/08/19 16:03	20
Barium	**52**		0.51	0.25	mg/Kg		09/06/19 11:40	09/08/19 16:03	20
Beryllium	**0.22**	**J**	0.30	0.15	mg/Kg		09/06/19 11:40	09/08/19 16:03	20
Cadmium	**2.4**		0.51	0.25	mg/Kg		09/06/19 11:40	09/08/19 16:03	20
Chromium	**16**		1.0	0.51	mg/Kg		09/06/19 11:40	09/08/19 16:03	20
Cobalt	**3.8**		0.51	0.21	mg/Kg		09/06/19 11:40	09/08/19 16:03	20
Copper	**11**		1.0	0.51	mg/Kg		09/06/19 11:40	09/08/19 16:03	20
Lead	**18**		0.51	0.25	mg/Kg		09/06/19 11:40	09/08/19 16:03	20
Molybdenum	**0.68**	**J**	1.0	0.51	mg/Kg		09/06/19 11:40	09/08/19 16:03	20
Nickel	**8.7**		1.0	0.51	mg/Kg		09/06/19 11:40	09/08/19 16:03	20
Selenium	**0.61**	**J**	1.0	0.20	mg/Kg		09/06/19 11:40	09/08/19 16:03	20
Silver	ND		0.51	0.10	mg/Kg		09/06/19 11:40	09/08/19 16:03	20
Thallium	ND		0.51	0.25	mg/Kg		09/06/19 11:40	09/08/19 16:03	20
Vanadium	**24**		1.0	0.51	mg/Kg		09/06/19 11:40	09/08/19 16:03	20
Zinc	**44**		10	5.1	mg/Kg		09/06/19 11:40	09/08/19 16:03	20

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.050**		0.020	0.012	mg/Kg		09/07/19 13:24	09/09/19 16:50	1

Client Sample ID: B2-10-0

Date Collected: 09/05/19 08:40
Date Received: 09/05/19 10:55

Lab Sample ID: 440-249454-5

Matrix: Solid

Method: 6020 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.44	J	1.0	0.27	mg/Kg		09/06/19 11:40	09/08/19 16:05	20
Arsenic	4.3		0.50	0.25	mg/Kg		09/06/19 11:40	09/08/19 16:05	20
Barium	96		0.50	0.25	mg/Kg		09/06/19 11:40	09/08/19 16:05	20
Beryllium	0.36		0.30	0.15	mg/Kg		09/06/19 11:40	09/08/19 16:05	20
Cadmium	0.65		0.50	0.25	mg/Kg		09/06/19 11:40	09/08/19 16:05	20
Chromium	13		1.0	0.50	mg/Kg		09/06/19 11:40	09/08/19 16:05	20
Cobalt	4.4		0.50	0.21	mg/Kg		09/06/19 11:40	09/08/19 16:05	20
Copper	19		1.0	0.50	mg/Kg		09/06/19 11:40	09/08/19 16:05	20
Lead	24		0.50	0.25	mg/Kg		09/06/19 11:40	09/08/19 16:05	20
Molybdenum	0.71	J	1.0	0.50	mg/Kg		09/06/19 11:40	09/08/19 16:05	20
Nickel	11		1.0	0.50	mg/Kg		09/06/19 11:40	09/08/19 16:05	20
Selenium	0.45	J	1.0	0.20	mg/Kg		09/06/19 11:40	09/08/19 16:05	20
Silver	ND		0.50	0.10	mg/Kg		09/06/19 11:40	09/08/19 16:05	20
Thallium	ND		0.50	0.25	mg/Kg		09/06/19 11:40	09/08/19 16:05	20
Vanadium	26		1.0	0.50	mg/Kg		09/06/19 11:40	09/08/19 16:05	20
Zinc	66		10	5.0	mg/Kg		09/06/19 11:40	09/08/19 16:05	20

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.043		0.020	0.012	mg/Kg		09/07/19 13:24	09/09/19 16:52	1

Client Sample ID: B2-10-6

Date Collected: 09/05/19 08:45
Date Received: 09/05/19 10:55

Lab Sample ID: 440-249454-6

Matrix: Solid

Method: 6020 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.35	J	0.99	0.27	mg/Kg		09/06/19 11:40	09/08/19 16:08	20
Arsenic	4.6		0.49	0.25	mg/Kg		09/06/19 11:40	09/08/19 16:08	20
Barium	89		0.49	0.25	mg/Kg		09/06/19 11:40	09/08/19 16:08	20
Beryllium	0.25	J	0.30	0.15	mg/Kg		09/06/19 11:40	09/08/19 16:08	20
Cadmium	1.7		0.49	0.25	mg/Kg		09/06/19 11:40	09/08/19 16:08	20
Chromium	16		0.99	0.49	mg/Kg		09/06/19 11:40	09/08/19 16:08	20
Cobalt	3.9		0.49	0.21	mg/Kg		09/06/19 11:40	09/08/19 16:08	20
Copper	15		0.99	0.49	mg/Kg		09/06/19 11:40	09/08/19 16:08	20
Lead	18		0.49	0.25	mg/Kg		09/06/19 11:40	09/08/19 16:08	20
Molybdenum	0.73	J	0.99	0.49	mg/Kg		09/06/19 11:40	09/08/19 16:08	20
Nickel	10		0.99	0.49	mg/Kg		09/06/19 11:40	09/08/19 16:08	20
Selenium	0.67	J	0.99	0.20	mg/Kg		09/06/19 11:40	09/08/19 16:08	20
Silver	ND		0.49	0.099	mg/Kg		09/06/19 11:40	09/08/19 16:08	20
Thallium	ND		0.49	0.25	mg/Kg		09/06/19 11:40	09/08/19 16:08	20
Vanadium	25		0.99	0.49	mg/Kg		09/06/19 11:40	09/08/19 16:08	20
Zinc	49		9.9	4.9	mg/Kg		09/06/19 11:40	09/08/19 16:08	20

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.037		0.020	0.012	mg/Kg		09/07/19 13:24	09/09/19 16:55	1

Method Summary

Client: Environmental Resources Management Inc
Project/Site: Infineon

Job ID: 440-249454-1
SDG: 1521 E. Grand Ave.

Method	Method Description	Protocol	Laboratory
6020	Metals (ICP/MS)	SW846	TAL IRV
7471A	Mercury (CVAA)	SW846	TAL IRV
3050B	Preparation, Metals	SW846	TAL IRV
7471A	Preparation, Mercury	SW846	TAL IRV

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL IRV = Eurofins TestAmerica, Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

Lab Chronicle

Client: Environmental Resources Management Inc
Project/Site: Infineon

Job ID: 440-249454-1
SDG: 1521 E. Grand Ave.

Client Sample ID: B2-9-0
Date Collected: 09/05/19 08:00
Date Received: 09/05/19 10:55

Lab Sample ID: 440-249454-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.99 g	50 mL	567384	09/06/19 11:40	DT	TAL IRV
Total/NA	Analysis	6020		20			567560	09/08/19 15:43	P1R	TAL IRV
Total/NA	Prep	7471A			0.49 g	50 mL	567522	09/07/19 13:24	DB	TAL IRV
Total/NA	Analysis	7471A		1			567863	09/09/19 16:46	EMS	TAL IRV

Client Sample ID: B2-9-6
Date Collected: 09/05/19 08:03
Date Received: 09/05/19 10:55

Lab Sample ID: 440-249454-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.98 g	50 mL	567384	09/06/19 11:40	DT	TAL IRV
Total/NA	Analysis	6020		20			567560	09/08/19 16:03	P1R	TAL IRV
Total/NA	Prep	7471A			0.50 g	50 mL	567522	09/07/19 13:24	DB	TAL IRV
Total/NA	Analysis	7471A		1			567863	09/09/19 16:50	EMS	TAL IRV

Client Sample ID: B2-10-0
Date Collected: 09/05/19 08:40
Date Received: 09/05/19 10:55

Lab Sample ID: 440-249454-5
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			2.01 g	50 mL	567384	09/06/19 11:40	DT	TAL IRV
Total/NA	Analysis	6020		20			567560	09/08/19 16:05	P1R	TAL IRV
Total/NA	Prep	7471A			0.49 g	50 mL	567522	09/07/19 13:24	DB	TAL IRV
Total/NA	Analysis	7471A		1			567863	09/09/19 16:52	EMS	TAL IRV

Client Sample ID: B2-10-6
Date Collected: 09/05/19 08:45
Date Received: 09/05/19 10:55

Lab Sample ID: 440-249454-6
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			2.03 g	50 mL	567384	09/06/19 11:40	DT	TAL IRV
Total/NA	Analysis	6020		20			567560	09/08/19 16:08	P1R	TAL IRV
Total/NA	Prep	7471A			0.49 g	50 mL	567522	09/07/19 13:24	DB	TAL IRV
Total/NA	Analysis	7471A		1			567863	09/09/19 16:55	EMS	TAL IRV

Laboratory References:

TAL IRV = Eurofins TestAmerica, Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 440-567384/1-A ^20
Matrix: Solid
Analysis Batch: 567560

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 567384

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0	0.27	mg/Kg		09/06/19 11:40	09/08/19 15:38	20
Arsenic	ND		0.51	0.25	mg/Kg		09/06/19 11:40	09/08/19 15:38	20
Barium	ND		0.51	0.25	mg/Kg		09/06/19 11:40	09/08/19 15:38	20
Beryllium	ND		0.30	0.15	mg/Kg		09/06/19 11:40	09/08/19 15:38	20
Cadmium	ND		0.51	0.25	mg/Kg		09/06/19 11:40	09/08/19 15:38	20
Chromium	ND		1.0	0.51	mg/Kg		09/06/19 11:40	09/08/19 15:38	20
Cobalt	ND		0.51	0.21	mg/Kg		09/06/19 11:40	09/08/19 15:38	20
Copper	ND		1.0	0.51	mg/Kg		09/06/19 11:40	09/08/19 15:38	20
Lead	ND		0.51	0.25	mg/Kg		09/06/19 11:40	09/08/19 15:38	20
Molybdenum	ND		1.0	0.51	mg/Kg		09/06/19 11:40	09/08/19 15:38	20
Nickel	ND		1.0	0.51	mg/Kg		09/06/19 11:40	09/08/19 15:38	20
Selenium	ND		1.0	0.20	mg/Kg		09/06/19 11:40	09/08/19 15:38	20
Silver	ND		0.51	0.10	mg/Kg		09/06/19 11:40	09/08/19 15:38	20
Thallium	ND		0.51	0.25	mg/Kg		09/06/19 11:40	09/08/19 15:38	20
Vanadium	ND		1.0	0.51	mg/Kg		09/06/19 11:40	09/08/19 15:38	20
Zinc	ND		10	5.1	mg/Kg		09/06/19 11:40	09/08/19 15:38	20

Lab Sample ID: LCS 440-567384/2-A ^20
Matrix: Solid
Analysis Batch: 567560

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 567384

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	50.8	51.9		mg/Kg		102	80 - 120
Arsenic	50.8	50.6		mg/Kg		100	80 - 120
Barium	50.8	51.0		mg/Kg		101	80 - 120
Beryllium	50.8	51.2		mg/Kg		101	80 - 120
Cadmium	50.8	50.4		mg/Kg		99	80 - 120
Chromium	50.8	50.2		mg/Kg		99	80 - 120
Cobalt	50.8	51.0		mg/Kg		100	80 - 120
Copper	50.8	50.7		mg/Kg		100	80 - 120
Lead	50.8	50.5		mg/Kg		99	80 - 120
Molybdenum	50.8	49.8		mg/Kg		98	80 - 120
Nickel	50.8	51.1		mg/Kg		101	80 - 120
Selenium	50.8	49.5		mg/Kg		98	80 - 120
Silver	25.4	27.1		mg/Kg		107	80 - 120
Thallium	50.8	47.5		mg/Kg		94	80 - 120
Vanadium	50.8	49.7		mg/Kg		98	80 - 120
Zinc	50.8	51.7		mg/Kg		102	80 - 120

Lab Sample ID: 440-249454-1 MS
Matrix: Solid
Analysis Batch: 567560

Client Sample ID: B2-9-0
Prep Type: Total/NA
Prep Batch: 567384

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	ND	F1 F2	49.8	24.6	F1	mg/Kg		49	75 - 125
Arsenic	2.7		49.8	48.6		mg/Kg		92	75 - 125
Barium	75	F1	49.8	109	F1	mg/Kg		69	75 - 125
Beryllium	0.23	J	49.8	47.1		mg/Kg		94	75 - 125
Cadmium	0.65		49.8	48.3		mg/Kg		96	75 - 125

Method: 6020 - Metals (ICP/MS) (Continued)

Lab Sample ID: 440-249454-1 MS
Matrix: Solid
Analysis Batch: 567560

Client Sample ID: B2-9-0
Prep Type: Total/NA
Prep Batch: 567384

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium	11		49.8	57.7		mg/Kg		94	75 - 125
Cobalt	3.4		49.8	48.5		mg/Kg		91	75 - 125
Copper	8.5		49.8	53.8		mg/Kg		91	75 - 125
Lead	7.6		49.8	56.1		mg/Kg		98	75 - 125
Molybdenum	0.62	J F1	49.8	44.9		mg/Kg		89	75 - 125
Nickel	8.2		49.8	53.9		mg/Kg		92	75 - 125
Selenium	0.63	J F1	49.8	44.1		mg/Kg		87	75 - 125
Silver	ND		24.9	25.2		mg/Kg		101	75 - 125
Thallium	ND	F1	49.8	44.4		mg/Kg		89	75 - 125
Vanadium	20	F1	49.8	68.5		mg/Kg		98	75 - 125
Zinc	28	F1	49.8	75.5		mg/Kg		96	75 - 125

Lab Sample ID: 440-249454-1 MSD
Matrix: Solid
Analysis Batch: 567560

Client Sample ID: B2-9-0
Prep Type: Total/NA
Prep Batch: 567384

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	ND	F1 F2	50.0	19.6	F1 F2	mg/Kg		39	75 - 125	22	20
Arsenic	2.7		50.0	40.8		mg/Kg		76	75 - 125	17	20
Barium	75	F1	50.0	97.8	F1	mg/Kg		47	75 - 125	11	20
Beryllium	0.23	J	50.0	39.4		mg/Kg		78	75 - 125	18	20
Cadmium	0.65		50.0	40.2		mg/Kg		79	75 - 125	18	20
Chromium	11		50.0	48.4		mg/Kg		75	75 - 125	17	20
Cobalt	3.4		50.0	41.3		mg/Kg		76	75 - 125	16	20
Copper	8.5		50.0	45.9		mg/Kg		75	75 - 125	16	20
Lead	7.6		50.0	46.3		mg/Kg		77	75 - 125	19	20
Molybdenum	0.62	J F1	50.0	37.0	F1	mg/Kg		73	75 - 125	19	20
Nickel	8.2		50.0	46.1		mg/Kg		76	75 - 125	16	20
Selenium	0.63	J F1	50.0	37.9	F1	mg/Kg		74	75 - 125	15	20
Silver	ND		25.0	21.0		mg/Kg		84	75 - 125	18	20
Thallium	ND	F1	50.0	37.0	F1	mg/Kg		74	75 - 125	18	20
Vanadium	20	F1	50.0	56.0	F1	mg/Kg		73	75 - 125	20	20
Zinc	28	F1	50.0	64.1	F1	mg/Kg		73	75 - 125	16	20

Method: 7471A - Mercury (CVAA)

Lab Sample ID: MB 440-567522/1-A
Matrix: Solid
Analysis Batch: 567863

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 567522

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.020	0.012	mg/Kg		09/07/19 13:24	09/09/19 16:06	1

Lab Sample ID: LCS 440-567522/2-A
Matrix: Solid
Analysis Batch: 567863

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 567522

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.392	0.324		mg/Kg		83	80 - 120

Method: 7471A - Mercury (CVAA) (Continued)

Lab Sample ID: 320-53976-C-1-B MS
Matrix: Solid
Analysis Batch: 567863

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 567522

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury	0.50	F1	0.400	0.730	F1	mg/Kg		57	75 - 125		

Lab Sample ID: 320-53976-C-1-C MSD
Matrix: Solid
Analysis Batch: 567863

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 567522

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.50	F1	0.392	0.735	F1	mg/Kg		59	75 - 125	1	20

Metals

Prep Batch: 567384

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-249454-1	B2-9-0	Total/NA	Solid	3050B	
440-249454-2	B2-9-6	Total/NA	Solid	3050B	
440-249454-5	B2-10-0	Total/NA	Solid	3050B	
440-249454-6	B2-10-6	Total/NA	Solid	3050B	
MB 440-567384/1-A ^20	Method Blank	Total/NA	Solid	3050B	
LCS 440-567384/2-A ^20	Lab Control Sample	Total/NA	Solid	3050B	
440-249454-1 MS	B2-9-0	Total/NA	Solid	3050B	
440-249454-1 MSD	B2-9-0	Total/NA	Solid	3050B	

Prep Batch: 567522

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-249454-1	B2-9-0	Total/NA	Solid	7471A	
440-249454-2	B2-9-6	Total/NA	Solid	7471A	
440-249454-5	B2-10-0	Total/NA	Solid	7471A	
440-249454-6	B2-10-6	Total/NA	Solid	7471A	
MB 440-567522/1-A	Method Blank	Total/NA	Solid	7471A	
LCS 440-567522/2-A	Lab Control Sample	Total/NA	Solid	7471A	
320-53976-C-1-B MS	Matrix Spike	Total/NA	Solid	7471A	
320-53976-C-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	7471A	

Analysis Batch: 567560

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-249454-1	B2-9-0	Total/NA	Solid	6020	567384
440-249454-2	B2-9-6	Total/NA	Solid	6020	567384
440-249454-5	B2-10-0	Total/NA	Solid	6020	567384
440-249454-6	B2-10-6	Total/NA	Solid	6020	567384
MB 440-567384/1-A ^20	Method Blank	Total/NA	Solid	6020	567384
LCS 440-567384/2-A ^20	Lab Control Sample	Total/NA	Solid	6020	567384
440-249454-1 MS	B2-9-0	Total/NA	Solid	6020	567384
440-249454-1 MSD	B2-9-0	Total/NA	Solid	6020	567384

Analysis Batch: 567863

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-249454-1	B2-9-0	Total/NA	Solid	7471A	567522
440-249454-2	B2-9-6	Total/NA	Solid	7471A	567522
440-249454-5	B2-10-0	Total/NA	Solid	7471A	567522
440-249454-6	B2-10-6	Total/NA	Solid	7471A	567522
MB 440-567522/1-A	Method Blank	Total/NA	Solid	7471A	567522
LCS 440-567522/2-A	Lab Control Sample	Total/NA	Solid	7471A	567522
320-53976-C-1-B MS	Matrix Spike	Total/NA	Solid	7471A	567522
320-53976-C-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	7471A	567522

Definitions/Glossary

Client: Environmental Resources Management Inc
Project/Site: Infineon

Job ID: 440-249454-1
SDG: 1521 E. Grand Ave.

Qualifiers

Metals

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
F2	MS/MSD RPD exceeds control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Accreditation/Certification Summary

Client: Environmental Resources Management Inc
Project/Site: Infineon

Job ID: 440-249454-1
SDG: 1521 E. Grand Ave.

Laboratory: Eurofins TestAmerica, Irvine

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
California	State Program	CA ELAP 2706	06-30-20

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte

Chain of Custody Record

392094

eurofins | Environment Testing TestAmerica

Address: _____

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TAL-8210

Client Contact	Project Manager: Maggie TymKow	Site Contact:	Date: 9/5/19	COC No.
Company Name: ERM	Tel/Email: (949) 623-4700	Lab Contact: Danielle Roberts	Carrier:	1 of 1 COCs
Address: 1920 Main St. Ste. 300	Analysis Turnaround Time			Sampler:
City/State/Zip: Irvine, CA 92614	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone: (949) 623-4700	TAT if different from Below _____			Walk-in Client:
Fax:	☐ 2 weeks			Lab Sampling:
Project Name: Infineon	☐ 1 week			
Site: 1521 E. Grand Ave.	☐ 2 days 3day TAT			Job / SDG No.:
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	Archive	Title 22 Metals (6010,7471A)	Sample Specific Notes
B2-9-0	9/5/19	800	G	S	1				X	
B2-9-6	9/5/19	0803	G	S	1				X	
B2-9-12	9/5/19	0808	G	S	1			X		
B2-9-24	9/5/19	0820	G	S	1			X		
B2-10-0	9/5/19	0840	G	S	1				X	
B2-10-6	9/5/19	0845	G	S	1				X	
B2-10-12	9/5/19	0850	G	S	1			X		
B2-10-24	9/5/19	0906	G	S	1			X		

LB 9/5/19

440-249454 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☒ Archive for 1 Months

Special Instructions/QC Requirements & Comments:
j-flags, equis, send results to: maggie.tymkow@erm.com rachel.kolenka@erm.com

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd 5.3 Corr'd 5.9 Therm ID No.: 89

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Rachel Kolenka	ERM	9/5/19 1055			
Relinquished by:	Company	Date/Time:	Received by	Company	Date/Time:
Relinquished by:	Company.	Date/Time:	Received in Laboratory by:	Company: TA IRV	Date/Time: 9/5/19 1055

Login Sample Receipt Checklist

Client: Environmental Resources Management Inc

Job Number: 440-249454-1
SDG Number: 1521 E. Grand Ave.

Login Number: 249454
List Number: 1
Creator: Bonta, Lucia F

List Source: Eurofins TestAmerica, Irvine

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	Not present
Sample custody seals, if present, are intact.	N/A	Not Present
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

APPENDIX L ERM HUMAN HEALTH RISK ASSESSMENT

Appendix L—Human Health Risk Assessment

Infineon Technologies Inc.
Block 1 and Block 2
East Grand Avenue and Kansas Street
El Segundo, California

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Acronyms and Abbreviations

ADC	average daily concentration
ADD	Average Daily Dose
bgs	below ground surface
Cal/EPA	California Environmental Protection Agency
cm^2/sec	square centimeters per second
COPC	chemical of potential concern
CSF	cancer slope factor
CSM	Conceptual Site Model
DCE	dichloroethene
DTSC	Department of Toxic Substances Control
EPC	exposure point concentration
ERM	ERM-West, Inc.
g/m^2	grams per square meter
HHRA	Human Health Risk Assessment
HI	Hazard Index
HQ	Hazard Quotient
ILCR	incremental lifetime cancer risk
IRIS	Integrated Risk Information System
kg/m^3	kilograms per cubic meter
LADD	Lifetime Average Daily Dose
LMS	linearized multistage
LOI	Letter of Intent
m^2/cm^2	square meters per square centimeters
m^3/kg	cubic meters per kilogram
mg/kg	milligrams per kilogram
mg/m^3	milligrams per cubic meter
PEF	Particulate Emission Factor
RfC	reference concentration
RfD	reference dose
RSL	Regional Screening Level
TCE	trichloroethene
UCL	upper confidence limit
UF	uncertainty factor
URF	unit risk factor
USEPA	United States Environmental Protection Agency
VF	volatilization factor
VOC	volatile organic compound

1. INTRODUCTION

On behalf of Infineon Technologies (Infineon), ERM-West, Inc. (ERM) has prepared this *Human Health Risk Assessment* (HHRA) conducted for two multiple-address Infineon properties (Block 1 and Block 2) located at East Grand Avenue and Kansas Street in El Segundo, California (the Site or Subject Property). The locations of Block 1 and Block 2, relative to surrounding streets and other physical features, are shown on Figure 1 of ERM's 27 February 2020 Draft Revised Site Characterization Report.

This Report is being submitted as requested by the California Department of Toxic Substances Control (DTSC) during a 1 May 2019 meeting held at DTSC. It estimates potential theoretical exposures at the Site based on data collected during historical investigation and remediation activities, and site investigations completed by ERM during its 2016 Phase I Environmental Site Assessments and during its 2017 through 2019 limited Phase II subsurface investigations. Infineon has entered into a Letter of Intent ("LOI") to sell the Subject Property to a developer ("Developer") that plans to demolish most of the buildings and redevelop the Site.

1.1 Objectives

The purpose of this HHRA is to evaluate the theoretical potential for adverse human health effects under future potential conditions that may occur as a result of potential exposures to residual concentrations of constituents in soil, soil vapor, and indoor air at the Site, and provide information to guide potential options to mitigate potential impacts if needed.

2. HUMAN HEALTH RISK ASSESSMENT

The HHRA was implemented in accordance with United States Environmental Protection Agency (USEPA) guidance, specifically: *Risk Assessment Guidance for Superfund (RAGS): Volume I—Human Health Evaluation Manual* (USEPA 1989) and its many supplements[1], as well as the DTSC (2011, 2015, 2019 a through d).

The HHRA was conducted in general accordance with California Environmental Protection Agency (Cal/EPA) and the USEPA guidance, principally:

- Risk Assessment Guidance for Superfund: Volume I—Human Health Evaluation Manual (USEPA 1989)
- Supplemental Guidance for Human Health Multimedia Risk Assessments of Hazardous Waste Sites and Permitted Facilities (DTSC 1992), and subsequent DTSC Risk Assessment Notes (2015, 2019a,b,c,d)
- Guidelines for Exposure Assessment (USEPA 1992a)
- Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air (DTSC 2011)
- Risk Assessment Guidance for Superfund, Volume I: Human Health Evaluation Manual (Part F, Supplemental Guidance for Inhalation Risk Assessment), Final (USEPA 2009)
- Regional Screening Levels, May Update, On-line (USEPA 2019a)

The HHRA includes the following elements:

- Conceptual Site Model (CSM): This includes analysis of future anticipated land use, identification of exposure pathways of potential concern associated with future land use, and identification of receptors of potential concern associated with the anticipated land use;
- Data Evaluation: This includes statistical evaluation of data and selection of data for use in the HHRA, including selection/identification of chemicals of potential concern (COPCs);
- Exposure Assessment: This includes evaluation of environmental behavior using applicable fate and transport models, estimation of exposure point concentrations (EPCs), and estimation of exposure levels for the identified exposure pathways and receptors of potential concern;
- Toxicity Assessment: The evaluation and selection of applicable toxicity criteria for COPCs; and
- Risk Characterization: This includes presentation of estimated theoretical upper-bound cancer risks and non-cancer health effects, uncertainty analysis, and interpretation of results.

2.1 Conceptual Site Model

Pursuant to regulatory guidance (USEPA 1989), the purpose of a CSM is to:

"…[identify] all potential or suspected sources of contamination, types, and concentrations of contaminants detected at the site, potentially contaminated media, and potential exposure pathways, including receptors."

A CSM is a schematic representation of the chemical source areas, chemical release mechanisms, environmental transport media, potential human exposure pathways and routes (ingestion, inhalation), and potential receptors. A CSM embodies, to the best of the collective current knowledge, the possible

[1] It should be noted that clear and comprehensive HHRA tables will be developed to convey and document all relevant information utilized to complete the HHRA; however, tables specific to the RAGS D format were not utilized.

contaminant release sources, relevant mechanisms of transport, media of concern, exposure routes, and receptor/population groups that conceptually exist at the Site.

Only complete exposure pathways, which must comprise all the following elements (USEPA 1989), are evaluated in the HHRA:

- A source and mechanism of contaminant release;
- A transport or contact medium (e.g., air or soil);
- An exposure point where humans can contact the contaminated medium; and
- An exposure (intake) route (such as incidental ingestion or vapor inhalation).

This section presents a summary of the CSM.

2.1.1 Current and Future Land Use

The Site is in El Segundo, approximately 12 miles southwest of Los Angeles. As shown on Figure 1 of the Site Characterization Report main text, the Site is approximately 1 mile south of the Los Angeles International Airport, near the intersection of El Segundo Boulevard and North Sepulveda Boulevard (Pacific Coast Highway). The Site consists of two city blocks of commercial properties (Block 1 and Block 2), separated by north-south-trending Kansas Street and east-west-trending East Grand Avenue.

The future intended land use for the Site remains industrial. Due to zoning restrictions and for the purposes of the HHRA, the future Site land use is identified as commercial/industrial and cannot be redeveloped for residential land use.

2.1.2 Identification of Receptors and Exposure Pathways

The following subsections summarizes potential Site use and human exposure scenarios.

2.1.2.1 Receptors

Current and future use of the Site will be reserved for commercial/industrial/manufacturing activities as currently zoned. Subsequently, the most likely future receptors would be commercial/industrial/ manufacturing workers and potential construction workers, and are evaluated.

While Site maintenance workers (landscaping, etc.) and trench workers are possible future receptors at the Site, as discussed and agreed to with DTSC, the exposures and risks associated with these receptors are adequately bounded by more conservative receptor/exposure scenarios. Therefore, these receptor/pathway combinations are not quantitatively evaluated in this HRA.

2.1.2.2 Exposure Pathways

The CSM depicting the proposed exposure pathways for the Site is presented on Figure L-1. Routes of exposure selected for quantitative evaluation in this HHRA are outlined below.

Future Block 1 and Block 2 commercial workers:

- Incidental ingestion of soil
- Dermal contact with soil
- Inhalation of particulates from soil
- Inhalation of vapors from soil
- Inhalation of vapors from soil vapor (future indoor air vapor intrusion)

Future Block 1 and Block 2 construction workers:

- Incidental ingestion of soil
- Dermal contact with soil
- Inhalation of particulates from soil
- Inhalation of volatiles from soil

Existing data indicates there is a regional groundwater plume resulting from previous surrounding industrial activities resulting in releases to the environment not necessarily attributable to Site activities.

The CSM, based on future Site conditions for the present HHRA, is presented on Figure L-1.

2.2 Data Evaluation

This section provides a brief summary of the methods that were used to evaluate data quality and usability, as well as to prepare the data to conduct the HHRA. Data compiled from a number of separate investigations conducted at the Site are provided in Tables L-1 through L-3 (soil), L-4 through L-7 (soil vapor), and L-8 through L-9 and L-10 (indoor air).

2.2.1 Chemicals of Potential Concern Selection

The risk assessment was based on the results of soil, soil vapor, and indoor air samples that were collected at the Site. The soil, soil vapor, and indoor air data gathered during the field sampling program were compiled, tabulated, and evaluated to provide direct input for the risk assessment. All detected chemicals were considered COPCs with several exceptions:

- Metals are naturally occurring substances and may be present at concentrations unrelated to previous Site activities. DTSC (2008) has established a Southern California Regional background arsenic concentration of 12 milligrams per kilogram (mg/kg). Because the maximum detected concentration of arsenic was less than this background estimate, it is not evaluated further in this assessment.
- Quantifying lead exposure is done differently than for other COPCs. Cause-and-effect relationships in humans have been correlated with blood concentrations of lead. As a result, the hazard estimates for lead are not directly comparable with those of other chemicals. As a first screening step, the maximum detected concentration of lead was compared the residential screening value (DTSC 2019c) of 80 mg/kg. As the maximum detected concentration of lead (65.5 mg/kg) is less than the residential screening value, it is not assessed further in the HHRA.

For each chemical detected in soil, soil vapor, and indoor air at the Site, the following information was summarized in tabular format in the risk assessment:

- Number of samples
- Number of detected concentrations
- Frequency of detection
- Range of detected concentrations

For commercial/industrial workers and construction workers, surface soils are conservatively defined as the top 10 feet of soil.

Data evaluation conducted for soil, soil vapor, and indoor air are provided in Tables L-10 through L-17.

2.3 Exposure Assessment

In a risk assessment, the possible exposures of populations are examined to determine if the chemicals could pose a threat to the health of identified human populations of interest (e.g., consumers), or receptors. The risks associated with exposure to chemicals depend not only on the concentration of the chemicals in the media, but also on the duration and frequency of exposure to those media. Potential health effects from chemicals in a medium can occur via one or more exposure pathways. The exposure assessment step of a risk assessment combines information regarding affected media with assumptions about the people who could come into contact with these media. The result is an estimation of a person's potential rate of contact with the affected media. The intake rates are evaluated in the risk characterization step to estimate the risks they could pose.

Presented and discussed in this section are the various methods, assumptions, and data that were considered for estimating the relationship between soil and soil vapor concentrations of COPCs, receptor EPCs, and receptor-specific exposure factors. All of these parameters were combined in the risk characterization step to estimate theoretical upper-bound non-cancer hazards and incremental lifetime cancer risks (ILCRs).

The following exposure variables are identified and discussed:

- EPCs: Estimated concentrations of COPCs to which the receptors of interest may be exposed under future land use scenarios. Fate and transport modeling is employed to derive these estimates.
- Potential receptor exposure factors: Assumed biological (e.g., body weight, skin surface area) and non-biological (e.g., soil ingestion rates) factors associated with potential human receptors and exposure pathways.

2.3.1 Exposure Point Concentrations

An EPC is a COPC-specific and media-specific concentration value. In the HHRA, these exposure concentrations are values incorporated into the exposure assessment equations from which potential baseline human exposures are calculated. As described below, the methods, rationale, and assumptions employed in deriving these concentration values followed Cal/EPA and USEPA guidance and reflect Site-specific conditions.

2.3.1.1 Soil Concentrations

Soil concentrations (if detected) were evaluated for both Block 1 and Block 2 areas for each COPC (see Section 2.2.3 above). Soil concentrations were evaluated separately for Block 1 and Block 2 chemical concentrations. Soil EPCs evaluated as part of this HHRA are presented in Table L-10 (Block 1) and L-11 (Block 2).

2.3.1.2 Soil Vapor Concentrations

Soil vapor concentrations (if detections) were evaluated for both Block 1 and Block 2 areas for each COPC (see Section 2.2.3 above). Soil vapor concentrations were evaluated separately for Block 1 and Block 2 chemical concentrations.

Soil vapor EPCs evaluated as part of this HHRA are presented in Table L-12 and L-13 (Block 1) and L-14 and L-15 (Block 2).

2.3.1.3 Measured Indoor Air Concentrations

Measured indoor air EPCs evaluated as part of this HHRA are presented in Table L-16 (Block 1) and L-17 (Block 2).

2.3.1.4 Outdoor Air Concentrations

On-Site workers may be exposed to soil COPCs in outdoor air as a result of fugitive dust generation and volatilization of volatile COPCs. The following two sections outline the conservative methods applied to estimate such exposures to workers.

Fugitive Dust

Non-volatile COPCs adsorbed to soil particles can potentially become airborne, resulting in possible migration towards zones where worker receptors could be exposed. Exposure to COPCs bound to dust particles were evaluated herein using the USEPA's Particulate Emission Factor (PEF) approach (USEPA 2002). The PEF relates concentrations of a chemical in soil to the concentration of dust particles in the air.

$$Ca = Cs / PEF$$

Where:

Ca = Estimated Concentration in air (milligrams per cubic meter [mg/m^3])
Cs = Estimated Concentration in Soil (mg/kg)
PEF = Particulate emission factor (cubic meters per kilogram [m^3/kg])

Commercial Workers

For Block 1 and Block 2 commercial workers, USEPA 2019 and 2002 guidance was utilized to estimate fugitive dust. Default PEFs (1.36×10^9 m^3/kg) were used for this purpose.

Construction Workers

For future potential construction workers, the DTSC default construction worker dust particulate emission factor of 1×10^6 m^3/kg (DTSC 2019a) was utilized.

Volatilization from Soil

Ambient air concentrations of volatile COPCs resulting from subsurface soil volatilization were estimated using the USEPA volatilization factor (VF) approach (USEPA 2002, 2019). These models combine information about the behavior of a chemical in the environment with Site and atmospheric parameters to determine a VF of a chemical at the soil surface following upward migration from soil.

$$Ca = Cs / VF$$

Where:

Ca = Estimated Concentration in air (mg/m^3)
Cs = Estimated Concentration in Soil (mg/kg)
VF = Volatilization factor (m^3/kg)

Commercial Workers

The chemical-specific default worker and residential USEPA VFs (2019a) were used to evaluate this air exposure pathway.

Construction Workers

For future construction workers, USEPA (2002) construction VF equations were utilized to estimate construction-specific volatilization exposures. Two volatilization factors were calculated, the subchronic

volatilization factor (using equation 5-14 of USEPA 2002), and the mass limit volatilization factor (using equation 5-17 of USEPA 2002):

$$VF = ((3.14 \times Da \times T)^{0.5})/(2 \times \rho b \times Da)) \times 0.0001\ m^2/cm^2 \times Q/C \times (1/Fd)$$

Where:

Da	=	Apparent diffusivity (square centimeters per second [cm^2/sec])
T	=	Time over which construction occurs (seconds)
ρb	=	Dry bulk density (grams per cubic centimeter [g/cm^3])
Q/C	=	Inverse of the ratio of the 1-h geometric mean air concentration to the emission flux (grams per square meter [g/m^2] -s per kilograms per cubic meter [kg/m^3])
Fd	=	Dispersion correction factor (unitless)

and

$$Da = ((\theta a^{3.33} \times Di \times H' + \theta w^{3.33})/n^2)/((\rho b \times Kd) + (\theta w) + (\theta a \times H'))$$

Where:

Di	=	Diffusivity in air (cm^2/sec)
Dw	=	Diffusivity in water (cm^2/sec)
Θa	=	Air filled porosity (unitless)
Θw	=	Water filled porosity (unitless)
ρb	=	Dry bulk density (g/cm^3)
n	=	Total porosity (unitless)
Ps	=	Dry bulk density (g/cm^3)
H'	=	Henrys law (unitless)
Kd	=	Soil-water partition coefficient (g/cm^3; Koc x foc)
Koc	=	Soil organic carbon partition coefficient (g/cm^3)
Foc	=	Fraction of organic carbon (grams per gram [g/g])

And the mass limit VF (USEPA 2002; equation 5-17) is:

$$Q/C \times 1/Fd \times ((T \times (3.15 \times 10^7\ sec/yr))/(\rho b \times d \times 10^6\ grams\ per\ milligram\ [g/mg])$$

Where:

T	=	Exposure duration (years)

As described in USEPA (2002), the VF calculation is conservative as it assumes contamination is present at ground surface, and does not take into account total mas available or loss during volatilization (assumed infinite mass). Therefore, if the mass limited VF is less conservative (greater than) the subchronic VF, the mass limited VF is used.

Both equations are also conservative in that they do not account for the biodegradation processes known to occur on for petroleum hydrocarbons.

These VF calculations are presented in Table L-18.

Soil Vapor Intrusion Evaluation

Pursuant to the discussion with DTSC at the 3 May 2019 meeting and consistent with the DTSC Note 4 (2019c) for screening level HHRAs, the default USEPA attenuation factor of 0.03 was utilized to conduct a screening soil vapor intrusion evaluation.

$$C_a = AF \times C_{sv}$$

Where:

C_a = Concentration of chemical in air (micrograms per cubic meter [µg/m^3])
AF = Attenuation factor (0.03)
C_w = Concentration of chemical in soil vapor (µg/m^3)

It should be noted that estimating indoor air concentrations using groundwater data was not conducted. As discussed and agreed with DTSC on 21 November 2019, existing soil vapor and indoor air data give a solid basis for estimating theoretical risk associated with existing soil vapor sources at the Site. Based on the results of the AF = 0.03 evaluation (discussed below), additional assessment using the DTSC default AF of 0.001 was considered unnecessary as it does not change the conclusions.

2.3.2 Potential Exposure Parameters

The assumptions regarding the extent of exposure are identified in this section for each of the complete exposure pathways identified above. Many of the assumptions regarding the extent of exposure to COPCs are a combination of reasonable maximum exposure and average exposure factors developed by DTSC (2019a) and USEPA in the development of the regional screening levels (RSLs) (USEPA 2019a). The selected exposure parameters are provided on Tables L-19, L-20 and depict the exposure parameters for commercial and construction workers, respectively.

2.3.3 Quantification of Potential Exposure

In this section, the concentrations of COPCs at the points of potential human exposure are combined with assumptions about the behavior of the populations of interest to estimate the dose of COPCs that may be taken in by the exposed individuals. During the risk characterization evaluation of the HHRA, the doses are combined with toxicity parameters for COPCs to estimate calculated intake levels that are not likely to pose a threat to human health.

The method used to estimate the Average Daily Dose (ADD) of the COPCs via each of the complete exposure pathways is based on USEPA (1989, 1992b, 2004) guidance. For carcinogens, Lifetime Average Daily Dose (LADD) estimates are based on chronic lifetime exposure, extrapolated over the estimated average lifetime (assumed to be 70 years). This establishes consistency with cancer slope factors (CSFs), which are based on chronic lifetime exposures. For non-carcinogens, ADD estimates are averaged over the estimated exposure period. ADDs and LADDs were calculated for each exposure scenario using the equations below.

2.3.3.1 Soil

COPC exposures from incidental ingestion of soil were calculated using the following equations:

$$\textit{Soil Ingestion Dose (milligram per Kilogram [mg/kg] per day)} = \frac{C_s \times IngR \times CF \times EF \times ED}{BW \times AT}$$

Where:

Cs = Estimated Concentration in Soil (mg/kg)
IngR = Ingestion Rate (mg soil/day)
CF = Conversion Factor (10^{-6} kg/mg)
EF = Exposure Frequency (days/year)
ED = Exposure Duration (years)
BW = Body Weight (kg)
AT = Averaging Time (period over which exposure is averaged - days)

Exposure doses from dermal contact with soil were calculated using the following equation:

$$\textit{Soil Dermal Dose (mg/kg-day)} = \frac{C_s \times CF \times SA \times AF \times EvF \times ABS \times EF \times ED}{BW \times AT}$$

Where:

Cs	=	Estimated Concentration in Soil (mg/kg)
CF	=	Conversion Factor (10^{-6} kg/mg)
SA	=	Skin Surface Area Exposed (square centimeters [cm^2])
AF	=	Adherence Factor of Soil (mg/cm^2-event)
EvF	=	Event Frequency (events/day)
ABS	=	Skin Absorption Factor (unitless)
EF	=	Exposure Frequency (days/year)
ED	=	Exposure Duration (years)
BW	=	Body Weight (kg)
AT	=	Averaging Time (period over which exposure is averaged days)

Exposure doses from inhalation were calculated using the following equation:

$$ADC \ / \ LADC = \frac{C_a \times ET \times EF \times ED}{24 \text{ hours/day} \times 365 \text{ days/year} \times AT}$$

Where:

ADC	=	Average daily concentration (in milligrams per cubic meter [mg/m^3])
LADC	=	Lifetime average daily concentration (mg/m^3)
Ca	=	Chemical concentration in the contact medium (mg/m^3 air)
ET	=	Exposure time (hours/day)
EF	=	Exposure frequency (number of days per year)
ED	=	Exposure duration (ED; years of exposure)
AT	=	Averaging time; same as the ED for non-carcinogens and 70 years (average lifetime) for carcinogens

Exposure levels of potentially carcinogenic and non-carcinogenic chemicals are calculated separately because different exposure assumptions apply (i.e., ADD for non-carcinogens and LADD for carcinogens).

Estimated soil exposures for each pathway and across pathways are presented in Tables L-21 through L-24.

2.3.3.2 Ambient and Indoor Air

Inhalation exposure concentrations for constituents in ambient and indoor air were calculated as follows:

$$ADC \ / \ LADC = \frac{C_a \times ET \times EF \times ED}{24 \text{ hours/day} \times 365 \text{ days/year} \times AT}$$

Where:

C_a	=	Concentration in Air (mg/m^3)
EF	=	Exposure Frequency (days/year)
ED	=	Exposure Duration (years)
AT	=	Averaging Time (period over which exposure is averaged – days)

Estimated exposures for each pathway and across pathways are presented in Tables L-21 through L-30.

2.4 Toxicity Assessment

This section describes the methods that were utilized for selection of the most appropriate toxicity criteria for characterizing the risks to assumed receptors during the HHRA.

The results of the exposure assessment (dosages in units of mg/kg-day for direct contact, and mg/m^3 for inhalation) were compared with information about the toxicity of each COPC. For carcinogens, CSFs and unit risk factors (URFs) were used. CSFs are chemical-specific and experimentally derived potency values applied in calculating the theoretical upper-bound risk of cancer associated with a specified level of exposure to a potentially carcinogenic substance. A higher value implies a more potent carcinogenic potential.

For non-carcinogens, reference doses (RfDs) and reference concentrations (RfCs) were used. RfDs are experimentally derived “no-effect” levels applied in quantifying the extent of non-carcinogenic toxic effects. With RfDs, a lower value implies a more potent toxicant.

Toxicity values, when available, are published by Cal/EPA on the Office of Environmental Health Hazard Assessment (OEHHA) chemical database website (OEHHA 2019), and the USEPA on the Integrated Risk Information System (IRIS) database (USEPA 2019c), in its RSLs tables and RSL calculator (USEPA 2019a). Consistent with the recent rulemaking, toxicity criteria were obtained from DTSC Note 10 *DTSC-Recommended Toxicity Criteria*. (DTSC 2019d).

2.4.1 Route to Route Extrapolation

Toxicity values are not available for the dermal exposure route; therefore, route-to-route extrapolations of oral toxicity values were used to evaluate dermal exposures for inorganic and organic COPCs. For purposes of the present HHRA, USEPA’s method for extrapolating oral toxicity criteria to the dermal route was employed (*Risk Assessment Guidance for Superfund, Volume I: Human Health Evaluation Manual; Part E, Supplemental Guidance for Dermal Risk Assessment*, USEPA 2004). Consistent with Exhibit 4-1 and Section 4.2 of USEPA 2004, no adjustment of toxicity values was necessary.

However, where inhalation toxicity criteria was not available for a chemical, consistent with USEPA guidance (2009), route-to-route extrapolation was not conducted.

2.4.2 Surrogates

It is not uncommon for some chemicals to be detected in media at a site that lacks agency-derived toxicity values. In an effort to reduce uncertainty and potential data gaps in the HHRA, efforts were made to identify appropriate chemical surrogates for these chemicals, and use the toxicity criteria for these surrogates in the HHRA.

Toxicity criteria selected for use in this HHRA are presented in Tables L-31 through L-34.

2.5 Risk Characterization

In the last step of a risk assessment, the estimated rate at which a receptor intakes a chemical was compared with information about the toxicity of that COPC to estimate the potential risks posed by exposure to the COPC. This step is known as risk characterization. The methods used for assessing cancer risks and non-cancer adverse health effects are discussed below to provide perspective on how the intake rates were derived.

2.5.1 Method for Assessing Cancer Risks

In the risk characterization, carcinogenic risk is estimated as the incremental probability of an individual developing cancer over a lifetime as a result of exposure to chemicals. Carcinogenic risks for chemicals were evaluated by multiplying the estimated average exposure rate (i.e., LADD calculated in the exposure assessment) by the chemical's CSF. The CSF converts estimated daily doses averaged over a lifetime to incremental risk of an individual developing cancer. Because cancer risks are averaged over a person's lifetime, longer-term exposure to a carcinogen results in higher risks than shorter-term exposure to the same carcinogen, if all other exposure assumptions are constant. Theoretical risks associated with low levels of exposure in humans are assumed to be directly related to an observed cancer incidence in animals associated with high levels of exposure during laboratory testing. According to USEPA (1989), this approach is appropriate for theoretical upper-bound ILCRs of less than 1×10^{-2}. The following equations were used to calculate COPC-specific risks:

$$ILCR = \text{LADD} \times \text{CSF}$$

and

$$ILCR = \text{LADC} \times \text{URF}$$

Where:

ILCR = Incremental lifetime cancer risk (unitless)
LADD = Lifetime average daily dose (mg/kg-day)
CSF = Cancer slope factor $(\text{mg/kg-day})^{-1}$
LADC = Lifetime average daily concentration ($\mu g/m^3$)
URF = Unit risk factor $(\mu g/m^3)^{-1}$

and

Total Carcinogenic Risk = Σ Individual Risk

It is assumed that cancer risks are additive across exposure pathways and COPCs. Carcinogenic risk estimates were compared to potential benchmarks. ILCRs were compared to Cal/EPA target risk for individual COPCs of 1×10^{-6} and a cumulative Site-wide risk of 1×10^{-6}. A risk level of 1 × 10-6 (1 E-6) represents a probability of 1 in 1,000,000 (one million) that an individual could develop cancer from exposure to the potential carcinogen under a defined set of exposure assumptions. ILCRs were also compared to the USEPA (1990) acceptable risk range of 1 in 10,000 (10^{-4}) and 1 in 1 million (10^{-6}) and *de minimis* level of 10^{-6}. Estimated risk within or below the acceptable target risk ranges were considered unlikely to pose an unacceptable carcinogenic risk to individuals under the given exposure conditions.

2.5.2 Method for Assessing Non-Cancer Health Effects

Non-cancer adverse health effects were estimated by comparing the estimated average exposure rate (i.e., ADDs estimated in the exposure assessment) with an exposure level at which no adverse health effects are expected to occur for a long period of exposure (e.g., the RfDs). ADDs and RfDs were compared by dividing the ADD by the RfD to obtain the ADD to RfD ratio, as follows:

$$HQ = \frac{\text{ADD}}{\text{RfD}}$$

and

$$HQ = \frac{\text{ADC}}{\text{RfC}}$$

Where:

HQ	=	Hazard quotient
ADD	=	Average daily dose (mg/kg-day)
RfD	=	Reference dose (mg/kg-day)
ADC	=	Average daily concentration (mg/m^3)
RfC	=	Reference concentration (mg/m^3)

The ADD-to-RfD (and ADC-to-RfC) ratio is known as a Hazard Quotient (HQ). If a person's average exposure is less than the RfD/RfC (i.e., if the HQ is less than 1), the chemical is considered unlikely to pose a significant non-carcinogenic health hazard to individuals under the given exposure conditions. Unlike carcinogenic risk estimates, an HQ is not expressed as a probability. Therefore, while both cancer and non-cancer risk characterizations indicate a relative potential for adverse effects to occur from exposure to a chemical, a non-cancer adverse health effect estimate is not directly comparable with a cancer risk estimate.

If more than one pathway is evaluated, the HQs for each pathway will be summed across COPCs for a given sample to determine whether exposure to a combination of pathways poses a health concern. This sum of the HQs is known as the hazard index (HI).

$$HI = \Sigma \text{ HQs}$$

In accordance with Cal/EPA and USEPA target risks, any HI less than 1.0 indicates the exposure is unlikely to be associated with a potential health concern.

2.5.2.1 Segregation of Non-Carcinogenic Effects by Target Organ-System Effects

Because toxicological effects associated with exposure to multiple chemicals may or may not be additive, the total HI would not underestimate—rather, would overestimate—the potential for non-carcinogenic health effects. Therefore, for any HI that exceeds 1, the potential for adverse health effects was reviewed for further evaluation by segregating the HI according to the target organ-system toxicological effects of the COPCs (e.g., the HQs for all neurotoxic COPCs summed, the HQs for all hepatotoxic HQs were summed). Target organ-system HIs were summed for both organic and inorganic COPCs. Segregation of HIs by target organ-system is consistent with USEPA guidance for non-carcinogens, including metals (USEPA 1989). Any segregated HI less than 1 indicates the exposure is unlikely to be associated with a potential health concern.

Construction worker exposures (1 year or less) by definition are at most subchronic exposures[2], and default RfDs and RfCs are chronic in nature. Therefore, if the construction worker yielded a default HI of 1 or greater for the driving chemical(s), a reevaluation using available USEPA subchronic criteria[3] was conducted.

[2]Integrated Risk Information System (IRIS) Glossary https://iaspub.epa.gov/sor_internet/registry/termreg/searchandretrieve/glossariesandkeywordlists/search.do?details=&vocabName=IRIS%20Glossary#formTop. Subchronic: Repeated exposure by the oral, dermal, or inhalation route for more than 30 days, up to approximately 10% of the life span in humans.

[3] https://semspub.epa.gov/src/document/HQ/199466

2.6 Quantitative Risk Assessment Results

This section presents the conservative estimates of both carcinogenic risks and non-carcinogenic health effects for receptors assessed. The calculated theoretical upper-bound ILCRs are compared to the acceptable risk metric identified in Section 2.5. The non-carcinogenic health effects are compared to a target HI of 1.0. The results for the COPCs for Block 1 and Block 2 are presented in Tables L-21 through L-31, and are summarized in Table L-35.

2.6.1 Soils

The HHRA results for Block 1 and Block 2 soils are presented below.

2.6.1.1 Future Commercial Workers

The results of the HHRA for assumed commercial and construction worker exposure to Block 1 and Block 2 soils are presented herein.

As shown in Table L-35, the calculated HI and ILCR associated for on-Site soils from 0 to 10 feet below ground surface (bgs) for Block 1 were 0.06 and 2×10^{-8}, respectively. Similarly, for Block 2 on-Site soils from 0 to 10 feet bgs were 0.03 and 2×10^{-7}. These results are less than the Cal/EPA target risk of 1×10^{6}.

2.6.1.2 Future Construction Workers

As shown in Table L-35, the calculated chronic HI for the construction worker for Block 1 was 1 and an ILCR of 1×10^{-9}. The chemical contributing most to the HI = 1 was cobalt. The HI was reevaluated using subchronic toxicity criteria for cobalt, and re-summed with the remaining COPCs chronic HI's. The revised HI using subchronic criteria for cobalt was HI = 0.6. For Block 2, the HI and ILCR were 0.66 and 2×10^{-8}, respectively. These results are less than the Cal/EPA target risk of 1×10^{-6}.

2.6.2 Soil Vapor (0 to 5 feet bgs)

The results of the HHRA for assumed commercial worker exposure to soil vapor for Block 1 and Block 2 are presented in this section.

2.6.2.1 Future Commercial Workers

Block 1

As shown in Table L-35, the calculated HI and ILCR associated with estimated vapor intrusion for Block 1 from 0 to 5 feet bgs were 20 and 1×10^{-3}, respectively. These results are greater than the Cal/EPA target risk for individual COPCs of 1×10^{-6} and HI =1. As discussed in greater detail below, based on this limited dataset, it appears initially that these results are overly conservative as measured indoor air shows neither detected concentrations of the COPCs in soil vapor, nor are the estimated results for indoor air above the target risk levels.

Block 2

As shown in Table L-35, the calculated HI and ILCR associated with estimated vapor intrusion from 0 to 5 feet bgs were 65 and 6×10^{-4}, respectively. These results are greater than the Cal/EPA target risk for individual COPCs of 1×10^{-6} and HI =1. Similarly to the Block 1 HI results, while it was greater than the recommended HI of 1, the measured indoor air results were not above the target risk levels.

Risk and hazard estimates for assumed soil vapor intrusion estimates (commercial indoor air) associated with the maximum detected soil vapor concentrations modeled using the default attenuation factor of 0.03 were greater than target risk thresholds. However, indoor air samples were collected to verify these results.

2.6.3 Soil Vapor (>5 feet bgs)

2.6.3.1 Block 1

As shown in Table L-35, the calculated HI and ILCR associated with vapor intrusion for Block 1 greater than 5 feet bgs were 401 and 1 x 10^{-2}, respectively. These results are greater than the Cal/EPA target risk of 1 × 10^{-6} and HI =1. As discussed in greater detail below, based on this limited dataset, it appears initially that these results are overly conservative as measured indoor air shows neither detected concentrations of the COPCs in soil vapor, nor are the estimated results for indoor air above the target risk levels.

2.6.3.2 Block 2

As shown in Table L-35, the calculated HI and ILCR associated with vapor intrusion for Block 2 greater than 5 feet bgs were 192 and 2 x 10^{-3}, respectively. These results are greater than the Cal/EPA target risk of 1 × 10^{-6} and HI =1. Similarly to the Block 1 HI results, while it was greater than the recommended HI of 1, the measured indoor air results were not above the target risk levels.

Risk and hazard estimates for assumed soil vapor intrusion estimates (commercial indoor air) associated with the maximum detected soil vapor concentrations modeled using the default attenuation factor of 0.03 were greater than target risk thresholds. However, indoor air samples were collected to verify these results.

2.6.4 Measured Indoor Air

Risk and hazard estimates for maximum measured indoor air (commercial indoor air) concentrations were less than or generally the same as target hazard (1) or target risk (10^{-6}) thresholds for Block 1 (HI = 0.013, ILCR = 0) or Block 2 (HI = 0.66, ILCR = 4 x 10^{-6}). At Block 2, these risk estimates were driven by benzene concentrations.

Maximum detected benzene concentrations in indoor air are not distinguishable from anthropogenic background values typically seen in Southern California urban environments (California Air Resources Board 2019). Therefore, these concentrations cannot be specifically attributed to Site conditions. Furthermore, based on this limited dataset, it appears initially that there is no current evidence of vapor migration and intrusion into buildings at Block 1 or Block 2, as none of the soil vapor COPCs detected in subsurface soil vapor (trichloroethene, tetrachloroethene, 1,1- dichloroethene [DCE], 1,2-DCE) were detected in any of the indoor air samples. Therefore, the weight of evidence indicates detected benzene concentrations in indoor air are not likely to be related to vapor intrusion but rather anthropogenic background that is not Site related.

2.6.5 Cumulative Risk

The cumulative HHRA results for Block 1 and Block 2 soils are presented below.

2.6.5.1 Future Commercial Workers

The cumulative results of the HHRA for assumed commercial and construction worker exposure to Block 1 and Block 2 are presented herein.

As shown in Table L-35, the calculated cumulative HI and ILCR for Block 1 were:

- Block 1 Commercial Worker
    - Soil and Theoretical Vapor Default AF VI: HI = 20, ILCR = 1 x 10^{-3}
    - Soil and Measured Indoor Air: HI = 0.07, ILCR = 2 x 10^{-8}

Similarly, for Block 2 the cumulative calculated HI and ILCR:

- Block 2 Commercial Worker
    - Soil and Theoretical Vapor Default AF VI: HI = 65, ILCR = 6 x 10^{-4}
    - Soil and Measured Indoor Air: HI = 0.69, ILCR = 2 x 10^{-7}

The cumulative results considered to be most representative of current Site conditions (soil and measured indoor air) are less than or equal to the Cal/EPA target risk of 1 × 10^{-6}.

2.6.5.2 Future Construction Workers

As shown in Table L-35, the calculated HI for the construction worker for Block 1 was 0.6 with an ILCR of 1 x 10^{-9}. For Block 2, the HI and ILCR were 0.66 and 2 x 10^{-8}, respectively. These results are less than the Cal/EPA target risk of 1 × 10^{-6}.

2.7 Uncertainty Analysis

Risk estimates are values that have associated uncertainties. These uncertainties, which arise at every step of an HHRA, are evaluated to provide an indication to risk managers of the relative degree of uncertainty associated with a risk estimate. A qualitative discussion of the uncertainties associated with the HHRA is presented herein.

An HHRA is not intended to quantify actual risks to receptors as a result of theoretical constituent exposures. In fact, estimating actual risks is impossible because of the variability in the exposed or potentially exposed populations. Therefore, risk assessment is a means of estimating the theoretical upper-bound probability that an adverse health effect (e.g., cancer, impaired reproduction) might occur in a receptor as a result of either actual or assumed constituent exposures. The numerous conservative assumptions inherent in the risk assessment process guards against underestimation of risks.

The uncertainties in this HHRA can be grouped into four main categories that correspond to these steps:

- Uncertainties in environmental sampling and analysis
- Uncertainties in fate-and-transport modeling
- Uncertainties in assumptions concerning exposure scenarios
- Uncertainties in toxicity data and dose response extrapolations

2.7.1 Environmental Sampling and Analysis

This HHRA relies on the sampling results obtained from various investigations over time. Errors in sampling results can arise from the field sampling methods, laboratory analyses, and data analyses. Errors in laboratory analytical procedures are possible, although the impacts of these sorts of errors on risk estimates are likely to be low. The environmental sampling conducted at the Site is one source of uncertainty in this HHRA. However, the sampling locations were selected to identify the areas with the greatest likelihood of impacts. Furthermore, data points/sampling locations were selected for the HHRA in a justifiable, but somewhat conservative, manner to produce risk estimates that are protective and that can provide reasonable information for future decision-making. Therefore, the sampling and analytical

data for soils and soil vapor should be sufficient to characterize the impacts and the associated potential risks.

Reporting limits were also examined to determine whether they were sufficient to have identified concentrations of potential interest. While several of the reporting limits are elevated, they are the result of dilutions required to properly analyze other constituents present at significant concentrations. As these constituents are potentially Site-related and will drive risk estimates and any remedial decisions made for the Site, for the purposes of this evaluation, it is concluded that uncertainties associated with detection limits are likely sufficiently low for the purposes of decision-making associated with this HHRA.

2.7.2 Fate and Transport Calculations

The assumptions and uncertainties inherent in each of the fate-and-transport models applied to the HHRA are discussed in the modeling sections of this HHRA. To the extent practical or necessary, models and model inputs have been selected to conservatively reflect Site conditions. Fate-and-transport models and their input parameters were selected conservatively such that modeled concentrations at a temporally or spatially remote receptor point would be overestimated. Thus, actual future concentrations of COPCs in each of the modeled media are likely to be less than those predicted by the model.

Several key conditions should be considered with regard to the soil-to-outdoor-air, and soil vapor to indoor air modeling results. Based on this limited dataset, it appears initially that the modeling environments (attenuation factor of 0.03) used to estimate EPCs from soil and soil vapor to air are overly conservative for California sites, as evidenced by the measured indoor air concentrations, and as outlined in a number of recent publications (Ettinger et al. 2018). In addition, all models assume infinite chemical mass (no loss over time).

2.7.3 Human Health Risk Assessment

Below is a discussion of the uncertainties inherent in each step of the risk assessment process.

2.7.3.1 Exposure Assessment

In this report, the exposure assessment is based on a number of assumptions with varying degrees of uncertainty (USEPA 1992b). Uncertainties can arise from the types of exposures examined, the points of potential human exposure, the COPC concentrations at the points of human exposure, and the intake assumptions. These factors and the ways in which they contribute to the risk estimation are discussed below.

Types of Exposures Examined

The selection of exposure pathways is a process often based on professional judgment, which attempts to identify the most probable potentially harmful exposure scenarios. Because risks are not always calculated for all possible exposure pathways that may occur at a site, some underestimation of risk may occur. In this HHRA, potential commercial worker risks were estimated assuming direct contact with soils, and inhalation of COPCs, and for future construction workers, only future hypothetical direct contact with soils was estimated. While other exposure routes could exist, these exposures are expected to be lower than the risks associated with the pathways considered.

Points of Human Exposure

In this assessment, assumptions were made to indicate the locations where people could come into contact with impacted media. It is conservatively assumed that individuals will be exposed to a consistent COPC concentration in each medium, based on the assumptions used in the assessment, regardless of

where they are within the investigation area. That is, fluctuations in constituent concentrations, either spatially or temporally, are not considered. Additionally, the present assessment was conducted on a without assuming future development conditions that would limit or preclude exposures (import of clean fill, installation of infrastructure such as roads and high density land use buildings that minimize bare soil) that will preclude exposure.

Intake Assumptions Used

The risks calculated depend largely on the assumptions used to calculate the rate of COPC intake. Individuals can come into contact with constituents via a number of different exposure routes. For the reasonable maximum exposure scenarios, standard default rates were used for these exposures, representing upper-bound reasonable maximum activity assumptions. The use of these standard default upper-end values makes it likely that the risk is not underestimated, and may in fact be overestimated.

The amount of COPCs the body absorbs may be different from the amount of a COPC contacted. In this assessment, absorption of ingested and inhaled COPCs is conservatively assumed to be 100 percent. Actual constituent and area-specific values are likely less than this default value.

2.7.3.2 Toxicological Data and Dose Response Extrapolations

The availability and quality of toxicological data are another source of uncertainty in the risk assessment. Uncertainties associated with animal and human studies may have influenced the toxicity criteria. Carcinogenic criteria are classified according to the amount of evidence available that suggests human carcinogenicity. In the establishment of the non-carcinogenic criteria, conservative multipliers, known as uncertainty and modifying factors, are used.

Uncertainties in Animal and Human Studies

Extrapolation of toxicological data from animal tests is one of the largest sources of uncertainty in a risk assessment. There may be important, but unidentified, differences in uptake, metabolism, and distribution of constituents in the body between the test species and humans. For the most part, these uncertainties are addressed through use of conservative assumptions in establishing values for RfDs/RfCs and CSFs/URFs, which result in the likelihood that the risk is overstated.

Typically, animals are administered doses of a constituent that are higher than would be experienced in an environmental setting. Humans may be exposed to much lower doses, which may affect the toxicity of the constituent. In these studies, animals—usually laboratory rodents—are exposed daily to the chemical agent for various periods of time up to their 2-year lifetimes. Humans have an average 70-year lifetime and may be exposed either intermittently or regularly for an exposure period ranging from months to a full lifetime. Because of these differences, it is not surprising that extrapolation error is a large source of uncertainty in a risk assessment.

Non-carcinogenic Toxicity Criteria

In the establishment of the non-carcinogenic criteria, conservative multipliers, known as uncertainty factors, are used. Most of the chronic non-carcinogenic toxicity criteria that were located in the IRIS database (USEPA 2019a) have uncertainty factors of 1,000. This means that the dose corresponding to a toxicological endpoint (e.g., lowest-observed-adverse-effect-level) was divided by 1,000, thus increasing the toxicity level by a factor of three. The purpose of the uncertainty factor is to account for the extrapolation of toxicity data from animals to humans and to ensure the protection of sensitive individuals. However, in accomplishing this, the uncertainty in the actual toxicity of the constituent in humans is greatly increased.

Additionally, some constituents do not have published non-cancer toxicity criteria. As developing criteria can be a labor-intensive task, where data to develop such criteria were not readily available, non-cancer effects were not assessed. Although numerous conservative assumptions and procedures are integral to the risk assessment process and make it unlikely that non-cancer hazard is underestimated, the lack of such criteria adds another degree of uncertainty to the hazard estimates. To the extent practicable, surrogates were identified or qualitative comparisons to other similar chemicals/criteria were provided. Two specific examples are provided below.

Carcinogenic Toxicity Criteria

Uncertainty due to extrapolation of toxicological data for potential carcinogens tested in animals-to-human data is more prominent for potentially carcinogenic constituents than non-carcinogenic ones. USEPA uses the linearized multistage (LMS) model to extrapolate the toxicological data. The LMS model assumes that there is no threshold for carcinogenic substances; that is, exposure to even one molecule of a carcinogen is sufficient to cause cancer. This is a very conservative assumption, because the body has mechanisms to protect against cancer.

The use of the LMS model to extrapolate is a well-recognized source of significant uncertainty in the development of carcinogenic toxicity criteria and, subsequently, theoretical carcinogenic risk estimates. At high levels of exposure, there may indeed be a risk of cancer regardless of whether the effect occurs via a threshold mechanism or not. An animal bioassay cannot determine what happens at low levels of exposure, although these levels are generally typical of actual human exposure levels.

At low levels of exposure, the probability of cancer cannot be measured, but must be extrapolated from higher dosages. To do this, animals are typically exposed to carcinogens at levels that are orders of magnitude greater than those likely to be encountered by humans in the environment. It would be difficult, if not impossible, to perform animal experiments with a large enough number of animals to directly estimate the level of risk at the low exposure levels typically encountered by humans. Thus, to estimate the risk to humans exposed at low levels, dose-response data derived from animals given high dosages are extrapolated downward using mathematical models such as the LMS, which assumes that there is no threshold of response. The dose-response curve generated by the model is known as the maximum likelihood estimate. The slope of the 95 percent lower confidence interval (i.e., upper-bound limit) curve, which is a function of the variability in the input animal data, is taken as the CSF. CSFs are then used directly in cancer risk assessment.

The federal government, including USEPA, has acknowledged the limitations of the high-to-low dose extrapolation models, particularly the LMS (USEPA 1991).

Even for genotoxic (i.e., non-threshold) substances, there are two major sources of bias embedded in the LMS:

- It has inherent conservatism at low doses.
- The routine use of the linearized form in which the 95 percent upper confidence interval is used, instead of the unbiased maximum likelihood estimate.

The inherent conservatism at low doses is due in part to the fact that the LMS ignores all the numerous biological factors that argue against a linear dose-response relationship for genotoxic effects (e.g., DNA repair, immunosurveillance, toxicokinetic factors).

Several other factors inherent in the LMS result in overestimated carcinogenic potency:

- Any exaggerations in the extrapolation that can be produced by some high-dose responses (if they occur) are generally not recognized.
- Upper confidence intervals on the actual response observed in the animal study are used, rather than the actual response, resulting in upper-bound low-dose extrapolations, which can greatly overestimate risk.
- Non-genotoxic constituents (i.e., threshold carcinogens) are modeled in the same manner as highly genotoxic constituents.

The following excerpts are from the Executive Office of the President (USEPA 1991):

> *None of (the) purported advantages of the LMS approach has a sound statistical basis. It is a fundamental axiom of statistics that unbiased estimates are generally preferred to biased ones. Using the upper confidence limit instead of the unbiased estimate exaggerates underlying specification errors instead of eliminating them. 'Instability' is overcome, but at the cost of greater errors in specification. The problem with the LMS is that it generates biases that intensify with the degree to which the multistage model mis-specifies the true dose response relationship.*
>
> *The LMS cannot be justified as a method of scientific risk assessment. The 'yardstick' defense implicitly asserts that scientific advancements in risk assessment methodology should take a back seat to the preservation of an outdated and misguided statistical procedure.*
>
> *The habitual reliance upon either the multistage model or its LMS descendant cannot be supported by sound scientific principles.*

Even when studies of constituent effects in humans are available, they typically are for workplace exposures that exceed those expected in the environment. Uncertainties can be large because activity patterns, exposure duration, frequency, individual susceptibility, and dose may not be the same in study populations as individuals exposed to environmental concentrations. Because conservative methods are used in developing the RfDs and CSFs, the possibility of underestimating risks is low.

2.7.3.3 Combinations of Sources of Uncertainty

Uncertainties from different sources are compounded in the risk assessment. For example, if a person's daily intake rate for a constituent is compared to an RfD to determine potential health risks, the uncertainties in the concentration measurements, exposure assumptions, and toxicities will all be expressed in the result. Therefore, by combining all upper-bound numbers, the uncertainty is compounded and the resulting risk estimate is generally above the 90th or 95th percentile, perhaps even greater than the 99th percentile.

2.7.4 Uncertainty Analysis Conclusions

The following conclusions were reached:

- The sampling and analytical data are sufficient to characterize the impacts and the associated potential risks for constituents detected in soil, soil vapor and groundwater (based on vapor). Because the modeling environment constructed for the evaluation is based on conservative input parameters, the vapor intrusion evaluations are likely overly conservative.
- The analytical reporting limits were sufficient for the purposes of this HHRA.

- Fate-and-transport calculations likely overestimate the relationship between observed soil vapor and predicted indoor air concentrations, which will overestimate risks.
- Based on the conservative way in which exposure potential and toxicity are developed and assessed, the possibility of underestimating exposures and risks is low.

3. CONCLUSIONS AND RECOMMENDATIONS

The purpose of this HHRA was to evaluate potential theoretical human health effects as a result of potential exposures to residual concentrations of constituents in Block 1 and Block 2 soil. Exposures and risks associated with theoretical future Block 1 and Block 2 commercial workers and construction workers to soil and volatile COPCs. The calculated theoretical upper-bound incremental cancer risks and non-cancer health hazards associated with these exposure estimates are summarized in Table L-35.

The results of the HHRA produced the following conclusions:

- Assumed future Block 1 and Block 2 commercial worker direct contact with surface soil (0 to 10 feet bgs) exposures[4] do not exceed Cal/EPA risk thresholds.
- Assumed future Block 1 and Block 2 construction worker direct contact with soil (0 to 10 feet bgs) exposures[4] do not exceed Cal/EPA risk thresholds.
- Future Block 1 and Block 2 theoretical exposures[4] associated with vapor intrusion exceeded Cal/EPA risk thresholds when the default attenuation factor of 0.03 (DTSC 2019c) is used. However, results from measured indoor air provided a more relevant estimate of risk. The risks associated with measured indoor air are less than Cal/EPA risk metrics or not attributable to subsurface conditions. In fact, no evidence was observed currently supporting vapor intrusion conditions at the Site, but is based only on a single sampling event. Based on this limited dataset, it appears initially that the default attenuation factors may be overly conservative, however, verification of vapor intrusion potential will be determined by post development indoor air sampling.
- Cumulative risks for construction worker receptors (soil direct contact) are less than the Cal/EPA target risk metrics[4].
- Cumulative risks for future commercial receptors for soil and theoretical soil vapor VI are greater than the Cal/EPA target risk metrics[4].
- Cumulative risks for commercial receptors for soil and measured indoor air (considered likely indicative of current VI potential)[4] are less than the Cal/EPA target risk metrics.
- Any mitigation elements associated with future development may reduce or eliminate pathways evaluated herein, but will be evaluated in the future to determine whether the exposure pathways in the CSM are blocked or eliminated.

[4] Estimated exposures and risks did not include any potential reductions in exposures from future redevelopment/mitigation elements.

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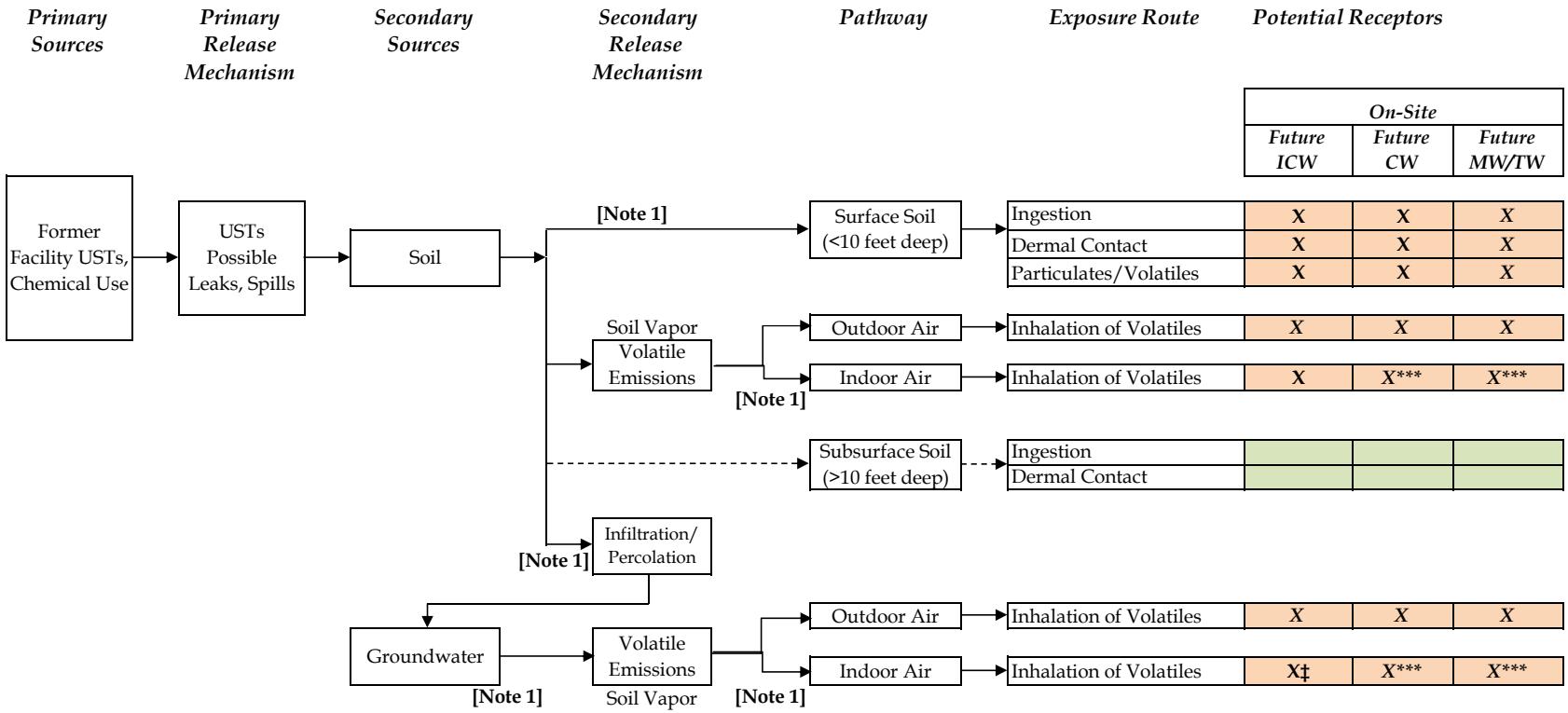
FIGURES

FIGURE L-1
CONCEPTUAL SITE MODEL
Infineon Site
El Segundo, California



Key:

Blank cell =	Incomplete pathway
X =	Potentially complete pathway
X =	*Not quantitatively evaluated; bounded by other receptor evaluations or considered insignificant*

--------- = Pathway not complete

*** Trench air. Not quantified as indoor air estimates adequately address potential order of magnitude risks and response actions for COCs contributing by this pathway.

‡ Assessed using soil vapor and indoor air data collected onsite.

CW = Construction worker performing excavation activities

ICW = Industrial/Commercial Worker

MW/TW = Maintenance/Trench Worker

Notes

1 Mitigation elements associated with future development may reduce exposure pathway by development/barrier/mitigation/grading/excavation but requires evaluation to determine whether the exposure pathways in the CSM are blocked or eliminated in future by planned development actions.

TABLES

Table L-1
Summary of Detected Chemicals in Soil - 2017 Data - Block 1 and Block 2
Infineon Facility
El Segundo, California

Chemical	DTSC Note 3 SL (Commercial)	USEPA RSL (Commercial)	Location Group / Sample Date / Sample Type / Sample ID	Block 1													
				14-Mar-17 N SB-1-0-1	14-Mar-17 N SB-2-1-2	14-Mar-17 N SB-3-0-1	14-Mar-17 N SB-4-0-1	14-Mar-17 N SB-5-0-1	14-Mar-17 N SB-6-0-1	14-Mar-17 N SB-7-0-1	14-Mar-17 N SB-9-0-1	14-Mar-17 N SB-10-1-2	14-Mar-17 N SB-11-0-1	14-Mar-17 N SB-12-0-1	14-Mar-17 N SB-13-0-1	14-Mar-17 N SB-19-0-1	14-Mar-17 N SB-20-0-1
Metals																	
Antimony	--	470	mg/kg	*< 0.714*	*< 0.714*	*< 0.728*	*< 0.739*	*< 0.718*	*< 0.728*	*< 0.721*	*< 0.721*	*< 0.735*	*< 0.739*	*< 0.728*	*< 0.721*	*< 0.732*	*< 0.725*
Arsenic	0.36 (12*)	--	mg/kg	**0.828**	**0.949**	**0.814**	*< 0.739*	**0.783**	*< 0.728*	**0.956**	**1.17**	**1.31**	*< 0.739*	**0.991**	**1.04**	*< 0.732*	*< 0.725*
Barium	--	220,000	mg/kg	**36.6**	**24.7**	**27.1**	**26.1**	**40.7**	**48.9**	**31.0**	**59.0**	**40.3**	**41.5**	**34.5**	**44.3**	**15.8**	**20.3**
Beryllium	230	--	mg/kg	*< 0.238*	*< 0.238*	*< 0.243*	*< 0.246*	*< 0.239*	*< 0.243*	*< 0.240*	*< 0.240*	*< 0.245*	*< 0.246*	*< 0.243*	*< 0.240*	*< 0.244*	*< 0.242*
Cadmium	780	--	mg/kg	*< 0.476*	*< 0.476*	**0.783**	**0.672**	*< 0.478*	**0.795**	**0.557**	**1.20**	*< 0.490*	*< 0.493*	*< 0.485*	*< 0.481*	**5.84**	*< 0.483*
Chromium	--	1,800,000.00	mg/kg	**8.73**	**6.82**	**10.2**	**8.68**	**10.1**	**8.34**	**8.42**	**10.4**	**12.5**	**9.31**	**10.2**	**9.55**	**11.6**	**9.83**
Chromium, VI	6.2	--	mg/kg									*< 0.80*				*< 0.80*	
Cobalt	--	350	mg/kg	**3.17**	**2.27**	**6.25**	**3.08**	**4.83**	**14.5**	**11.1**	**9.33**	**4.29**	**3.27**	**3.34**	**3.52**	**4.65**	**2.45**
Copper	--	47,000	mg/kg	**3.39**	**2.68**	**10.1**	**5.79**	**5.29**	**13.2**	**9.63**	**12.0**	**4.25**	**5.58**	**5.43**	**3.70**	**17.0**	**2.38**
Lead	320	--	mg/kg	**2.15**	**3.53**	**32.1**	**30.3**	**2.28**	**31.7**	**17.4**	**65.0**	**3.07**	**7.39**	**18.1**	**2.08**	**3.33**	**2.73**
Mercury	4.4	--	mg/kg	*< 0.0820*	*< 0.0806*	*< 0.0794*	*< 0.0794*	*< 0.0820*	*< 0.0794*	*< 0.0806*	*< 0.0806*	*< 0.0794*	*< 0.0820*	*< 0.0794*	*< 0.0806*	*< 0.0820*	*< 0.0806*
Molybdenum	--	5,800	mg/kg	*< 0.238*	*< 0.238*	*< 0.243*	*< 0.246*	*< 0.239*	*< 0.243*	*< 0.240*	*< 0.240*	*< 0.245*	*< 0.246*	*< 0.243*	*< 0.240*	*< 0.244*	*< 0.242*
Nickel	11,000	--	mg/kg	**3.71**	**2.79**	**4.30**	**4.16**	**5.11**	**4.50**	**4.45**	**5.80**	**5.41**	**4.46**	**4.30**	**4.34**	**8.94**	**3.65**
Selenium	--	5,800	mg/kg	**0.778**	*< 0.714*	**0.947**	**0.836**	*< 0.718*	**1.01**	**0.751**	**1.12**	**0.793**	*< 0.739*	**1.02**	**0.854**	**0.736**	*< 0.725*
Silver	--	5,800	mg/kg	*< 0.238*	*< 0.238*	*< 0.243*	*< 0.246*	*< 0.239*	*< 0.243*	*< 0.240*	*< 0.240*	*< 0.245*	*< 0.246*	*< 0.243*	*< 0.240*	*< 0.244*	*< 0.242*
Thallium	--	12	mg/kg	*< 0.714*	*< 0.714*	*< 0.728*	*< 0.739*	*< 0.718*	*< 0.728*	*< 0.721*	*< 0.721*	*< 0.735*	*< 0.739*	*< 0.728*	*< 0.721*	*< 0.732*	*< 0.725*
Vanadium	--	5,800	mg/kg	**13.0**	**12.5**	**13.9**	**15.3**	**15.4**	**17.9**	**14.2**	**22.9**	**17.0**	**15.3**	**16.3**	**14.6**	**14.7**	**13.1**
Zinc	--	350,000	mg/kg	**10.0**	**9.45**	**94.1**	**62.0**	**12.8**	**60.1**	**40.0**	**71.4**	**13.4**	**21.0**	**41.8**	**10.3**	**237**	**12.4**
	SFRWQCB	**LARWQCB**															
TPH	**ESL*****	**SSL****															
C11-C12	*1,200*	*500*	mg/kg	*< 5.0*	*< 4.9*	*< 25*	*< 5.0*	*< 4.9*	*< 5.0*	*< 5.0*	*< 4.9*	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.0*	*< 4.9*	*< 4.9*
C25-C28	*180,000*	*10,000*	mg/kg	*< 5.0*	*< 4.9*	**28**	**13**	*< 4.9*	*< 5.0*	*< 5.0*	**18**	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.0*	*< 4.9*	*< 4.9*
C29-C32	*180,000*	*10,000*	mg/kg	*< 5.0*	*< 4.9*	**44**	**23**	*< 4.9*	*< 5.0*	**6.4**	**30**	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.0*	*< 4.9*	*< 4.9*
C33-C36	*180,000*	*10,000*	mg/kg	*< 5.0*	*< 4.9*	**26**	**16**	*< 4.9*	*< 5.0*	*< 5.0*	**19**	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.0*	*< 4.9*	*< 4.9*
C37-C40	*180,000*	*10,000*	mg/kg	*< 5.0*	*< 4.9*	*< 25*	**8.6**	*< 4.9*	*< 5.0*	*< 5.0*	**12**	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.0*	*< 4.9*	*< 4.9*
C41-C44	*180,000*	*10,000*	mg/kg	*< 5.0*	*< 4.9*	*< 25*	*< 5.0*	*< 4.9*	*< 5.0*	*< 5.0*	*< 4.9*	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.0*	*< 4.9*	*< 4.9*
C6	*1,200*	*500*	mg/kg	*< 5.0*	*< 4.9*	*< 25*	*< 5.0*	*< 4.9*	*< 5.0*	*< 5.0*	*< 4.9*	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.0*	*< 4.9*	*< 4.9*
C6-C44-TOTAL	*1,200*	*500*	mg/kg	*< 5.0*	*< 4.9*	**120**	**65**	*< 4.9*	**12**	**16**	**88**	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.0*	*< 4.9*	*< 4.9*
C7	*1,200*	*500*	mg/kg	*< 5.0*	*< 4.9*	*< 25*	*< 5.0*	*< 4.9*	*< 5.0*	*< 5.0*	*< 4.9*	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.0*	*< 4.9*	*< 4.9*
C8	*1,200*	*500*	mg/kg	*< 5.0*	*< 4.9*	*< 25*	*< 5.0*	*< 4.9*	*< 5.0*	*< 5.0*	*< 4.9*	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.0*	*< 4.9*	*< 4.9*
C9-C10	*1,200*	*500*	mg/kg	*< 5.0*	*< 4.9*	*< 25*	*< 5.0*	*< 4.9*	*< 5.0*	*< 5.0*	*< 4.9*	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.0*	*< 4.9*	*< 4.9*
EFH(C13-C14)	*1,200*	*500*	mg/kg	*< 5.0*	*< 4.9*	*< 25*	*< 5.0*	*< 4.9*	*< 5.0*	*< 5.0*	*< 4.9*	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.0*	*< 4.9*	*< 4.9*
EFH(C15-C16)	*1,200*	*500*	mg/kg	*< 5.0*	*< 4.9*	*< 25*	*< 5.0*	*< 4.9*	*< 5.0*	*< 5.0*	*< 4.9*	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.0*	*< 4.9*	*< 4.9*
EFH(C17-C18)	*1,200*	*500*	mg/kg	*< 5.0*	*< 4.9*	*< 25*	*< 5.0*	*< 4.9*	*< 5.0*	*< 5.0*	*< 4.9*	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.0*	*< 4.9*	*< 4.9*
EFH(C19-C20)	*180,000*	*1,000*	mg/kg	*< 5.0*	*< 4.9*	*< 25*	*< 5.0*	*< 4.9*	*< 5.0*	*< 5.0*	*< 4.9*	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.0*	*< 4.9*	*< 4.9*
EFH(C21-C22)	*180,000*	*1,000*	mg/kg	*< 5.0*	*< 4.9*	*< 25*	*< 5.0*	*< 4.9*	*< 5.0*	*< 5.0*	*< 4.9*	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.0*	*< 4.9*	*< 4.9*
EFH(C23-C24)	*180,000*	*1,000*	mg/kg	*< 5.0*	*< 4.9*	*< 25*	*< 5.0*	*< 4.9*	*< 5.0*	*< 5.0*	*< 4.9*	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.0*	*< 4.9*	*< 4.9*

Table L-1
Summary of Detected Chemicals in Soil - 2017 Data - Block 1 and Block 2
Infineon Facility
El Segundo, California

Chemical	DTSC Note 3 SL (Commercial)	USEPA RSL (Commercial)	Location Group	Block 1													
			Sample Date	14-Mar-17	14-Mar-17	14-Mar-17	14-Mar-17	14-Mar-17	14-Mar-17	14-Mar-17	14-Mar-17	14-Mar-17	14-Mar-17	14-Mar-17	14-Mar-17	14-Mar-17	14-Mar-17
			Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N
			Sample ID	SB-1-0-1	SB-2-1-2	SB-3-0-1	SB-4-0-1	SB-5-0-1	SB-6-0-1	SB-7-0-1	SB-9-0-1	SB-10-1-2	SB-11-0-1	SB-12-0-1	SB-13-0-1	SB-19-0-1	SB-20-0-1
VOCs	**DTSC Note 3 SL (Commercial)**	**USEPA RSL (Commercial)**															
1,1,1,2-Tetrachloroethane	8,800	8,800	µg/kg	*< 5.2*	*< 5.1*	*< 5.0*	*< 5.1*	*< 5.0*	*< 5.1*	*< 5.1*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.1*
1,1,1-Trichloroethane	7,200,000	36,000,000	µg/kg	*< 5.2*	*< 5.1*	*< 5.0*	*< 5.1*	*< 5.0*	*< 5.1*	*< 5.1*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.1*
1,1,2,2-Tetrachloroethane	2,700	2,700	µg/kg	*< 5.2*	*< 5.1*	*< 5.0*	*< 5.1*	*< 5.0*	*< 5.1*	*< 5.1*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.1*
1,1,2-Trichloroethane	--	5,000	µg/kg	*< 5.2*	*< 5.1*	*< 5.0*	*< 5.1*	*< 5.0*	*< 5.1*	*< 5.1*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.1*
1,1-Dichloroethane	16,000	16,000	µg/kg	*< 5.2*	*< 5.1*	*< 5.0*	*< 5.1*	*< 5.0*	*< 5.1*	*< 5.1*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.1*
1,1-Dichloroethene	350,000	1,000,000	µg/kg	*< 5.2*	*< 5.1*	*< 5.0*	*< 5.1*	*< 5.0*	*< 5.1*	*< 5.1*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.1*
1,1-Dichloropropene	--	--	µg/kg	*< 5.2*	*< 5.1*	*< 5.0*	*< 5.1*	*< 5.0*	*< 5.1*	*< 5.1*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.1*
1,2,3-Trichlorobenzene	300,000	930,000	µg/kg	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 9.9*	*< 10*	*< 9.9*	*< 10*	*< 9.9*	*< 10*	*< 10*
1,2,3-Trichloropropane	21	110	µg/kg	*< 5.2*	*< 5.1*	*< 5.0*	*< 5.1*	*< 5.0*	*< 5.1*	*< 5.1*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.1*
1,2,4-Trichlorobenzene	35,000	110,000	µg/kg	*< 5.2*	*< 5.1*	*< 5.0*	*< 5.1*	*< 5.0*	*< 5.1*	*< 5.1*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.1*
1,2,4-Trimethylbenzene	--	1,800,000	µg/kg	*< 5.2*	*< 5.1*	*< 5.0*	*< 5.1*	*< 5.0*	*< 5.1*	*< 5.1*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.1*
1,2-Dibromo-3-chloropropane	57	64	µg/kg	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 9.9*	*< 10*	*< 9.9*	*< 10*	*< 9.9*	*< 10*	*< 10*
1,2-Dichlorobenzene	--	9,300,000	µg/kg	*< 5.2*	*< 5.1*	*< 5.0*	*< 5.1*	*< 5.0*	*< 5.1*	*< 5.1*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.1*
1,2-Dichloroethane	--	2,000	µg/kg	*< 5.2*	*< 5.1*	*< 5.0*	*< 5.1*	*< 5.0*	*< 5.1*	*< 5.1*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.1*
1,2-Dichloropropane	--	11,000	µg/kg	*< 5.2*	*< 5.1*	*< 5.0*	*< 5.1*	*< 5.0*	*< 5.1*	*< 5.1*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.1*
1,3,5-Trimethylbenzene	--	1,500,000	µg/kg	*< 5.2*	*< 5.1*	*< 5.0*	*< 5.1*	*< 5.0*	*< 5.1*	*< 5.1*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.1*
1,3-Dichlorobenzene	--	--	µg/kg	*< 5.2*	*< 5.1*	*< 5.0*	*< 5.1*	*< 5.0*	*< 5.1*	*< 5.1*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.1*
1,3-Dichloropropane	2,200,000	23,000,000	µg/kg	*< 5.2*	*< 5.1*	*< 5.0*	*< 5.1*	*< 5.0*	*< 5.1*	*< 5.1*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.1*
1,4-Dichlorobenzene	--	11,000	µg/kg	*< 5.2*	*< 5.1*	*< 5.0*	*< 5.1*	*< 5.0*	*< 5.1*	*< 5.1*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.1*
2,2-Dichloropropane	--	--	µg/kg	*< 5.2*	*< 5.1*	*< 5.0*	*< 5.1*	*< 5.0*	*< 5.1*	*< 5.1*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.1*
2-Butanone	--	190,000,000	µg/kg	*< 52*	*< 51*	*< 50*	*< 51*	*< 50*	*< 51*	*< 51*	*< 50*	*< 50*	*< 50*	*< 51*	*< 49*	*< 50*	*< 51*
2-Hexanone	--	1,300,000	µg/kg	*< 52*	*< 51*	*< 50*	*< 51*	*< 50*	*< 51*	*< 51*	*< 50*	*< 50*	*< 50*	*< 51*	*< 49*	*< 50*	*< 51*
4-Chlorotoluene	2,300,000	--	µg/kg	*< 5.2*	*< 5.1*	*< 5.0*	*< 5.1*	*< 5.0*	*< 5.1*	*< 5.1*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.1*
4-Isopropyltoluene	--	--	µg/kg	*< 5.2*	*< 5.1*	*< 5.0*	*< 5.1*	*< 5.0*	*< 5.1*	*< 5.1*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.1*
4-Methyl-2-pentanone	--	140,000,000	µg/kg	*< 52*	*< 51*	*< 50*	*< 51*	*< 50*	*< 51*	*< 51*	*< 50*	*< 50*	*< 50*	*< 51*	*< 49*	*< 50*	*< 51*
Acetone	--	670,000,000	µg/kg	*< 130*	*< 130*	*< 120*	*< 130*	*< 130*	*< 130*	*< 130*	*< 120*	*< 130*	*< 120*	*< 130*	*< 120*	*< 130*	*< 130*
Benzene	1,400	5,100	µg/kg	*< 5.2*	*< 5.1*	*< 5.0*	*< 5.1*	*< 5.0*	*< 5.1*	*< 5.1*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.1*
Bromobenzene	--	1,800,000	µg/kg	*< 5.2*	*< 5.1*	*< 5.0*	*< 5.1*	*< 5.0*	*< 5.1*	*< 5.1*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.1*
Bromodichloromethane	1,300	1,300	µg/kg	*< 5.2*	*< 5.1*	*< 5.0*	*< 5.1*	*< 5.0*	*< 5.1*	*< 5.1*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.1*
Bromoform	86,000	86,000	µg/kg	*< 5.2*	*< 5.1*	*< 5.0*	*< 5.1*	*< 5.0*	*< 5.1*	*< 5.1*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.1*
Carbon disulfide	--	3,500,000	µg/kg	*< 52*	*< 51*	*< 50*	*< 51*	*< 50*	*< 51*	*< 51*	*< 50*	*< 50*	*< 50*	*< 51*	*< 49*	*< 50*	*< 51*

Table L-1
Summary of Detected Chemicals in Soil - 2017 Data - Block 1 and Block 2
Infineon Facility
El Segundo, California

Chemical	DTSC Note 3 SL (Commercial)	USEPA RSL (Commercial)	Location Group	Block 1													
			Sample Date	14-Mar-17	14-Mar-17	14-Mar-17	14-Mar-17	14-Mar-17	14-Mar-17	14-Mar-17	14-Mar-17	14-Mar-17	14-Mar-17	14-Mar-17	14-Mar-17	14-Mar-17	14-Mar-17
			Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N
			Sample ID	SB-1-0-1	SB-2-1-2	SB-3-0-1	SB-4-0-1	SB-5-0-1	SB-6-0-1	SB-7-0-1	SB-9-0-1	SB-10-1-2	SB-11-0-1	SB-12-0-1	SB-13-0-1	SB-19-0-1	SB-20-0-1
Carbon tetrachloride	2,900	2,900	µg/kg	< 5.2	< 5.1	< 5.0	< 5.1	< 5.0	< 5.1	< 5.1	< 5.0	< 5.0	< 5.0	< 5.1	< 4.9	< 5.0	< 5.1
Chlorobenzene	--	1,300,000	µg/kg	< 5.2	< 5.1	< 5.0	< 5.1	< 5.0	< 5.1	< 5.1	< 5.0	< 5.0	< 5.0	< 5.1	< 4.9	< 5.0	< 5.1
Chlorobromomethane	--	630,000	µg/kg	< 5.2	< 5.1	< 5.0	< 5.1	< 5.0	< 5.1	< 5.1	< 5.0	< 5.0	< 5.0	< 5.1	< 4.9	< 5.0	< 5.1
Chloroethane	--	57,000,000	µg/kg	< 5.2	< 5.1	< 5.0	< 5.1	< 5.0	< 5.1	< 5.1	< 5.0	< 5.0	< 5.0	< 5.1	< 4.9	< 5.0	< 5.1
Chloroform	--	1,400	µg/kg	< 5.2	< 5.1	< 5.0	< 5.1	< 5.0	< 5.1	< 5.1	< 5.0	< 5.0	< 5.0	< 5.1	< 4.9	< 5.0	< 5.1
cis-1,2-Dichloroethene	84,000	2,300,000	µg/kg	< 5.2	< 5.1	< 5.0	< 5.1	< 5.0	< 5.1	< 5.1	< 5.0	< 5.0	< 5.0	< 5.1	< 4.9	< 5.0	< 5.1
cis-1,3-Dichloropropene	--	8,200	µg/kg	< 5.2	< 5.1	< 5.0	< 5.1	< 5.0	< 5.1	< 5.1	< 5.0	< 5.0	< 5.0	< 5.1	< 4.9	< 5.0	< 5.1
Dibromochloromethane	--	39,000	µg/kg	< 5.2	< 5.1	< 5.0	< 5.1	< 5.0	< 5.1	< 5.1	< 5.0	< 5.0	< 5.0	< 5.1	< 4.9	< 5.0	< 5.1
Dibromomethane		99,000	µg/kg	< 5.2	< 5.1	< 5.0	< 5.1	< 5.0	< 5.1	< 5.1	< 5.0	< 5.0	< 5.0	< 5.1	< 4.9	< 5.0	< 5.1
Ethanol	--	--	µg/kg	< 260	< 260	< 250	< 260	< 250	< 260	< 260	< 250	< 250	< 250	< 260	< 250	< 250	< 250
Ethylbenzene	--	25,000	µg/kg	< 5.2	< 5.1	< 5.0	< 5.1	< 5.0	< 5.1	< 5.1	< 5.0	< 5.0	< 5.0	< 5.1	< 4.9	< 5.0	< 5.1
Ethylene dibromide	160	--	µg/kg	< 5.2	< 5.1	< 5.0	< 5.1	< 5.0	< 5.1	< 5.1	< 5.0	< 5.0	< 5.0	< 5.1	< 4.9	< 5.0	< 5.1
Ethyl-tert-butyl ether	--	--	µg/kg	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 9.9	< 10	< 9.9	< 10	< 9.9	< 10	< 10
Freon 11	5,400,000	--	µg/kg	< 52	< 51	< 50	< 51	< 50	< 51	< 51	< 50	< 50	< 50	< 51	< 49	< 50	< 51
Freon 113	--	28,000,000	µg/kg	< 52	< 51	< 50	< 51	< 50	< 51	< 51	< 50	< 50	< 50	< 51	< 49	< 50	< 51
Freon 12	--	370,000	µg/kg	< 5.2	< 5.1	< 5.0	< 5.1	< 5.0	< 5.1	< 5.1	< 5.0	< 5.0	< 5.0	< 5.1	< 4.9	< 5.0	< 5.1
Isopropyl ether	--	--	µg/kg	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 9.9	< 10	< 9.9	< 10	< 9.9	< 10	< 10
Isopropylbenzene (Cumene)	--	9,900,000	µg/kg	< 5.2	< 5.1	< 5.0	< 5.1	< 5.0	< 5.1	< 5.1	< 5.0	< 5.0	< 5.0	< 5.1	< 4.9	< 5.0	< 5.1
m,p-Xylenes	--	2,800,000	µg/kg	< 5.2	< 5.1	< 5.0	< 5.1	< 5.0	< 5.1	< 5.1	< 5.0	< 5.0	< 5.0	< 5.1	< 4.9	< 5.0	< 5.1
Methyl bromide	--	30,000	µg/kg	< 26	< 26	< 25	< 26	< 25	< 26	< 26	< 25	< 25	< 25	< 26	< 25	< 25	< 25
Methyl chloride	--	460,000	µg/kg	< 26	< 26	< 25	< 26	< 25	< 26	< 26	< 25	< 25	< 25	< 26	< 25	< 25	< 25
Methyl tert-butyl ether	--	210,000	µg/kg	< 5.2	< 5.1	< 5.0	< 5.1	< 5.0	< 5.1	< 5.1	< 5.0	< 5.0	< 5.0	< 5.1	< 4.9	< 5.0	< 5.1
Methylene chloride	26,000	1,000,000	µg/kg	< 52	< 51	< 50	< 51	< 50	< 51	< 51	< 50	< 50	< 50	< 51	< 49	< 50	< 51
Naphthalene	6,500	17,000	µg/kg	< 52	< 51	< 50	< 51	< 50	< 51	< 51	< 50	< 50	< 50	< 51	< 49	< 50	< 51
n-Butylbenzene	18,000,000	58,000,000	µg/kg	< 5.2	< 5.1	< 5.0	< 5.1	< 5.0	< 5.1	< 5.1	< 5.0	< 5.0	< 5.0	< 5.1	< 4.9	< 5.0	< 5.1
n-Propylbenzene	--	24,000,000	µg/kg	< 5.2	< 5.1	< 5.0	< 5.1	< 5.0	< 5.1	< 5.1	< 5.0	< 5.0	< 5.0	< 5.1	< 4.9	< 5.0	< 5.1
o-Chlorotoluene (2-chlorotoluene)	2,500,000	--	µg/kg	< 5.2	< 5.1	< 5.0	< 5.1	< 5.0	< 5.1	< 5.1	< 5.0	< 5.0	< 5.0	< 5.1	< 4.9	< 5.0	< 5.1
o-Xylene	--	2,800,000	µg/kg	< 5.2	< 5.1	< 5.0	< 5.1	< 5.0	< 5.1	< 5.1	< 5.0	< 5.0	< 5.0	< 5.1	< 4.9	< 5.0	< 5.1
sec-Butylbenzene	12,000,000	120,000,000	µg/kg	< 5.2	< 5.1	< 5.0	< 5.1	< 5.0	< 5.1	< 5.1	< 5.0	< 5.0	< 5.0	< 5.1	< 4.9	< 5.0	< 5.1
Styrene	32,000,000	35,000,000	µg/kg	< 5.2	< 5.1	< 5.0	< 5.1	< 5.0	< 5.1	< 5.1	< 5.0	< 5.0	< 5.0	< 5.1	< 4.9	< 5.0	< 5.1
tert-Amyl Methyl Ether		--	µg/kg	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 9.9	< 10	< 9.9	< 10	< 9.9	< 10	< 10
tert-Butyl alcohol		--	µg/kg	< 52	< 51	< 50	< 51	< 50	< 51	< 51	< 50	< 50	< 50	< 51	< 49	< 50	< 51
tert-Butylbenzene	12,000,000	--	µg/kg	< 5.2	< 5.1	< 5.0	< 5.1	< 5.0	< 5.1	< 5.1	< 5.0	< 5.0	< 5.0	< 5.1	< 4.9	< 5.0	< 5.1
Tetrachloroethene	2,700	100,000	µg/kg	< 5.2	< 5.1	< 5.0	< 5.1	< 5.0	< 5.1	< 5.1	< 5.0	< 5.0	< 5.0	< 5.1	< 4.9	< 5.0	< 5.1
Toluene	5,300,000	47,000,000	µg/kg	< 5.2	< 5.1	< 5.0	< 5.1	< 5.0	< 5.1	< 5.1	< 5.0	< 5.0	< 5.0	< 5.1	< 4.9	< 5.0	< 5.1
trans-1,2-Dichloroethene	600,000	23,000,000	µg/kg	< 5.2	< 5.1	< 5.0	< 5.1	< 5.0	< 5.1	< 5.1	< 5.0	< 5.0	< 5.0	< 5.1	< 4.9	< 5.0	< 5.1
trans-1,3-Dichloropropene	--	8,200	µg/kg	< 5.2	< 5.1	< 5.0	< 5.1	< 5.0	< 5.1	< 5.1	< 5.0	< 5.0	< 5.0	< 5.1	< 4.9	< 5.0	< 5.1
Trichloroethene	--	6,000	µg/kg	< 5.2	< 5.1	< 5.0	< 5.1	< 5.0	< 5.1	< 5.1	< 5.0	< 5.0	< 5.0	< 5.1	< 4.9	< 5.0	< 5.1
Vinyl acetate	--	3,800,000	µg/kg	< 52	< 51	< 50	< 51	< 50	< 51	< 51	< 50	< 50	< 50	< 51	< 49	< 50	< 51
Vinyl chloride	150	1,700	µg/kg	< 5.2	< 5.1	< 5.0	< 5.1	< 5.0	< 5.1	< 5.1	< 5.0	< 5.0	< 5.0	< 5.1	< 4.9	< 5.0	< 5.1

Notes:
< = Compound not detected at concentrations above the laboratory reporting detection limit. The laboratory reporting detection limit is shown.
***Bold** = Compound was detected above the laboratory reporting detection limit.*
Empty cells = Not analyzed
All analyses performed by Calscience Environmental Laboratories, Inc. (Calscience).
J+ = Estimated detection with high bias
****SFRWQCB ESL for motor oil for C25-C40, ESL for most conservative TPH product for C6-C44 (diesel); ESLs selected as per DTSC 2015.*
***LARWQCB Site Assessment and Cleanup Guidebook Table 4-1: Maximum Soil Screening Levels for TPH and BTEX above Drinking Water Aquifers, May 1996. For C6-C44, most conservative value selected.*
-- = Not Listed
** DTSC 2008 background value for Southern California (12 mg/kg)*
mg/kg = Milligrams per kilogram

Abbreviations:
bgs = Below ground surface
DTSC = Department of Toxic Substances Control Note 3, 2019
mg/kg = Milligrams per kilogram
NA = Not analyzed
RSL = Regional Screening Level
SL = Screening Level
USEPA = United States Environmental Protection Agency Regional Screening Levels, 2019
LARWQCB = Los Angeles Regional Water Quality Control Board
SFRWQCB = San Francisco Regional Water Quality Control Board
C = Carbon atom, shown above with number in molecular chain of a particular petroleum hydrocarbon compound.
µg/kg = Micrograms per kilogram

Table L-1
Summary of Detected Chemicals in Soil - 2017 Data - Block 1 and Block 2
Infineon Facility
El Segundo, California

			Location Group	Block 2							
			Sample Date	15-Mar-17	15-Mar-17	15-Mar-17	15-Mar-17	15-Mar-17	15-Mar-17	15-Mar-17	15-Mar-17
			Sample Type	N	N	N	N	N	N	N	N
Chemical	DTSC Note 3 SL (Commercial)	USEPA RSL (Commercial)	Sample ID	SBB2-1-0-1	SBB2-4-0-1	SBB2-5-3-4	SBB2-9-3-4	SBB2-10-2-3	SBB2-11-0-2	SBB2-12-7-8	SBB2-13-1-2
Metals											
Antimony	--	470	mg/kg	*< 0.735*	*< 0.721*	*< 0.728*	*< 0.761*	*< 0.739*	*< 0.765*	*< 0.765*	*< 0.761*
Arsenic	0.36 (12*)	--	mg/kg	**1.24**	**1.19**	**2.61**	*< 0.761*	*< 0.739*	**1.84**	**2.07**	**1.06**
Barium	--	220,000	mg/kg	**17.4**	**20.7**	**66.9**	**71.7**	**38.6**	**27.1**	**33.5**	**46.2**
Beryllium	230	--	mg/kg	*< 0.245*	*< 0.240*	*< 0.243*	**0.278**	*< 0.246*	*< 0.255*	**0.264**	**0.272**
Cadmium	780	--	mg/kg	*< 0.490*	*< 0.481*	**2.61**	*< 0.508*	*< 0.493*	*< 0.510*	*< 0.510*	*< 0.508*
Chromium	--	1,800,000.00	mg/kg	**15.2**	**13.9**	**17.8**	**15.3**	**13.2**	**25.6**	**27.6**	**14.5**
Chromium, VI	6.2	--	mg/kg						**1.1**	**1.1**	
Cobalt	--	350	mg/kg	**3.54**	**2.99**	**5.93**	**5.42**	**3.77**	**4.80**	**5.40**	**5.64**
Copper	--	47,000	mg/kg	**2.73**	**4.21**	**17.9**	**6.17**	**3.86**	**4.16**	**4.51**	**4.77**
Lead	320	--	mg/kg	**1.55**	**1.52**	**65.5**	**3.16**	**2.72**	**2.67**	**2.79**	**2.95**
Mercury	4.4	--	mg/kg	*< 0.0806*	*< 0.0820*	*< 0.0794*	*< 0.0833*	*< 0.0794*	*< 0.0877*	*< 0.0833*	**0.441**
Molybdenum	--	5,800	mg/kg	*< 0.245*	**0.343**	**0.463**	*< 0.254*	*< 0.246*	*< 0.255*	*< 0.255*	*< 0.254*
Nickel	11,000	--	mg/kg	**6.53**	**6.45**	**8.84**	**8.39**	**5.51**	**9.18**	**9.22**	**8.01**
Selenium	--	5,800	mg/kg	*< 0.735*	*< 0.721*	**3.98**	*< 0.761*	*< 0.739*	*< 0.765*	*< 0.765*	*< 0.761*
Silver	--	5,800	mg/kg	*< 0.245*	*< 0.240*	*< 0.243*	*< 0.254*	*< 0.246*	*< 0.255*	*< 0.255*	*< 0.254*
Thallium	--	12	mg/kg	*< 0.735*	*< 0.721*	*< 0.728*	*< 0.761*	*< 0.739*	*< 0.765*	*< 0.765*	*< 0.761*
Vanadium	--	5,800	mg/kg	**14.5**	**15.0**	**29.1**	**25.6**	**21.9**	**25.9**	**25.6**	**24.3**
Zinc	--	350,000	mg/kg	**8.29**	**9.20**	**66.3**	**19.5**	**13.8**	**13.2**	**15.3**	**17.3**
	SFRWQCB	LARWQCB									
TPH	ESL***	SSL**									
C11-C12	*1,200*	*500*	mg/kg	*< 5.0*	*< 5.0*	*< 5.1*	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.1*	*< 5.1*
C25-C28	*180,000*	*10,000*	mg/kg	*< 5.0*	*< 5.0*	**36**	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.1*	*< 5.1*
C29-C32	*180,000*	*10,000*	mg/kg	*< 5.0*	*< 5.0*	**52**	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.1*	*< 5.1*
C33-C36	*180,000*	*10,000*	mg/kg	*< 5.0*	*< 5.0*	**33**	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.1*	*< 5.1*
C37-C40	*180,000*	*10,000*	mg/kg	*< 5.0*	*< 5.0*	**16**	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.1*	*< 5.1*
C41-C44	*180,000*	*10,000*	mg/kg	*< 5.0*	*< 5.0*	*< 5.1*	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.1*	*< 5.1*
C6	*1,200*	*500*	mg/kg	*< 5.0*	*< 5.0*	*< 5.1*	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.1*	*< 5.1*
C6-C44-TOTAL	*1,200*	*500*	mg/kg	*< 5.0*	*< 5.0*	**180**	*< 5.1*	*< 4.9*	**12**	*< 5.1*	*< 5.1*
C7	*1,200*	*500*	mg/kg	*< 5.0*	*< 5.0*	*< 5.1*	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.1*	*< 5.1*
C8	*1,200*	*500*	mg/kg	*< 5.0*	*< 5.0*	*< 5.1*	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.1*	*< 5.1*
C9-C10	*1,200*	*500*	mg/kg	*< 5.0*	*< 5.0*	*< 5.1*	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.1*	*< 5.1*
EFH(C13-C14)	*1,200*	*500*	mg/kg	*< 5.0*	*< 5.0*	*< 5.1*	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.1*	*< 5.1*
EFH(C15-C16)	*1,200*	*500*	mg/kg	*< 5.0*	*< 5.0*	*< 5.1*	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.1*	*< 5.1*
EFH(C17-C18)	*1,200*	*500*	mg/kg	*< 5.0*	*< 5.0*	*< 5.1*	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.1*	*< 5.1*
EFH(C19-C20)	*180,000*	*1,000*	mg/kg	*< 5.0*	*< 5.0*	**15**	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.1*	*< 5.1*
EFH(C21-C22)	*180,000*	*1,000*	mg/kg	*< 5.0*	*< 5.0*	**11**	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.1*	*< 5.1*
EFH(C23-C24)	*180,000*	*1,000*	mg/kg	*< 5.0*	*< 5.0*	**14**	*< 5.1*	*< 4.9*	*< 5.0*	*< 5.1*	*< 5.1*

Table L-1
Summary of Detected Chemicals in Soil - 2017 Data - Block 1 and Block 2
Infineon Facility
El Segundo, California

Chemical	DTSC Note 3 SL (Commercial)	USEPA RSL (Commercial)	Location Group	Block 2							
			Sample Date	15-Mar-17	15-Mar-17	15-Mar-17	15-Mar-17	15-Mar-17	15-Mar-17	15-Mar-17	15-Mar-17
			Sample Type	N	N	N	N	N	N	N	N
			Sample ID	SBB2-1-0-1	SBB2-4-0-1	SBB2-5-3-4	SBB2-9-3-4	SBB2-10-2-3	SBB2-11-0-2	SBB2-12-7-8	SBB2-13-1-2
VOCs	**DTSC Note 3 SL (Commercial)**	**USEPA RSL (Commercial)**									
1,1,1,2-Tetrachloroethane	8,800	8,800	µg/kg	*< 5.2*	*< 5.2*	*< 4.9*	*< 5.1*	*< 5.0*	*< 5.2*	*< 4.8*	*< 5.1*
1,1,1-Trichloroethane	7,200,000	36,000,000	µg/kg	*< 5.2*	*< 5.2*	*< 4.9*	*< 5.1*	*< 5.0*	*< 5.2*	*< 4.8*	*< 5.1*
1,1,2,2-Tetrachloroethane	2,700	2,700	µg/kg	*< 5.2*	*< 5.2*	*< 4.9*	*< 5.1*	*< 5.0*	*< 5.2*	*< 4.8*	*< 5.1*
1,1,2-Trichloroethane	--	5,000	µg/kg	*< 5.2*	*< 5.2*	*< 4.9*	*< 5.1*	*< 5.0*	*< 5.2*	*< 4.8*	*< 5.1*
1,1-Dichloroethane	16,000	16,000	µg/kg	*< 5.2*	*< 5.2*	*< 4.9*	*< 5.1*	*< 5.0*	*< 5.2*	*< 4.8*	*< 5.1*
1,1-Dichloroethene	350,000	1,000,000	µg/kg	*< 5.2*	*< 5.2*	*< 4.9*	*< 5.1*	*< 5.0*	*< 5.2*	*< 4.8*	*< 5.1*
1,1-Dichloropropene	--	--	µg/kg	*< 5.2*	*< 5.2*	*< 4.9*	*< 5.1*	*< 5.0*	*< 5.2*	*< 4.8*	*< 5.1*
1,2,3-Trichlorobenzene	300,000	930,000	µg/kg	*< 10*	*< 10*	*< 9.8*	*< 10*	*< 10*	*< 10*	*< 9.7*	*< 10*
1,2,3-Trichloropropane	21	110	µg/kg	*< 5.2*	*< 5.2*	*< 4.9*	*< 5.1*	*< 5.0*	*< 5.2*	*< 4.8*	*< 5.1*
1,2,4-Trichlorobenzene	35,000	110,000	µg/kg	*< 5.2*	*< 5.2*	*< 4.9*	*< 5.1*	*< 5.0*	*< 5.2*	*< 4.8*	*< 5.1*
1,2,4-Trimethylbenzene	--	1,800,000	µg/kg	*< 5.2*	*< 5.2*	*< 4.9*	*< 5.1*	*< 5.0*	*< 5.2*	*< 4.8*	*< 5.1*
1,2-Dibromo-3-chloropropane	57	64	µg/kg	*< 10*	*< 10*	*< 9.8*	*< 10*	*< 10*	*< 10*	*< 9.7*	*< 10*
1,2-Dichlorobenzene	--	9,300,000	µg/kg	*< 5.2*	*< 5.2*	*< 4.9*	*< 5.1*	*< 5.0*	*< 5.2*	*< 4.8*	*< 5.1*
1,2-Dichloroethane	--	2,000	µg/kg	*< 5.2*	*< 5.2*	*< 4.9*	*< 5.1*	*< 5.0*	*< 5.2*	*< 4.8*	*< 5.1*
1,2-Dichloropropane	--	11,000	µg/kg	*< 5.2*	*< 5.2*	*< 4.9*	*< 5.1*	*< 5.0*	*< 5.2*	*< 4.8*	*< 5.1*
1,3,5-Trimethylbenzene	--	1,500,000	µg/kg	*< 5.2*	*< 5.2*	*< 4.9*	*< 5.1*	*< 5.0*	*< 5.2*	*< 4.8*	*< 5.1*
1,3-Dichlorobenzene	--	--	µg/kg	*< 5.2*	*< 5.2*	*< 4.9*	*< 5.1*	*< 5.0*	*< 5.2*	*< 4.8*	*< 5.1*
1,3-Dichloropropane	2,200,000	23,000,000	µg/kg	*< 5.2*	*< 5.2*	*< 4.9*	*< 5.1*	*< 5.0*	*< 5.2*	*< 4.8*	*< 5.1*
1,4-Dichlorobenzene	--	11,000	µg/kg	*< 5.2*	*< 5.2*	*< 4.9*	*< 5.1*	*< 5.0*	*< 5.2*	*< 4.8*	*< 5.1*
2,2-Dichloropropane	--	--	µg/kg	*< 5.2*	*< 5.2*	*< 4.9*	*< 5.1*	*< 5.0*	*< 5.2*	*< 4.8*	*< 5.1*
2-Butanone	--	190,000,000	µg/kg	*< 52*	*< 52*	*< 49*	*< 51*	*< 50*	*< 52*	*< 48*	*< 51*
2-Hexanone	--	1,300,000	µg/kg	*< 52*	*< 52*	*< 49*	*< 51*	*< 50*	*< 52*	*< 48*	*< 51*
4-Chlorotoluene	2,300,000	--	µg/kg	*< 5.2*	*< 5.2*	*< 4.9*	*< 5.1*	*< 5.0*	*< 5.2*	*< 4.8*	*< 5.1*
4-Isopropyltoluene	--	--	µg/kg	*< 5.2*	*< 5.2*	*< 4.9*	*< 5.1*	*< 5.0*	*< 5.2*	*< 4.8*	*< 5.1*
4-Methyl-2-pentanone	--	140,000,000	µg/kg	*< 52*	*< 52*	*< 49*	*< 51*	*< 50*	*< 52*	*< 48*	*< 51*
Acetone	--	670,000,000	µg/kg	*< 130*	*< 130*	*< 120*	*< 130*	*< 120*	*< 130*	*< 120*	*< 130*
Benzene	1,400	5,100	µg/kg	*< 5.2*	*< 5.2*	*< 4.9*	*< 5.1*	*< 5.0*	*< 5.2*	*< 4.8*	*< 5.1*
Bromobenzene	--	1,800,000	µg/kg	*< 5.2*	*< 5.2*	*< 4.9*	*< 5.1*	*< 5.0*	*< 5.2*	*< 4.8*	*< 5.1*
Bromodichloromethane	1,300	1,300	µg/kg	*< 5.2*	*< 5.2*	*< 4.9*	*< 5.1*	*< 5.0*	*< 5.2*	*< 4.8*	*< 5.1*
Bromoform	86,000	86,000	µg/kg	*< 5.2*	*< 5.2*	*< 4.9*	*< 5.1*	*< 5.0*	*< 5.2*	*< 4.8*	*< 5.1*
Carbon disulfide	--	3,500,000	µg/kg	*< 52*	*< 52*	*< 49*	*< 51*	*< 50*	*< 52*	*< 48*	*< 51*

Table L-1
Summary of Detected Chemicals in Soil - 2017 Data - Block 1 and Block 2
Infineon Facility
El Segundo, California

Chemical	DTSC Note 3 SL (Commercial)	USEPA RSL (Commercial)	Location Group	Block 2							
			Sample Date	15-Mar-17	15-Mar-17	15-Mar-17	15-Mar-17	15-Mar-17	15-Mar-17	15-Mar-17	15-Mar-17
			Sample Type	N	N	N	N	N	N	N	N
			Sample ID	SBB2-1-0-1	SBB2-4-0-1	SBB2-5-3-4	SBB2-9-3-4	SBB2-10-2-3	SBB2-11-0-2	SBB2-12-7-8	SBB2-13-1-2
Carbon tetrachloride	2,900	2,900	µg/kg	*< 5.2*	*< 5.2*	*< 4.9*	*< 5.1*	*< 5.0*	*< 5.2*	*< 4.8*	*< 5.1*
Chlorobenzene	--	1,300,000	µg/kg	*< 5.2*	*< 5.2*	*< 4.9*	*< 5.1*	*< 5.0*	*< 5.2*	*< 4.8*	*< 5.1*
Chlorobromomethane	--	630,000	µg/kg	*< 5.2*	*< 5.2*	*< 4.9*	*< 5.1*	*< 5.0*	*< 5.2*	*< 4.8*	*< 5.1*
Chloroethane	--	57,000,000	µg/kg	*< 5.2*	*< 5.2*	*< 4.9*	*< 5.1*	*< 5.0*	*< 5.2*	*< 4.8*	*< 5.1*
Chloroform	--	1,400	µg/kg	*< 5.2*	*< 5.2*	*< 4.9*	*< 5.1*	*< 5.0*	*< 5.2*	*< 4.8*	*< 5.1*
cis-1,2-Dichloroethene	84,000	2,300,000	µg/kg	*< 5.2*	*< 5.2*	*< 4.9*	*< 5.1*	*< 5.0*	*< 5.2*	*< 4.8*	*< 5.1*
cis-1,3-Dichloropropene	--	8,200	µg/kg	*< 5.2*	*< 5.2*	*< 4.9*	*< 5.1*	*< 5.0*	*< 5.2*	*< 4.8*	*< 5.1*
Dibromochloromethane	--	39,000	µg/kg	*< 5.2*	*< 5.2*	*< 4.9*	*< 5.1*	*< 5.0*	*< 5.2*	*< 4.8*	*< 5.1*
Dibromomethane		99,000	µg/kg	*< 5.2*	*< 5.2*	*< 4.9*	*< 5.1*	*< 5.0*	*< 5.2*	*< 4.8*	*< 5.1*
Ethanol	--	--	µg/kg	*< 260*	*< 260*	*< 250*	*< 260*	*< 250*	*< 260*	*< 240*	*< 250*
Ethylbenzene	--	25,000	µg/kg	*< 5.2*	*< 5.2*	*< 4.9*	*< 5.1*	*< 5.0*	*< 5.2*	*< 4.8*	*< 5.1*
Ethylene dibromide	160	--	µg/kg	*< 5.2*	*< 5.2*	*< 4.9*	*< 5.1*	*< 5.0*	*< 5.2*	*< 4.8*	*< 5.1*
Ethyl-tert-butyl ether	--	--	µg/kg	*< 10*	*< 10*	*< 9.8*	*< 10*	*< 10*	*< 10*	*< 9.7*	*< 10*
Freon 11	5,400,000	--	µg/kg	*< 52*	*< 52*	*< 49*	*< 51*	*< 50*	*< 52*	*< 48*	*< 51*
Freon 113	--	28,000,000	µg/kg	*< 52*	*< 52*	*< 49*	*< 51*	*< 50*	*< 52*	*< 48*	*< 51*
Freon 12	--	370,000	µg/kg	*< 5.2*	*< 5.2*	*< 4.9*	*< 5.1*	*< 5.0*	*< 5.2*	*< 4.8*	*< 5.1*
Isopropyl ether	--	--	µg/kg	*< 10*	*< 10*	*< 9.8*	*< 10*	*< 10*	*< 10*	*< 9.7*	*< 10*
Isopropylbenzene (Cumene)	--	9,900,000	µg/kg	*< 5.2*	*< 5.2*	*< 4.9*	*< 5.1*	*< 5.0*	*< 5.2*	*< 4.8*	*< 5.1*
m,p-Xylenes	--	2,800,000	µg/kg	*< 5.2*	*< 5.2*	*< 4.9*	*< 5.1*	*< 5.0*	*< 5.2*	*< 4.8*	*< 5.1*
Methyl bromide	--	30,000	µg/kg	*< 26*	*< 26*	*< 25*	*< 26*	*< 25*	*< 26*	*< 24*	*< 25*
Methyl chloride	--	460,000	µg/kg	*< 26*	*< 26*	*< 25*	*< 26*	*< 25*	*< 26*	*< 24*	*< 25*
Methyl tert-butyl ether	--	210,000	µg/kg	*< 5.2*	*< 5.2*	*< 4.9*	*< 5.1*	*< 5.0*	*< 5.2*	*< 4.8*	*< 5.1*
Methylene chloride	26,000	1,000,000	µg/kg	*< 52*	*< 52*	*< 49*	*< 51*	*< 50*	*< 52*	*< 48*	*< 51*
Naphthalene	6,500	17,000	µg/kg	*< 52*	*< 52*	*< 49*	*< 51*	*< 50*	*< 52*	*< 48*	*< 51*
n-Butylbenzene	18,000,000	58,000,000	µg/kg	*< 5.2*	*< 5.2*	*< 4.9*	*< 5.1*	*< 5.0*	*< 5.2*	*< 4.8*	*< 5.1*
n-Propylbenzene	--	24,000,000	µg/kg	*< 5.2*	*< 5.2*	*< 4.9*	*< 5.1*	*< 5.0*	*< 5.2*	*< 4.8*	*< 5.1*
o-Chlorotoluene (2-chlorotoluene)	2,500,000	--	µg/kg	*< 5.2*	*< 5.2*	*< 4.9*	*< 5.1*	*< 5.0*	*< 5.2*	*< 4.8*	*< 5.1*
o-Xylene	--	2,800,000	µg/kg	*< 5.2*	*< 5.2*	*< 4.9*	*< 5.1*	*< 5.0*	*< 5.2*	*< 4.8*	*< 5.1*
sec-Butylbenzene	12,000,000	120,000,000	µg/kg	*< 5.2*	*< 5.2*	*< 4.9*	*< 5.1*	*< 5.0*	*< 5.2*	*< 4.8*	*< 5.1*
Styrene	32,000,000	35,000,000	µg/kg	*< 5.2*	*< 5.2*	*< 4.9*	*< 5.1*	*< 5.0*	*< 5.2*	*< 4.8*	*< 5.1*
tert-Amyl Methyl Ether		--	µg/kg	*< 10*	*< 10*	*< 9.8*	*< 10*	*< 10*	*< 10*	*< 9.7*	*< 10*
tert-Butyl alcohol		--	µg/kg	*< 52*	*< 52*	*< 49*	*< 51*	*< 50*	*< 52*	*< 48*	*< 51*
tert-Butylbenzene	12,000,000	--	µg/kg	*< 5.2*	*< 5.2*	*< 4.9*	*< 5.1*	*< 5.0*	*< 5.2*	*< 4.8*	*< 5.1*
Tetrachloroethene	2,700	100,000	µg/kg	*< 5.2*	*< 5.2*	**21**	*< 5.1*	*< 5.0*	*< 5.2*	*< 4.8*	*< 5.1*
Toluene	5,300,000	47,000,000	µg/kg	*< 5.2*	*< 5.2*	*< 4.9*	*< 5.1*	*< 5.0*	*< 5.2*	*< 4.8*	*< 5.1*
trans-1,2-Dichloroethene	600,000	23,000,000	µg/kg	*< 5.2*	*< 5.2*	*< 4.9*	*< 5.1*	*< 5.0*	*< 5.2*	*< 4.8*	*< 5.1*
trans-1,3-Dichloropropene	--	8,200	µg/kg	*< 5.2*	*< 5.2*	*< 4.9*	*< 5.1*	*< 5.0*	*< 5.2*	*< 4.8*	*< 5.1*
Trichloroethene	--	6,000	µg/kg	*< 5.2*	*< 5.2*	*< 4.9*	*< 5.1*	*< 5.0*	*< 5.2*	*< 4.8*	*< 5.1*
Vinyl acetate	--	3,800,000	µg/kg	*< 52*	*< 52*	*< 49*	*< 51*	*< 50*	*< 52*	*< 48*	*< 51*
Vinyl chloride	150	1,700	µg/kg	*< 5.2*	*< 5.2*	*< 4.9*	*< 5.1*	*< 5.0*	*< 5.2*	*< 4.8*	*< 5.1*

Notes:
< = Compound not detected at concentrations above the laboratory reporting detection limit. Th
***Bold** = Compound was detected above the laboratory reporting detection limit.*
Empty cells = Not analyzed
All analyses performed by Calscience Environmental Laboratories, Inc. (Calscience).
J+ = Estimated detection with high bias
****SFRWQCB ESL for motor oil for C25-C40, ESL for most conservative TPH product for C6-C*
***LARWQCB Site Assessment and Cleanup Guidebook Table 4-1: Maximum Soil Screening Le*
Aquifers, May 1996. For C6-C44, most conservative value selected.
-- = Not Listed
** DTSC 2008 background value for Southern California (12 mg/kg)*
mg/kg = Milligrams per kilogram

Table L-2

Summary of Detected VOCs in Soil Samples - 2018 - Block 1

Infineon Facility

El Segundo, California

				Analytes (µg/kg)	
Soil Boring	Sample Identification	Sample Date	Sample Depth (feet bgs)	1,2-Dichlorobenzene	Tetrachloroethene
B1-1	B1-1-10	19-Mar-18	10	*< 1.1*	*< 1.1*
	B1-1-22	19-Mar-18	22	*< 1.1*	*< 1.1*
	B1-1-33	19-Mar-18	33	*< 1.0*	*< 1.0*
	B1-1-53	19-Mar-18	53	*< 1.1*	**1.3**
	B1-1-80	19-Mar-18	80	*< 1.1*	*< 1.1*
B1-2	B1-2-6	23-Mar-18	6	*< 0.97*	*< 0.97*
	B1-2-25	23-Mar-18	25	*< 0.89*	**1.9**
	B1-2-32	23-Mar-18	32	*< 1.1*	*< 1.1*
	B1-2-49	23-Mar-18	49	*< 1.1*	*< 1.1*
	B1-2-80	23-Mar-18	80	*< 1.1*	*< 1.1*
B1-3	B1-3-4	21-Mar-18	4	*< 0.97*	*< 0.97*
	B1-3-17	21-Mar-18	17	*< 1.0*	*< 1.0*
	B1-3-29	21-Mar-18	29	*< 0.98*	*< 0.98*
	B1-3-54	21-Mar-18	54	*< 1.1*	**1.9**
	B1-3-80	21-Mar-18	80	*< 1.2*	*< 1.2*
B1-4	B1-4-13	22-Mar-18	13	*< 0.96*	*< 0.96*
	B1-4-22	22-Mar-18	22	*< 0.97*	*< 0.97*
	B1-4-32	22-Mar-18	32	*< 1.0*	*< 1.0*
	B1-4-48	22-Mar-18	48	*< 1.1*	*< 1.1*
	B1-4-80	22-Mar-18	80	*< 1.1*	*< 1.1*
B1-5	B1-5-10	20-Mar-18	10	*< 0.92*	**30**
	B1-5-22	20-Mar-18	22	*< 0.93*	**40**
	B1-5-33	20-Mar-18	33	**5.7**	**47**
	B1-5-53	20-Mar-18	53	*< 1.1*	**4.5**
	B1-5-80	20-Mar-18	80	*< 1.1*	**2.4**

Notes:
< = Compound not detected. Reportable detection limit shown.
SW8260B analyses performed by Calscience Environmental Laboratories, Inc.
Tetrachloroethene Commercial Screening Levels (µg/kg): 100,000 (USEPA RSL); 2,700 (DTSC Note 3 SL)
1,2-Dichlorobenzene Commercial Screening Levels (µg/kg): 9,300,000 (USEPA RSL); Not established (DTSC Note 3 SL)

Abbreviations:
µg/kg = Micrograms per kilogram
bgs = Below ground surface
DTSC = Department of Toxic Substances Control
FD = Field Duplicate Sample
RSL = Regional screening level
SL = Screening level
USEPA = United States Environmental Protection Agency

Table L-3
Summary of Detected VOCs in Soil Samples - 2018 - Block 2
Infineon Facility
El Segundo, California

				Analytes (µg/kg)	
Soil Boring	Sample Identification	Sample Date	Sample Depth (feet bgs)	Tetrachloroethene	Trichloroethene
B2-1	B2-1-6	29-Mar-18	6	*< 0.96*	*< 1.9*
	B2-1-18	29-Mar-18	18	*< 0.96*	*< 1.9*
	B2-1-42	29-Mar-18	42	*< 1.1*	*< 2.2*
	B2-1-52	29-Mar-18	52	*< 1.1*	*< 2.2*
	B2-1-80	29-Mar-18	80	*< 1.1*	*< 2.2*
B2-2	B2-2-7	12-Mar-18	7	**1.3**	*< 1.7*
	B2-2-19	12-Mar-18	19	*< 1.2*	*< 2.4*
	B2-2-46	12-Mar-18	46	*< 1.0*	*< 2.1*
	B2-2-65	12-Mar-18	65	**1.7**	*< 2.1*
	B2-2-80	12-Mar-18	80	**1.7**	*< 2.4*
B2-3	B2-3-5	13-Mar-18	5	**4.9**	**2.1**
	B2-3-17	13-Mar-18	17	*< 1.0*	*< 2.0*
	B2-3-29	13-Mar-18	29	*< 1.0*	*< 2.1*
	B2-3-54	13-Mar-18	54	*< 1.1*	*< 2.2*
B2-4	B2-4-5	28-Mar-18	5	*< 0.79*	*< 1.6*
	B2-4-12	28-Mar-18	12	*< 0.93*	*< 1.9*
	B2-4-27	28-Mar-18	27	*< 1.0*	*< 2.0*
	B2-4-55	28-Mar-18	55	*< 1.2*	*< 2.3*
	B2-4-80	28-Mar-18	80	**1.8**	*< 2.1*
B2-5	B2-5-5	26-Mar-18	5	*< 0.87*	*< 1.7*
	B2-5-15	26-Mar-18	15	*< 1.0*	*< 2.0*
	B2-5-39	26-Mar-18	39	*< 1.0*	*< 2.1*
	B2-5-55	26-Mar-18	55	*< 1.1*	*< 2.2*
	B2-5-80	26-Mar-18	80	*< 1.1*	*< 2.3*
B2-6	B2-6-5	16-Mar-18	5	**3.5**	**1.9**
	B2-6-16	16-Mar-18	16	*< 1.0*	*< 2.1*
	B2-6-28	16-Mar-18	28	*< 1.1*	*< 2.2*
	B2-6-55	16-Mar-18	55	*< 1.1*	*< 2.2*
	B2-6-80	16-Mar-18	80	**2.3**	*< 2.2*
B2-7	B2-7-6	15-Mar-18	6	**2.3**	*< 1.8*
	B2-7-13	15-Mar-18	13	*< 1.2*	*< 2.3*
	B2-7-28	15-Mar-18	28	*< 1.1*	*< 2.1*
	B2-7-55	15-Mar-18	55	*< 1.1*	*< 2.2*
	B2-7-80	15-Mar-18	80	*< 1.4*	*< 2.7*
B2-8	B2-8-5	27-Mar-18	5	**1.1**	*< 1.8*
	B2-8-17	27-Mar-18	17	*< 1.1*	*< 2.1*
	B2-8-28	27-Mar-18	28	*< 1.0*	*< 2.1*
	B2-8-55	27-Mar-18	55	*< 1.1*	*< 2.2*
	B2-8-80	27-Mar-18	80	*< 1.1*	*< 2.3*

Notes:
< = Compound not detected. Reportable detection limit shown.
***Bold** = Concentrations above the Reportable Detection Limit.*
SW8260B analyses performed by Calscience Environmental Laboratories, Inc.
Tetrachloroethene Commercial Screening Levels (µg/kg): 2,700 (DTSC Note 3 SL); 100,000 (USEPA RSL)
Trichloroethene Commercial Screening Levels (µg/kg): 6,000 (USEPA RSL); Not Established (DTSC Note 3 SL)

Abbreviations:
µg/kg = Micrograms per kilogram
bgs = Below ground surface
DTSC = Department of Toxic Substances Control
RSL = Regional screening level
SL = Screening level
USEPA = United States Environmental Protection Agency
VOC = Volatile organic compound

Table L-4
Summary of VOCs in Soil Vapor
Infineon Facility - Block 1
El Segundo, California

Sample ID	Screening Levels		Screening Levels		SV-1	SV-10	SV-14	SV-15	SV-16	SV-17	SV-18	SV-21
Sample Date Depth (ft bgs)	(µg/m3) (AF =0.001)	Basis[a]	(µg/m3) (AF=0.03)	Basis[a]	3/17/2017 5	3/17/2017 5	3/17/2017 5	3/17/2017 5	3/17/2017 5	3/17/2017 5	3/17/2017 5	3/17/2017 5
					Results (µg/m^3)							
Chloroform (Trichloromethane)	*530*	*USEPA*	*18*	*USEPA*	<3.0	**11.9**	**11.1**	<3.0	<3.0	<3.0	<3.0	5.91
1,1-Dichloroethene	*310,000*	*DTSC*	*10,333*	*DTSC*	<3.0	<3.0	<3.0	**12.8**	<3.0	**8.28**	<3.0	<1.5
cis-1,2-Dichloroethene	*35,000*	*DTSC*	*1,167*	*DTSC*	<3.0	<3.0	<3.0	**13.2**	<3.0	<3.0	<3.0	<1.5
1,4-Dioxane	*2,500*	*USEPA*	*83*	*USEPA*	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	**28.1**
Ethylbenzene	*4,900*	*USEPA*	*163*	*USEPA*	**10.4**	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<1.5
Tetrachloroethene	*2,000*	*DTSC*	*67*	*DTSC*	**1,560**	**76,300**	**9,020**	**3,570**	**1,890**	**1,630**	**4,690**	**3,620**
Toluene (Methyl benzene)	*1,300,000*	*DTSC*	*43,333*	*DTSC*	**8.63**	**9.57**	<2.0	<2.0	<2.0	<2.0	<2.0	5.84
Trichloroethene	*3,000*	*USEPA*	*100*	*USEPA*	**23.6**	**574**	**886**	**1,290**	**493**	**794**	**2,080**	**356**
Trichlorofluoromethane	*5,300,000*	*DTSC*	*176,667*	*DTSC*	<4.0	**13.0**	<4.0	<4.0	<4.0	<4.0	<4.0	<2.0
Trichlorotrifluoroethane (Freon-113)	*2,200,000*	*USEPA*	*73,333*	*USEPA*	<5.0	**188**	<5	**128**	**39.3**	**142**	**212**	<2.5
1,2,4-Trimethylbenzene	*260,000*	*USEPA*	*8,667*	*USEPA*	**20.5**	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<1.5
1,3,5-Trimethylbenzene	*260,000*	*USEPA*	*8,667*	*USEPA*	**9.29**	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<1.5
o-Xylene	*440,000*	*USEPA*	*14,667*	*USEPA*	**18.4**	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	**4.82**
m,p-Xylenes	*440,000*	*USEPA*	*14,667*	*USEPA*	**45.9**	**8.38**	<4.0	<4.0	<4.0	<4.0	8.20	**13.0**

Notes:

Table lists only those VOCs detected at or above the laboratory reporting limit.

< = Indicates constituent not detected above indicated laboratory reporting limit.

Bold *= Detection*

a = Screening Levels from DTSC Office of Human and Ecological Risk Note 3 (DTSC, 2019; primary) and USEPA RSLs Commercial/Industrial (USEPA, 2019), adapted to calculate soil vapor screening levels by applying DTSC Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air (Vapor Intrusion Guidance) – Final (DTSC, 2011) and DTSC Note 4 (2019) alternative AF of 0.03.

Abbreviations:

µg/m^3 = Micrograms per cubic meter

bgs = Below ground surface

DTSC = Department of Toxic Substances Control

RSL = Regional Screening Level

USEPA = United States Environmental Protection Agency

VOC = Volatile organic compound

Table L-5
Summary of VOCs in Soil Vapor
Infineon Facility - Block 2
El Segundo, California

Sample ID Sample Date Depth (feet bgs) Laboratory Job Number	Screening Levels		Screening Levels		SVB2-1 3/20/2017 5 87046	SVB2-3 3/20/2017 5 87046	SVB2-5 3/20/2017 5 87046	SVB2-8 3/20/2017 5 87046	SVB2-9 3/20/2017 5 87046	SVB2-10 3/17/2017 5 87046	SVB2-11 3/20/2017 5 87046
	(µg/m^3) (AF =0.001)	Basis[a]	(µg/m^3) (AF=0.03)	Basis[a]	Results (µg/m^3)						
Acetone	*140,000,000*	*USEPA*	*4,666,667*	*USEPA*	**278**	<5.0	**164**	<10	<10	<10	<10
Benzene	*420*	*DTSC*	*14*	*DTSC*	<1.0	<1.0	<2.0	<2.0	**7.34**	**8.40**	**6.48**
Chloroform (Trichloromethane)	*530*	*USEPA*	*18*	*USEPA*	<1.5	<1.5	**27.1**	**47.2**	**82.5**	**50.8**	**140**
1,1-Dichloroethane	*3500000*	*DTSC*	*116667*	*DTSC*	<1.5	<1.5	<3.0	<3.0	<3.0	<3.0	**7.04**
1,1-Dichloroethene	*310,000*	*DTSC*	*10333*	*DTSC*	**6.22**	<1.5	**44.9**	**270**	**432**	**587**	**535**
cis-1,2-Dichloroethene	*35,000*	*DTSC*	*1167*	*DTSC*	**10.6**	<1.5	<3.0	**28.1**	**33.8**	**14.7**	**25.1**
Ethylbenzene	*4,900*	*USEPA*	*163*	*USEPA*	<1.5	<1.5	**11.5**	<3.0	<3.0	<3.0	<3.0
Tetrachloroethene	*2,000*	*DTSC*	*67*	*DTSC*	**231**	**80.7**	**28,500**	**10,300**	**31,300**	**21,860**	**22,800**
Tetrahydrofuran	*8,800,000*	*USEPA*	*293,333*	*USEPA*	**5.53**	<1.5	<3.0	<3.0	<3.0	<3.0	<3.0
Toluene (Methyl benzene)	*1,300,000*	*DTSC*	*43,333*	*DTSC*	**7.42**	**4.94**	<2.0	**35.6**	<2.0	<2.0	**55.4**
1,1,1-Trichloroethane	*4,400,000*	*DTSC*	*146,667*	*DTSC*	<1.5	<1.5	**50.7**	**32.1**	**68.7**	**78.0**	**92.2**
Trichloroethene	*3,000*	*USEPA*	*100*	*USEPA*	74.6	41.7	**10,200**	**5,430**	**17,310**	**11,340**	**8,382**
Trichlorofluoromethane	*5,300,000*	*DTSC*	*176,667*	*DTSC*	<2.0	<2.0	**33.7**	**150**	**35.6**	**70.2**	**977**
Trichlorotrifluoroethane (Freon-113)	*22,000,000*	*USEPA*	*733,333*	*USEPA*	**7.32**	<2.5	**106**	**46.3**	**103**	**133**	**104**
1,2,4-Trimethylbenzene	*260,000*	*USEPA*	*8,667*	*USEPA*	**10.2**	**8.11**	**14.6**	<3.0	<3.0	<3.0	<3.0
o-Xylene	*440,000*	*USEPA*	*14,667*	*USEPA*	**3.29**	**4.64**	**29.9**	**6.51**	<2.0	<2.0	<2.0
m,p-Xylenes	*440,000*	*USEPA*	*14,667*	*USEPA*	**4.51**	**6.94**	**64.4**	**11.0**	<4.0	<4.0	**9.55**

Notes:
Table lists only those VOCs detected at or above the laboratory reporting limit.
< = Indicates constituent not detected above indicated laboratory reporting limit.
***Bold** = Detection*
Shaded values exceed Screening Level.
a = Screening Levels from DTSC Office of Human and Ecological Risk Note 3 (DTSC, 2019)(primary) and USEPA RSLs Commercial/Industrial (USEPA, 2019), adapted to calculate soil vapor screening levels by applying DTSC Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air (Vapor Intrusion Guidance) – Final (DTSC, 2011)

Abbreviation:
µg/m^3 = Micrograms per cubic meter
bgs = Below ground surface
DTSC = Department of Toxic Substances Control
RSL = Regional Screening Level
VOC = Volatile organic compounds

Table L-6

Summary of Detected VOCs in 2018 Soil Vapor Samples

Infineon Facility - Block 1

El Segundo, California

Soil Boring	Sample Identification	Sample Depth (feet bgs)	Sample Date	Analytes (µg/m3)									
				Acetone	Trichlorofluoromethane (F11)	1,1-Dichloroethene	1,1,2 Trichlorotrifluoroethane (F113)	cis-1,2-Dichloroethene (cis-1,2-DCE)	Chloroform	1,1,1-Trichloroethane (1,1,1-TCA)	Benzene	Trichloroethene (TCE)	Tetrachloroethene (PCE)
			Screening Levels (µg/m^3) (0.001)	*140,000,000*	*5,300,000*	*310,000*	*22,000,000*	*35,000*	*530*	*4,400,000*	*420*	*3,000*	*2,000*
			Source	*USEPA*	*DTSC*	*DTSC*	*USEPA*	*DTSC*	*USEPA*	*DTSC*	*DTSC*	*USEPA*	*DTSC*
			Screening Levels (µg/m^3)(0.03)	*4,666,667*	*176,667*	*10,333*	*733,333*	*1,167*	*18*	*146,667*	*14*	*100*	*67*
			Source	*USEPA*	*DTSC*	*DTSC*	*USEPA*	*DTSC*	*USEPA*	*DTSC*	*DTSC*	*USEPA*	*DTSC*
B1-1	SV-B1-1-22	22	27-Mar-18	<10000	<1000	<1000	**6,800**	**1,200**	<200	<1000	<200	**64,000**	**130,000**
	SV-B1-1-33	33	27-Mar-18	<10000	<1000	<1000	**7,000**	**1,500**	<200	<1000	<200	**67,000**	**120,000**
	SV-B1-1-53	53	27-Mar-18	<10000	<1000	<1000	**8,400**	**1,600**	<200	<1000	<200	**73,000**	**150,000**
	SV-B1-1-80	80	27-Mar-18	**4,700**	**380**	**760**	**6,500**	**2,000**	**180**	**110**	**20**	**82,000**	**160,000**
B1-2	SV-B1-2-25	25	27-Mar-18	<5000	<500	<500	**4,600**	<500	<100	<500	<100	**7,700**	**36,000**
	SV-B1-2-32	32	27-Mar-18	<5000	<500	<500	**5,700**	**1,100**	**130**	<500	<100	**11,000**	**45,000**
	SV-B1-2-49	49	27-Mar-18	<10000	<1000	<1000	**8,000**	**1,700**	<200	<1000	<200	**15,000**	**60,000**
	SV-B1-2-80	80	27-Mar-18	<10000	<1000	<1000	**9,300**	**2,600**	**270**	<1000	<200	**21,000**	**81,000**
B1-3	SV-B1-3-17	17	27-Mar-18	<5000	<500	<500	**1,000**	<500	<100	<500	<100	**1,400**	**23,000**
	SV-B1-3-29	29	27-Mar-18	<5000	<500	<500	**1,900**	<500	<100	<500	<100	**3,900**	**40,000**
	SV-B1-3-54	54	27-Mar-18	<10000	<1000	<1000	**3,300**	<1000	<200	<1000	<200	**7,400**	**63,000**
	SV-B1-3-80	80	27-Mar-18	<10000	<1000	<1000	**4,400**	<1000	<200	<1000	<200	**12,000**	**90,000**
B1-4	SV-B1-4-22	22	28-Mar-18	<5000	<500	<500	**1,800**	<500	<100	<500	<100	**1,400**	**20,000**
	SV-B1-4-32	32	28-Mar-18	<5000	<500	<500	**4,400**	**750**	<100	<500	<100	**7,300**	**49,000**
	SV-B1-4-48	48	27-Mar-18	<10000	<1000	<1000	**5,900**	**1,200**	<200	<1000	<200	**8,700**	**55,000**
	SV-B1-4-80	80	27-Mar-18	<10000	<1000	<1000	**6,700**	**1,600**	<200	<1000	<200	**12,000**	**75,000**
B1-5	SV-B1-5-22	22	28-Mar-18	<10000	<1000	<1000	**3,900**	<1000	**550**	<1000	<200	**7,900**	**690,000**
	SV-B1-5-33	33	28-Mar-18	<10000	<1000	<1000	**5,800**	<1000	**230**	<1000	<200	**18,000**	**300,000**
	SV-B1-5-53	53	28-Mar-18	<10000	<1000	<1000	**6,600**	<1000	**210**	<1000	<200	**22,000**	**150,000**
	SV-B1-5-80	80	28-Mar-18	<10000	<1000	<1000	**7,000**	<1000	<200	<1000	<200	**25,000**	**150,000**

Notes:

Table lists only those VOCs detected at or above the laboratory reporting limit

< = Indicates constituent not detected above indicated laboratory reporting limit

***Bold** = Detection*

Shaded = values exceed Screening Level using the AF of 0.001

Screening levels are based on DTSC 2011, DTSC 2019 Human Ecological Risk Office Note 3, and USEPA RSLs Commercial/Industrial.

Abbreviations:

µg/m^3 = Milligrams per cubic meter

bgs = Below ground surface

DTSC = Department of Toxic Substances Control

RSL = Regional Screening Level

USEPA = United States Environmental Protection Agency

VOC = Volatile organic compound

Table L-7

Summary of Preliminary Detected VOCs in 2018 Soil Vapor Samples

Infineon Facility - Block 2

El Segundo, California

Soil Boring	Sample Identification	Sample Depth (feet bgs)	Sample Date	Analytes (µg/m³)									
				Acetone	Trichlorofluoromethane (F11)	1,1-Dichloroethene	1,1,2 Trichlorotrifluoroethane (F113)	cis-1,2-Dichloroethene (cis-1,2-DCE)	Chloroform	1,1,1- Trichloroethane (1,1,1-TCA)	Benzene	Trichloroethene (TCE)	Tetrachloroethene (PCE)
			Screening Levels (µg/m³) (0.001)	*140,000,000*	*5,300,000*	*310,000*	*22,000,000*	*35,000*	*530*	*4,400,000*	*420*	*3,000*	*2,000*
			Source	*USEPA*	*DTSC*	*DTSC*	*USEPA*	*DTSC*	*USEPA*	*DTSC*	*DTSC*	*USEPA*	*DTSC*
			Screening Levels (µg/m³)(0.03)	*4,666,667*	*176,667*	*10,333*	*733,333*	*1,167*	*18*	*146,667*	*14*	*100*	*67*
			Source	*USEPA*	*DTSC*	*DTSC*	*USEPA*	*DTSC*	*USEPA*	*DTSC*	*DTSC*	*USEPA*	*DTSC*
B2-1	SV-B2-1-18	18	2-Apr-18	**3,700**	<100	**220**	**950**	<100	**30**	<100	<20	**5,900**	**11,000**
	SV-B2-1-42	42	2-Apr-18	**2,600**	<200	**320**	**990**	**330**	**50**	<200	<40	**12,000**	**21,000**
	SV-B2-1-52	52	2-Apr-18	<5000	<500	<500	**1,500**	<500	<100	<500	<100	**17,000**	**31,000**
	SV-B2-1-80	80	2-Apr-18	<5000	<500	**550**	**1,800**	**680**	<100	<500	<100	**21,000**	**36,000**
B2-2	SV-B2-2-19	19	29-Mar-18	**9,800**	<100	**510**	**330**	<100	**50**	<100	**40**	**7,900**	**9,200**
	SV-B2-2-46	46	29-Mar-18	<5000	<500	**1,400**	**710**	<500	**110**	<500	<100	**37,000**	**66,000**
	SV-B2-2-65	65	29-Mar-18	<5000	<500	**1,600**	**770**	<500	**120**	<500	<100	**38,000**	**66,000**
	SV-B2-2-80	80	29-Mar-18	<5000	<500	**1,500**	**790**	<500	<100	<500	<100	**31,000**	**57,000**
B2-3	SV-B2-3-17	17	29-Mar-18	**3,900**	**2,400**	**270**	**250**	<100	**80**	<100	**20**	**4,300**	**10,000**
	SV-B2-3-29	29	29-Mar-18	**4,600**	**1,600**	**310**	**270**	<100	**80**	<100	<20	**4,700**	**10,000**
	SV-B2-3-54	54	29-Mar-18	<5000	**1,200**	<500	<500	<500	**120**	<500	<100	**6,400**	**17,000**
	SV-B2-3-63	63	28-Mar-18	<5000	**1,100**	<500	<500	<500	**150**	<500	<100	**7,900**	**21,000**
B2-4	SV-B2-4-12	12	2-Apr-18	<2000	<200	**790**	<200	<200	**40**	<200	<40	**5,800**	**24,000**
	SV-B2-4-27	27	30-Mar-18	**8,000**	<200	**1,400**	<200	<200	**100**	<200	<40	**15,000**	**33,000**
	SV-B2-4-55	55	30-Mar-18	<5000	<500	**1,800**	<500	<500	**110**	<500	<100	**17,000**	**34,000**
	SV-B2-4-75	75	30-Mar-18	<5000	<500	**1,600**	<500	<500	**120**	<500	<100	**17,000**	**34,000**
B2-5	SV-B2-5-15	15	29-Mar-18	**2,800**	**130**	**290**	<100	<100	**60**	<100	<20	**2,700**	**8,100**
	SV-B2-5-39	39	29-Mar-18	**4,300**	**180**	**530**	**110**	<100	**120**	<100	<20	**4,900**	**12,000**
	SV-B2-5-55	55	29-Mar-18	<5000	<500	**650**	<500	<500	**140**	<500	<100	**6,700**	**18,000**
	SV-B2-5-80	80	29-Mar-18	<5000	<500	**820**	<500	<500	**200**	<500	<100	**9,300**	**28,000**
B2-6	SV-B2-6-16	16	28-Mar-18	<5000	<500	**1,000**	<500	<500	<100	<500	<100	**19,000**	**32,000**
	SV-B2-6-28	28	28-Mar-18	<5000	<500	**1,700**	<500	<500	**100**	<500	<100	**28,000**	**52,000**
	SV-B2-6-55	55	28-Mar-18	<5000	<500	**2,300**	<500	<500	**140**	<500	<100	**37,000**	**68,000**
	SV-B2-6-80	80	29-Mar-18	<5000	<500	**1,900**	<500	<500	**130**	<500	<100	**30,000**	**51,000**
B2-7	SV-B2-7-13	13	28-Mar-18	<5000	<500	**540**	<500	<500	<100	<500	<100	**18,000**	**38,000**
	SV-B2-7-28	28	28-Mar-18	<5000	<500	**1,200**	<500	<500	<100	<500	<100	**26,000**	**46,000**
	SV-B2-7-55	55	29-Mar-18	<5000	<500	**1,600**	**520**	<500	**120**	<500	<100	**30,000**	**54,000**
	SV-B2-7-80	80	28-Mar-18	<5000	<500	**1,900**	**590**	<500	**120**	<500	<100	**37,000**	**62,000**
B2-8	SV-B2-8-17	17	30-Mar-18	<5000	<500	**1,300**	<500	<500	<100	<500	<100	**20,000**	**28,000**
	SV-B2-8-28	28	30-Mar-18	**8,800**	<100	**2,200**	**380**	**410**	**130**	**180**	**20**	**45,000**	**59,000**
	SV-B2-8-55	55	30-Mar-18	<5000	<100	**3,300**	**520**	**580**	**140**	<500	<100	**52,000**	**73,000**
	SV-B2-8-80	80	30-Mar-18	<5000	<500	**3,600**	**620**	**550**	**140**	<500	<100	**48,000**	**57,000**

Notes:

Table lists only those VOCs detected at or above the laboratory reporting limit

< = Indicates constituent not detected above indicated laboratory reporting limit

Bold = Detection

Shaded = values exceed Screening Level using the AF of 0.001

Screening levels are based on DTSC 2011, DTSC 2019 Human Ecological Risk Office Note 3, and USEPA RSLs Commercial/Industrial 2019.

Abbreviations:

µg/m³ = Milligrams per cubic meter

bgs = Below ground surface

RSL = Regional Screening Level

USEPA = United States Environmental Protection Agency

VOC = Volatile organic compound

Table L-8

Summary of VOCs in Indoor Air Samples

Infineon Facility - Block 1

El Segundo, California

Sample Date	Sample ID	Units	Acetone	Chloromethane	Dichlorodifluoro-methane	Toluene
		SL - Commerical	*140,000*	*390*	*440*	*1,300*
		Source	*USEPA*	*USEPA*	*USEPA*	*DTSC*
3/13/2017	IA-13	µg/m^3	19	1.2	2.7	2.8
3/13/2017	IA-13D	µg/m^3	20	1.3	2.9	3.0
3/13/2017	IA-14	µg/m^3	20	1.3	2.9	2.8
3/13/2017	IA-15	µg/m^3	20	1.3	< 3.0	3.2
3/13/2017	IA-16	µg/m^3	21	1.3	2.9	3.3
3/13/2017	IA-17	µg/m^3	21	1.3	3.0	3.5
3/13/2017	IA-18	µg/m^3	24	1.4	3.1	3.5

Notes:

VOCs listed were detected in indoor air samples at concentrations at or exceeding laboratory reporting limits.

SLs are based on DTSC Office of Human and Ecological Risk Note 3 (DTSC, 2019)(primary) and USEPA RSLs Commercial/Ind

Abbreviations:

µg/m^3 = Micrograms per cubic meter

DTSC = Department of Toxic Substances Control

RSL = Regional Screening Level

SL = Screening Level

USEPA = United States Environmental Protection Agency

VOCs = Volatile organic compounds

Table L-9

Summary of VOCs Detected in Indoor Air Samples

Infineon Facility - Block 2

El Segundo, California

Sample Date	Sample ID	Units	Acetone	Benzene	Chloromethane	Dichlorodifluoro-methane	1,1-Difluoroethane	Isopropanol	Toluene
		SL - Commerical	*140,000*	*0.42*	*390*	*440*	*8*	*880*	*1,300*
		Source	*USEPA*	*DTSC*	*USEPA*	*USEPA*	*DTSC*	*USEPA*	*DTSC*
3/13/2017	IA-01	µg/m^3	29	**1.7**	2.0	3.0	9.8	440	4.0
3/13/2017	IA-01D	µg/m^3	28	**1.7**	1.9	3.0	9.1	450	3.6
3/13/2017	IA-03	µg/m^3	26	**1.7**	2.1	3.1	< 5.4	60	3.8
3/13/2017	IA-08	µg/m^3	21	< 1.6	1.9	3.5	< 5.4	< 12	2.2
3/13/2017	IA-11	µg/m^3	25	< 1.6	2.0	3.1	< 5.4	< 12	3.3

Notes:

VOCs listed were detected in indoor air samples at concentrations at or exceeding laboratory reporting limits.

SLs are based on DTSC Office of Human and Ecological Risk Note 3 (DTSC, 2019)(primary) and USEPA RSLs Commercial/Industrial (USEPA, 2019)

Values in bold exceed commercial screening levels (for benzene, the detected concentrations are typical of ambient air for the site area, based on the Los Angeles - North Main Street monitoring station, sampled in 2015 by the California Air Resources Board).

µg/m^3 = Micrograms per cubic meter

VOCs = Volatile organic compounds

Table L-10
Surface Soil (0-10) Data Summary and COPC Selection - Block 1
Infineon Facility
El Segundo, California

Analyte	Screening Levels	Screening Levels	Samples	Detects	Freq	Min Det	Max Det	Max Loc	COPC?	Rationale
Volatile Organic Compounds	**DTSC Note 3 SL (Commercial)**	**USEPA RSL (Commercial)**								
Tetrachloroethene	2.7	100	18	1	6%	0.03	0.03	B1-5-10	Yes	Detected
TPH	**SFRWQCB ESL*** **	**LARWQCB SSL****								
C11-C12	*1,200*	*500*	14	0	0%	NA	NA	NA	No	Not detected
C25-C28	*180,000*	*10,000*	14	3	21%	13	28	SB-3-0-1	Yes	Detected
C29-C32	*180,000*	*10,000*	14	4	29%	6.4	44	SB-3-0-1	Yes	Detected
C33-C36	*180,000*	*10,000*	14	3	21%	16	26	SB-3-0-1	Yes	Detected
C37-C40	*180,000*	*10,000*	14	2	14%	8.6	12	SB-9-0-1	Yes	Detected
C41-C44	*180,000*	*10,000*	14	0	0%	NA	NA	NA	No	Not detected
C6	*2,000*	*500*	14	0	0%	NA	NA	NA	No	Not detected
C6-C44-TOTAL	*1,200*	*500*	14	5	36%	12	120	SB-3-0-1	No	Individual C assessed
C7	*2,000*	*500*	14	0	0%	NA	NA	NA	No	Not detected
C8	*2,000*	*500*	14	0	0%	NA	NA	NA	No	Not detected
C9-C10	*2,000*	*500*	14	0	0%	NA	NA	NA	No	Not detected
EFH(C13-C14)	*1,200*	*1,000*	14	0	0%	NA	NA	NA	No	Not detected
EFH(C15-C16)	*1,200*	*1,000*	14	0	0%	NA	NA	NA	No	Not detected
EFH(C17-C18)	*1,200*	*1,000*	14	0	0%	NA	NA	NA	No	Not detected
EFH(C19-C20)	*180,000*	*1,000*	14	0	0%	NA	NA	NA	No	Not detected
EFH(C21-C22)	*180,000*	*1,000*	14	0	0%	NA	NA	NA	No	Not detected
EFH(C23-C24)	*180,000*	*1,000*	14	0	0%	NA	NA	NA	No	Not detected
Metals	**DTSC Note 3 SL (Commercial)**	**USEPA RSL (Commercial)**								
Arsenic	0.36 (12*)	--	14	8	57%	0.783	1.31	SB-10-1-2	No	Less than DTSC 2008 Background (12 mg/kg)
Barium	--	220,000	14	13	93%	15.8	59	SB-9-0-1	Yes	Detected
Cadmium	780	--	14	6	43%	0.557	5.84	SB-19-0-1	Yes	Detected
Chromium	--	1,800,000.00	14	13	93%	6.82	12.5	SB-10-1-2	Yes	Detected
Cobalt	--	350	14	13	93%	2.27	14.5	SB-6-0-1	Yes	Detected
Copper	--	47,000	14	13	93%	2.38	17	SB-19-0-1	Yes	Detected
Lead	320	--	14	13	93%	2.08	65	SB-9-0-1	No	Less than residential Note 3 (80 mg/kg)
Nickel	11,000	--	14	13	93%	2.79	8.94	SB-19-0-1	Yes	Detected
Selenium	--	5,800	14	9	64%	0.736	1.12	SB-9-0-1	Yes	Detected
Vanadium	--	5,800	14	13	93%	12.5	22.9	SB-9-0-1	Yes	Detected
Zinc	--	350,000	14	13	93%	9.45	237	SB-19-0-1	Yes	Detected

Notes:
All units mg/kg
****SFRWQCB ESL for motor oil for C25-C40, ESL for most conservative TPH product for "C6-C44" (diesel);*
gasoline for C5 to C10; ESLs selected as per DTSC 2015.
DTSC PEA Guidance Manual (2015) recommends SFRWQCB ESLs as they are derived for risk based analysis
***LARWQCB Site Assessment and Cleanup Guidebook Table 4-1: Maximum Soil Screening Levels for TPH and BTEX* above Drinking Water Aquifers, May 1996. For C6-C44, most conservative value selected.
-- = Not Listed
** DTSC 2008 background value for Southern California (12 mg/kg)*

Abbreviations:
$\mu g/m^3$ = Micrograms per cubic meter
DTSC = Department of Toxic Substances Control
RSL = Regional Screening Level
USEPA = United States Environmental Protection Agency
VOC = Volatile organic compound
COPC = Constituent of concern
Det = Detection
Freq = Frequency
Loc = Location
Max = Maximum
UCL = Upper confidence limit
Min = Minimum

Table L-11
Surface Soil (0-10) Data Summary and COPC Selection - Block 2
Infineon Facility
El Segundo, California

Analyte	Screening Levels	Screening Levels	Samples	Detects	Freq	Min Det	Max Det	Max Loc	COPC?	Rationale
Volatile Organic Compounds	**DTSC Note 3 SL**	**USEPA RSL (Commercial)**								
Tetrachloroethene	2.7	100	16	5	31%	0.0011	0.021	SBB2-5-3-4	Yes	Detected
Trichloroethene	--	6	16	2	13%	0.0019	0.0021	B2-3-5	Yes	Detected
TPH	**SFRWQCB ESL*** **	**LARWQCB SSL****								
C11-C12	*1,200*	*500*	8	0	0%	NA	NA	NA	No	Not Detected
C25-C28	*180,000*	*10,000*	8	1	13%	36	36	SBB2-5-3-4	Yes	Detected
C29-C32	*180,000*	*10,000*	8	1	13%	52	52	SBB2-5-3-4	Yes	Detected
C33-C36	*180,000*	*10,000*	8	1	13%	33	33	SBB2-5-3-4	Yes	Detected
C37-C40	*180,000*	*10,000*	8	1	13%	16	16	SBB2-5-3-4	Yes	Detected
C41-C44	*180,000*	*10,000*	8	0	0%	NA	NA	NA	No	Not Detected
C6	*2,000*	*500*	8	0	0%	NA	NA	NA	No	Not Detected
C6-C44-TOTAL	*1,200*	*500*	8	2	25%	12	180	SBB2-5-3-4	No	Individual C assessed
C7	*2,000*	*500*	8	0	0%	NA	NA	NA	No	Not Detected
C8	*2,000*	*500*	8	0	0%	NA	NA	NA	No	Not Detected
C9-C10	*2,000*	*500*	8	0	0%	NA	NA	NA	No	Not Detected
EFH(C13-C14)	*1,200*	*1,000*	8	0	0%	NA	NA	NA	No	Not Detected
EFH(C15-C16)	*1,200*	*1,000*	8	0	0%	NA	NA	NA	No	Not Detected
EFH(C17-C18)	*1,200*	*1,000*	8	0	0%	NA	NA	NA	No	Not Detected
EFH(C19-C20)	*180,000*	*1,000*	8	1	13%	15	15	SBB2-5-3-4	Yes	Detected
EFH(C21-C22)	*180,000*	*1,000*	8	1	13%	11	11	SBB2-5-3-4	Yes	Detected
EFH(C23-C24)	*180,000*	*1,000*	8	1	13%	14	14	SBB2-5-3-4	Yes	Detected
Metals	**DTSC Note 3 SL (Commercial)**	**USEPA RSL (Commercial)**								
Arsenic	0.36 (12*)	--	8	6	75%	1.06	2.61	SBB2-5-3-4	No	Less than DTSC 2008 Background (12 mg/kg)
Barium	--	220,000	8	8	100%	17.4	71.7	SBB2-9-3-4	Yes	Detected
Beryllium	230	--	8	3	38%	0.264	0.278	SBB2-9-3-4	Yes	Detected
Cadmium	780	--	8	3	38%	2.61	2.61	SBB2-5-3-4	Yes	Detected
Chromium	--	1,800,000.00	8	1	13%	13.2	27.6	SBB2-12-7-8	Yes	Detected
Chromium, VI	6.2	--	2	2	100%	1.1	1.1	SBB2-12-7-8	Yes	Detected
Cobalt	--	350	8	8	100%	2.99	5.93	SBB2-5-3-4	Yes	Detected
Copper	--	47,000	8	8	100%	2.73	17.9	SBB2-5-3-4	Yes	Detected
Lead	320	--	8	8	100%	1.52	65.5	SBB2-5-3-4	No	Less than residential Note 3 (80 mg/kg)
Mercury	4.4	--	8	1	13%	0.441	0.441	SBB2-13-1-2	Yes	Detected
Molybdenum	--	5,800	8	2	25%	0.343	0.463	SBB2-5-3-4	Yes	Detected
Nickel	11,000	--	8	8	100%	5.51	9.22	SBB2-12-7-8	Yes	Detected
Selenium	--	5,800	8	1	13%	3.98	3.98	SBB2-5-3-4	Yes	Detected
Vanadium	--	5,800	8	8	100%	14.5	29.1	SBB2-5-3-4	Yes	Detected
Zinc	--	350,000	8	8	100%	8.29	66.3	SBB2-5-3-4	Yes	Detected

Notes:
All units mg/kg

Abbreviations:
$\mu g/m^3$ = Micrograms per cubic meter
DTSC = Department of Toxic Substances Control
RSL = Regional Screening Level
USEPA = United States Environmental Protection Agency
VOC = Volatile organic compound
COPC = Constituent of concern
Det = Detection
Freq = Frequency
mg/kg = milligrams per kilogram
UCL = Upper confidence limit
Min = Minimum
Max = Maximum
****SFRWQCB ESL for motor oil for C25-C40, ESL for most conservative TPH product for "C6-C44" (diesel);*
gasoline for C5 to C10; ESLs selected as per DTSC 2015.
DTSC PEA Guidance Manual (2015) recommends SFRWQCB ESLs as they are derived for risk based analysis
***LARWQCB Site Assessment and Cleanup Guidebook Table 4-1: Maximum Soil Screening Levels for TPH and BTEX*
above Drinking Water Aquifers, May 1996. For C6-C44, most conservative value selected.
-- = Not Listed
** DTSC 2008 background value for Southern California (12 mg/kg)*

Table L-12
Soil Vapor Data Summary (0-5 feet) - Block 1
Infineon Facility
El Segundo, California

Analyte	Screening Levels (AF =0.001)	Basis[a]	Screening Levels (AF=0.03)	Basis[a]	Samples	Detects	Freq	Min Det	Max Det	Max Loc
Chloroform (Trichloromethane)	530	USEPA	18	USEPA	8	7	88%	11.1	140	SVB2-11
1,1-Dichloroethene	310,000	DTSC	10,333	DTSC	8	2	25%	8.28	12.8	SV-15
cis-1,2-Dichloroethene	35,000	DTSC	1,167	DTSC	8	1	13%	13.2	13.2	SV-15
1,4-Dioxane	2,500	USEPA	83	USEPA	8	1	13%	28.1	28.1	SV-21
Ethylbenzene	4,900	USEPA	163	USEPA	8	2	25%	10.4	10.4	SV-1
Tetrachloroethene	2,000	DTSC	67	DTSC	8	8	100%	1,560	76,300	SV-10
Toluene	1,300,000	DTSC	43,333	DTSC	8	2	25%	8.63	9.57	SV-10
Trichloroethene	3,000	USEPA	100	USEPA	8	8	100%	23.6	2,080	SV-18
Trichlorofluoromethane	5,300,000	DTSC	176,667	DTSC	8	1	13%	13	13	SV-10
Trichlorotrifluoroethane (Freon-113)	2,200,000	USEPA	73,333	USEPA	8	5	63%	39.3	212	SV-18
1,2,4-Trimethylbenzene	260,000	USEPA	8,667	USEPA	8	1	13%	20.5	20.5	SV-1
1,3,5-Trimethylbenzene	260,000	USEPA	8,667	USEPA	8	1	13%	9.29	9.29	SV-1
o-Xylene	440,000	USEPA	14,667	USEPA	8	2	25%	4.82	18.4	SV-1
m,p-Xylenes	440,000	USEPA	14,667	USEPA	8	3	38%	8.38	45.9	SV-1

Notes:
All units µg/m^3

a = Screening Levels from DTSC Office of Human and Ecological Risk Note 3 (DTSC, 2019; primary) and USEPA RSLs Commercial/Industrial (USEPA, 2019), adapted to calculate soil vapor screening levels by applying DTSC Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air (Vapor Intrusion Guidance) – Final (DTSC, 2011) and DTSC Note 4 (2019) alternative AF of 0.03.

Abbreviations:
µg/m^3 = Micrograms per cubic meter
DTSC = Department of Toxic Substances Control
RSL = Regional Screening Level
USEPA = United States Environmental Protection Agency
VOC = Volatile organic compound
COPC = Constituent of concern
Det = Detection
Freq = Frequency
Loc = Location
Max = Maximum
Min = Minimum
mg/kg = milligrams per kilogram
UCL = Upper confidence limit
Min = Minimum

Table L-13
Soil Vapor Data Summary (5+ feet) - Block 1
Infineon Facility
El Segundo, California

Analyte	Screening Levels (AF =0.001)	Basis[a]	Screening Levels (µg/m^3) (AF=0.03)	Basis[a]	Samples	Detects	Freq	Min Det	Max Det	Max Loc
Acetone	140,000,000	USEPA	4,666,667	USEPA	20	1	5%	4,700	4,700	SV-B1-1-80
Benzene	420	DTSC	14	DTSC	20	1	5%	20	20	SV-B1-1-80
Chloroform (Trichloromethane)	530	USEPA	18	USEPA	20	6	30%	130	550	SV-B1-5-22
1,1-Dichloroethene	3500000	DTSC	116667	DTSC	20	1	5%	760	760	SB-B1-1-80
cis-1,2-Dichloroethene	35,000	DTSC	1167	DTSC	20	10	50%	750	2,600	SV-B1-2-80
Tetrachloroethene	2,000	DTSC	67	DTSC	20	20	100%	20,000	690,000	SV-B1-5-22
1,1,1-Trichloroethane	4,400,000	DTSC	146,667	DTSC	20	2	10%	110	110	SV-B1-1-80
Trichloroethene	3,000	USEPA	100	USEPA	20	20	100%	1,400	82,000	SV-B1-1-80
Trichlorofluoromethane	5,300,000	DTSC	176,667	DTSC	20	20	100%	380	380	SV-B1-1-80
Trichlorotrifluoroethane (Freon-113)	22,000,000	USEPA	733,333	USEPA	20	20	100%	1,000	9,300	SV-B1-2-80

Notes:

All units µg/m^3

a = Screening Levels from DTSC Office of Human and Ecological Risk Note 3 (DTSC, 2019; primary) and USEPA RSLs Commercial/Industrial (USEPA, 2019), adapted to calculate soil vapor screening levels by applying DTSC Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air (Vapor Intrusion Guidance) – Final (DTSC, 2011) and DTSC Note 4 (2019) alternative AF of 0.03.

Abbreviations:

µg/m^3 = Micrograms per cubic meter
COPC = Constituent of concern
Det = Detection
Freq = Frequency
Loc = Location
Max = Maximum
Min = Minimum
mg/kg = milligrams per kilogram
UCL = Upper confidence limit
Min = Minimum
DTSC = Department of Toxic Substances Control
RSL = Regional Screening Level
USEPA = United States Environmental Protection Agency

Table L-14
Soil Vapor Data Summary (0-5 feet) - Block 2
Infineon Facility
El Segundo, California

Analyte	Screening Levels (AF =0.001)	Basis[a]	Screening Levels (AF=0.03)	Basis[a]	Samples	Detects	Freq	Min Det	Max Det	Max Loc
Acetone	140,000,000	USEPA	4,666,667	USEPA	7	2	29%	164	278	SVB2-1
Benzene	420	DTSC	14	DTSC	7	3	43%	6.48	8.4	SVB2-10
Chloroform (Trichloromethane)	530	USEPA	18	USEPA	7	5	71%	27.1	140	SVB2-11
1,1-Dichloroethane	3500000	DTSC	116667	DTSC	7	1	14%	7.04	7.04	SVB2-11
1,1-Dichloroethene	310,000	DTSC	10,333	DTSC	7	6	86%	6.22	587	SVB2-10
cis-1,2-Dichloroethene	35,000	DTSC	1,167	DTSC	7	5	71%	10.6	33.8	SVB2-9
Ethylbenzene	4,900	USEPA	163	USEPA	7	1	14%	11.5	11.5	SVB2-5
Tetrachloroethene	2,000	DTSC	67	DTSC	7	7	100%	80.7	31,300	SVB2-9
Tetrahydrofuran	8,800,000	USEPA	293,333	USEPA	7	1	14%	5.53	5.53	SVB2-1
Toluene	1,300,000	DTSC	43,333	DTSC	7	4	57%	4.94	55.4	SVB2-11
1,1,1-Trichloroethane	4,400,000	DTSC	146,667	DTSC	7	5	71%	32	92	SVB2-11
Trichloroethene	3,000	USEPA	100	USEPA	7	7	100%	41.7	17,310	SVB2-9
Trichlorofluoromethane	5,300,000	DTSC	176,667	DTSC	7	5	71%	33.7	977	SVB2-11
Trichlorotrifluoroethane (Freon-113)	22,000,000	USEPA	733,333	USEPA	7	6	86%	7.32	133	SVB2-10
1,2,4-Trimethylbenzene	260,000	USEPA	8,667	USEPA	7	3	43%	8.11	14.6	SVB2-5
o-Xylene	440,000	USEPA	14,667	USEPA	7	4	57%	3.29	29.9	SVB2-5
m,p-Xylenes	440,000	USEPA	14,667	USEPA	7	5	71%	4.51	64.4	SVB2-5

Notes:

All units µg/m^3

a = Screening Levels from DTSC Office of Human and Ecological Risk Note 3 (DTSC, 2019; primary) and USEPA RSLs Commercial/Industrial (USEPA, 2019), adapted to calculate soil vapor screening levels by applying DTSC Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air (Vapor Intrusion Guidance) – Final (DTSC, 2011) and DTSC Note 4 (2019) alternative AF of 0.03.

Abbreviations:

µg/m^3 = Micrograms per cubic meter
COPC = Constituent of concern
Det = Detection
Freq = Frequency
Loc = Location
Max = Maximum
Min = Minimum
mg/kg = milligrams per kilogram
UCL = Upper confidence limit
Min = Minimum
DTSC = Department of Toxic Substances Control
RSL = Regional Screening Level
USEPA = United States Environmental Protection Agency

Table L-15
Soil Vapor Data Summary (5+ feet) - Block 2
Infineon Facility
El Segundo, California

Analyte	Screening Levels (AF =0.001)	Basis[a]	Screening Levels (AF=0.03)	Basis[a]	Samples	Detects	Freq	Min Det	Max Det	Max Loc
Acetone	140,000,000	USEPA	4,666,667	USEPA	32	9	28%	2,600	9,800	SV-B2-2-19
Benzene	420	DTSC	14	DTSC	32	3	9%	20	40	SV-B2-2-19
Chloroform (Trichloromethane)	530	USEPA	18	USEPA	32	25	78%	30	200	SV-B2-5-80
1,1-Dichloroethene	310,000	DTSC	10,333	DTSC	32	29	91%	220	3,600	SV-B2-8-80
cis-1,2-Dichloroethene	35,000	DTSC	1,167	DTSC	32	5	16%	330	680	SV-B2-1-80
Tetrachloroethene	2,000	DTSC	67	DTSC	32	32	100%	8,100	73,000	SV-B2-8-55
1,1,1-Trichloroethane	4,400,000	DTSC	146,667	DTSC	32	1	3%	180	180	SV-B2-8-28
Trichloroethene	3,000	USEPA	100	USEPA	32	32	100%	2,700	52,000	SV-B2-8-55
Trichlorofluoromethane	5,300,000	DTSC	176,667	DTSC	32	6	19%	130	2,400	SV-B2-3-17
Trichlorotrifluoroethane (Freon-113)	22,000,000	USEPA	733,333	USEPA	32	15	47%	110	1,800	SV-B2-1-80

Notes:
All units µg/m^3
a = Screening Levels from DTSC Office of Human and Ecological Risk Note 3 (DTSC, 2019; primary) and USEPA RSLs Commercial/Industrial (USEPA, 2019), adapted to calculate soil vapor screening levels by applying DTSC Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air (Vapor Intrusion Guidance) – Final (DTSC, 2011) and DTSC Note 4 (2019) alternative AF of 0.03.

Abbreviations:
µg/m^3 = Micrograms per cubic meter
COPC = Constituent of concern
Det = Detection
Freq = Frequency
Loc = Location
Max = Maximum
Min = Minimum
mg/kg = milligrams per kilogram
UCL = Upper confidence limit
Min = Minimum
DTSC = Department of Toxic Substances Control
RSL = Regional Screening Level
USEPA = United States Environmental Protection Agency

Table L-16
Indoor Air Data Summary and COPC Selection - Block 1
Infineon Facility
El Segundo, California

Analyte	SL - Commerical	Source	Samples	Detects	Freq	Min Det	Max Det	Max Loc
Volatile Organic Compounds								
Acetone	140,000	USEPA	7	7	100%	19	24	IA-18
Chloromethane	390	USEPA	7	7	100%	1.2	1.4	IA-18
Dichlorodifluoromethane	440	USEPA	7	6	86%	2.7	3.1	IA-18
Toluene	1,300	DTSC	7	7	100%	2.8	3.5	IA-18

Notes:
All units µg/m^3

Abbreviations:
µg/m^3 = Micrograms per cubic meter
DTSC = Department of Toxic Substances Control
Freq = Frequency
Loc = Location
Max = Maximum
Min = Minimum
mg/kg = milligrams per kilogram
UCL = Upper confidence limit
Min = Minimum
SL = Screening Level
USEPA = United States Environmental Protection Agency

Table L-17
On-Site Indoor Air Data Summary and COPC Selection - Block 2
Infineon Facility
El Segundo, California

Analyte	SL - Commerical	Source	Samples	Detects	Freq	Min Det	Max Det	Max Loc
Volatile Organic Compounds								
1,1-Difluoroethane	*180,000*	*DTSC*	5	2	40%	9.1	9.8	IA-01
Acetone	*140,000*	*USEPA*	5	5	100%	21	29	IA-01
Benzene	*0.42*	*DTSC*	5	3	60%	1.7	1.7	IA-01,IA-01D, IA-03
Chloromethane	*390*	*USEPA*	5	5	100%	1.9	2.1	IA-03
Dichlorodifluoromethane	*440*	*USEPA*	5	5	100%	3	3.5	IA-08
Isopropanol	*880*	*USEPA*	5	3	60%	60	450	IA-01D
Toluene	*1,300*	*DTSC*	5	5	100%	2.2	4	IA-01

Notes:
All units µg/m^3
SLs are based on DTSC Office of Human and Ecological Risk Note 3 (DTSC, 2019)(primary) and USEPA RSLs Commercial/Industrial (USEPA, 2019)

Abbreviations:
µg/m^3 = Micrograms per cubic meter
COPC = Constituent of concern
Det = Detection
DTSC = Department of Toxic Substances Control
Freq = Frequency
Loc = Location
Max = Maximum
Min = Minimum
RSL = Regional Screening Level
USEPA = United States Environmental Protection Agency

Table L-18
Construction Volatilization Factor Calculations
Infineon Facility
El Segundo, California

Parameter	Abbrev.	Units	Value	Tetrachloroethene	Trichloroethene
Diffusivity in air[1]	Di	cm^2/sec	Chemical specific	0.050	0.069
Diffusivity in water[1]	Dw	cm^2/sec	Chemical specific	9.50E-06	1.00E-05
Air filled porosity[2]	θa	--	0.28		
Water filled porosity[2]	θw	--	0.15		
Dry bulk density[2]	ρb	g/cm^3	1.50		
Total porosity[2]	n	g/cm^3	0.43		
Soil particle density[2]	ρs	g/cm^3	2.65		
Henrys law[1]	H'	--	Chemical specific	0.724	0.403
Soil-water partition coefficient[3]	Kd	g/cm^3	Chemical specific	0.56964	0.3642
Soil organic carbon partition coefficient[1]	Koc	cm^3/g	Chemical specific	94.94	60.7
fraction organic carbon[2]	foc	g/g	0.006		
Apparent diffusivity[4]	Da	cm^2/sec		1.03E-02	1.46E-02
Inverse of the ratio of the 1-h geometric mean the volatilization flux at the center of a square site[2]	Q/C_{sr}	g/m^2-sec per kg/m^3	14.3		
Duration of construction[5]	T	sec	7,200,000		
Dispersion correction factor[2]	F_D	--	0.185		
Subchronic VF[6]	VF_{sc_road}	m^3/kg		1.21E+02	1.02E+02
Exposure interval[5]	T'	year	1		
Average source depth[7]	d	m		3.0	3.0
Mass Limit VF[8]	VF_{ml}	m^3/kg		541	541
Final volatilization factor[9]	VF	m^3/kg		5.4 E+2	5.4 E+2

Notes:

(1) From USEPA (2019a).

(2) Assumed default value for the site based upon USEPA (2002).

(3) Koc × foc.

(4) $((\theta a^{3.33} \times Di \times H' + \theta w^{3.33})/n^2)/((\rho b \times Kd)+(\theta w)+(\theta a \times H'))$

(5) Construction worker ED.

(4) Site unit area of 0.5 acres

(4) Exposure duration for construction worker

(6) $VF = (((3.14 \times Da \times T)^{0.5})/(2 \times \rho b^* Da)) \times 0.0001^* Q/C \times (1/\$Fd)$

(7) Estimate based on average depth of assumed direct contact.

(8) $Q/C \times 1/Fd \times ((T^*(3.15 \times 10^{7}\ sec/yr))/(\rho b \times d \times 10^{6}\ g/mg))$

(9) Final VF = Maximum of the subchronic and mass limit VFs.

Abbreviations:

cm^2 = Square centimeters
cm^3 = Cubic centimeter
g = Grams
kg = Kilograms
m = Meters
m^2 = Square meters
m^3 = Cubic meters
mg = Milligrams
sec = Second
USEPA = United States Environmental Protection Agency
yr = Year

Table L-19
Values Used for Commercial Worker Daily Intake Calculations
Infineon Facility
El Segundo, California

Scenario Timeframe:	Current and Future
Medium:	Near Surface Soils
Exposure Routes:	Incidental Ingestion, Dermal Contact and Inhalation of Particulates During Commercial Activities
Receptor Population:	Commercial Worker

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/Reference	Intake Equation/ Model Name
Ingestion	CSoil	Chemical Concentration in Soil	mg/kg soil			Chronic Daily Intake (CDI) (mg/kg-day) =
	IR_{soil}	Ingestion Rate of Soil	mg soil/day	100	DTSC Note 1, 2019	$CSoil \times IR_{soil} \times CF \times FI \times EF \times ED \times 1/BW \times 1/AT$
	CF	Conversion Factor	kg/mg	0.000001	--	
	FI	Fraction Ingested	--	1	DTSC Note 1, 2019	
	EF	Exposure Frequency	days/yr	250	DTSC Note 1, 2019	
	ED	Exposure Duration	yr	25	DTSC Note 1, 2019	
	BW	Body Weight	kg	80	DTSC Note 1, 2019	
	LT	Lifetime	yr	70	DTSC Note 1, 2019	
	AT_c	Averaging Time for Carcinogens	days	25550	DTSC Note 1, 2019	
	AT_{nc}	Averaging Time for Noncarcinogens	days	9125	DTSC Note 1, 2019	
Dermal	CSoil	Chemical Concentration in Soil	mg/kg soil			Chronic Daily Intake (CDI) (mg/kg-day) =
	CF	Conversion Factor	kg/mg	0.000001	--	$CSoil \times CF \times SA \times SSAF \times DABS \times EF \times ED \times 1/BW \times 1/AT$
	SA	Skin Surface Area Available for Contact	cm^2/event	6,032	DTSC Note 1, 2019	
	SSAF	Soil-to-Skin Adherence Factor	mg/cm^2/event	0.2	DTSC Note 1, 2019	
	DABS	Dermal Absorption Factor	--	VOCs - NA	Chemical specific	
	EF	Exposure Frequency	days/yr	250	DTSC Note 1, 2019	
	ED	Exposure Duration	yr	25	DTSC Note 1, 2019	
	BW	Body Weight	kg	80	DTSC Note 1, 2019	
	AT_c	Averaging Time for Carcinogens	days	25550	DTSC Note 1, 2019	
	AT_{nc}	Averaging Time for Noncarcinogens	days	9125	DTSC Note 1, 2019	
Inhalation	CA	Chemical Concentration in Air	mg/m^3			Chronic Daily Intake (CDI) (mg/m^3) =
	ET	Exposure Time	hr/day	8	DTSC Note 1, 2019	$CA \times ET \times EF \times ED \times 1/AT \times 24$ hrs/day
	EF	Exposure Frequency	days/yr	250	DTSC Note 1, 2019	
	ED	Exposure Duration	yr	25	DTSC Note 1, 2019	
	AT_c	Averaging Time for Carcinogens	days	25550	DTSC Note 1, 2019	
	AT_{nc}	Averaging Time for Noncarcinogens	days	9125	DTSC Note 1, 2019	

Notes:
DTSC Note 1, 2019 - California Department of Toxic Substances Control Note 1

Abbreviations:
cm^2 = Square centimeter
DTSC = Department of Toxic Substances Control
hr = Hour
kg = Kilograms
m^3 = Cubic meter
mg = Milligrams
RME = Reasonable maximum exposure
yr = Year

Table L-20
Values Used for Construction Worker Daily Intake Calculations
Infineon Facility
El Segundo, California

Scenario Timeframe:	Current and Future
Medium:	Near Surface Soils
Exposure Routes:	Incidental Ingestion, Dermal Contact and Inhalation of Particulates During Commercial Activities
Receptor Population:	Construction Worker

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/Reference	Intake Equation/Model Name
Ingestion	CSoil	Chemical Concentration in Soil	mg/kg soil			Chronic Daily Intake (CDI) (mg/kg-day) =
	IR_{soil}	Ingestion Rate of Soil	mg soil/day	330	DTSC Note 1, 2019	CSoil x IR_{soil} x CF x FI x EF x ED x 1/BW x 1/AT
	CF	Conversion Factor	kg/mg	0.000001	--	
	FI	Fraction Ingested	--	1	DTSC Note 1, 2019	
	EF	Exposure Frequency	days/yr	250	DTSC Note 1, 2019	
	ED	Exposure Duration	yr	1	DTSC Note 1, 2019	
	BW	Body Weight	kg	80	DTSC Note 1, 2019	
	LT	Lifetime	yr	70	DTSC Note 1, 2019	
	AT_c	Averaging Time for Carcinogens	days	25550	DTSC Note 1, 2019	
	AT_{nc}	Averaging Time for Noncarcinogens	days	365	DTSC Note 1, 2019	
Dermal	CSoil	Chemical Concentration in Soil	mg/kg soil			Chronic Daily Intake (CDI) (mg/kg-day) =
	CF	Conversion Factor	kg/mg	0.000001	--	CSoil x CF x SA x AF x DABS x EF x
	SA	Skin Surface Area Available for Contact	cm^2/event	6,032	DTSC Note 1, 2019	ED x 1/BW x 1/AT
	AF	Soil-to-Skin Adherence Factor	mg/cm^2/event	0.8	DTSC Note 1, 2019	
	DABS	Dermal Absorption Factor	--	Chemical specific	DTSC Note 1, 2019	
	EF	Exposure Frequency	days/yr	250	DTSC Note 1, 2019	
	ED	Exposure Duration	yr	1	DTSC Note 1, 2019	
	BW	Body Weight	kg	80	DTSC Note 1, 2019	
	AT_c	Averaging Time for Carcinogens	days	25550	DTSC Note 1, 2019	
	AT_{nc}	Averaging Time for Noncarcinogens	days	365	DTSC Note 1, 2019	
Inhalation	CA	Chemical Concentration in Air	mg/m^3			Chronic Daily Intake (CDI) (mg/m^3) =
	ET	Exposure Time	hr/day	8	DTSC Note 1, 2019	CA x ET x EF x ED x 1/AT x 24 hrs/day
	EF	Exposure Frequency	days/yr	250	DTSC Note 1, 2019	
	ED	Exposure Duration	yr	1	DTSC Note 1, 2019	
	AT_c	Averaging Time for Carcinogens	days	25550	DTSC Note 1, 2019	
	AT_{nc}	Averaging Time for Noncarcinogens	days	365	DTSC Note 1, 2019	

Notes:

DTSC Note 1, 2019 - California Department of Toxic Substances Control Note 1

Abbreviations:

cm^2 = Square centimeter
DTSC = Department of Toxic Substances Control
hr = Hour
kg = Kilograms
m^3 = Cubic meter
mg = Milligrams
RME = Reasonable maximum exposure
yr = Year

Table L-21
Calculation of Commercial Worker On-Site Soil Exposures, Non-cancer Hazards/Cancer Risks
Infineon Facility - Block 1
El Segundo, California

Scenario Timeframe:	Current and Future
Medium:	Near surface (0-10 feet) Soils
Receptor Population:	On-Site Commercial Worker

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Particulate/ Volatilization Factor (m^3/kg)[a]	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Intake (Cancer)	Intake (Cancer) Units	Reference Dose	Reference Dose Units	Cancer Slope Factor/ Unit Risk	Cancer Slope Factor/ Unit Risk Units	Hazard Quotient	Cancer Risk
Ingestion																	
	Tetrachloroethene	3.00E-02	mg/kg	NA	3.00E-02	mg/kg	Max	2.6E-08	mg/kg-day	9.2E-09	mg/kg-day	6.0E-03	mg/kg-day	0.54	kg-day/mg	NA	5E-09
	C25-C28	2.80E+01	mg/kg	NA	2.80E+01	mg/kg	Max	2.4E-05	mg/kg-day	8.6E-06	mg/kg-day	4.0E-02	mg/kg-day	NA	kg-day/mg	6.0E-04	NA
	C29-C32	4.40E+01	mg/kg	NA	4.40E+01	mg/kg	Max	3.8E-05	mg/kg-day	1.3E-05	mg/kg-day	4.0E-02	mg/kg-day	NA	kg-day/mg	NA	NA
	C33-C36	2.60E+01	mg/kg	NA	2.60E+01	mg/kg	Max	2.2E-05	mg/kg-day	8.0E-06	mg/kg-day	NA	mg/kg-day	NA	kg-day/mg	NA	NA
	C37-C40	1.20E+01	mg/kg	NA	1.20E+01	mg/kg	Max	1.0E-05	mg/kg-day	3.7E-06	mg/kg-day	NA	mg/kg-day	NA	kg-day/mg	NA	NA
	Barium	5.90E+01	mg/kg	NA	5.90E+01	mg/kg	Max	5.1E-05	mg/kg-day	1.8E-05	mg/kg-day	2.0E-01	mg/kg-day	NA	kg-day/mg	2.5E-04	NA
	Cadmium	5.84E+00	mg/kg	NA	5.84E+00	mg/kg	Max	5.0E-06	mg/kg-day	1.8E-06	mg/kg-day	1.0E-03	mg/kg-day	NA	kg-day/mg	5.0E-03	NA
	Chromium	1.25E+01	mg/kg	NA	1.25E+01	mg/kg	Max	1.1E-05	mg/kg-day	3.8E-06	mg/kg-day	1.5E+00	mg/kg-day	NA	kg-day/mg	7.1E-06	NA
	Cobalt	1.45E+01	mg/kg	NA	1.45E+01	mg/kg	Max	1.2E-05	mg/kg-day	4.4E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	kg-day/mg	4.1E-02	NA
	Copper	1.70E+01	mg/kg	NA	1.70E+01	mg/kg	Max	1.5E-05	mg/kg-day	5.2E-06	mg/kg-day	4.0E-02	mg/kg-day	NA	kg-day/mg	3.6E-04	NA
	Nickel	8.94E+00	mg/kg	NA	8.94E+00	mg/kg	Max	7.7E-06	mg/kg-day	2.7E-06	mg/kg-day	1.1E-02	mg/kg-day	NA	kg-day/mg	7.0E-04	NA
	Selenium	1.12E+00	mg/kg	NA	1.12E+00	mg/kg	Max	9.6E-07	mg/kg-day	3.4E-07	mg/kg-day	5.0E-03	mg/kg-day	NA	kg-day/mg	1.9E-04	NA
	Vanadium	2.29E+01	mg/kg	NA	2.29E+01	mg/kg	Max	2.0E-05	mg/kg-day	7.0E-06	mg/kg-day	5.0E-03	mg/kg-day	NA	kg-day/mg	3.9E-03	NA
	Zinc	2.37E+02	mg/kg	NA	2.37E+02	mg/kg	Max	2.0E-04	mg/kg-day	7.2E-05	mg/kg-day	3.0E-01	mg/kg-day	NA	kg-day/mg	6.8E-04	NA
	(Total)															**5.3E-02**	**5E-09**
Dermal	Tetrachloroethene	3.00E-02	mg/kg	NA	3.00E-02	mg/kg	Max	0.0E+00	mg/kg-day	0.0E+00	mg/kg-day	6.0E-03	mg/kg-day	0.54	kg-day/mg	NA	0E+00
	C25-C28	2.80E+01	mg/kg	NA	2.80E+01	mg/kg	Max	2.9E-05	mg/kg-day	1.0E-05	mg/kg-day	4.0E-02	mg/kg-day	NA	kg-day/mg	7.2E-04	NA
	C29-C32	4.40E+01	mg/kg	NA	4.40E+01	mg/kg	Max	4.5E-05	mg/kg-day	1.6E-05	mg/kg-day	4.0E-02	mg/kg-day	NA	kg-day/mg	NA	NA
	C33-C36	2.60E+01	mg/kg	NA	2.60E+01	mg/kg	Max	2.7E-05	mg/kg-day	9.6E-06	mg/kg-day	NA	mg/kg-day	NA	kg-day/mg	NA	NA
	C37-C40	1.20E+01	mg/kg	NA	1.20E+01	mg/kg	Max	1.2E-05	mg/kg-day	4.4E-06	mg/kg-day	NA	mg/kg-day	NA	kg-day/mg	NA	NA
	Barium	5.90E+01	mg/kg	NA	5.90E+01	mg/kg	Max	0.0E+00	mg/kg-day	0.0E+00	mg/kg-day	1.4E-02	mg/kg-day	NA	kg-day/mg	0.0E+00	NA
	Cadmium	5.84E+00	mg/kg	NA	5.84E+00	mg/kg	Max	6.0E-08	mg/kg-day	2.2E-08	mg/kg-day	2.5E-05	mg/kg-day	NA	kg-day/mg	2.4E-03	NA
	Chromium	1.25E+01	mg/kg	NA	1.25E+01	mg/kg	Max	0.0E+00	mg/kg-day	0.0E+00	mg/kg-day	2.0E-02	mg/kg-day	NA	kg-day/mg	0.0E+00	NA
	Cobalt	1.45E+01	mg/kg	NA	1.45E+01	mg/kg	Max	0.0E+00	mg/kg-day	0.0E+00	mg/kg-day	3.0E-04	mg/kg-day	NA	kg-day/mg	0.0E+00	NA
	Copper	1.70E+01	mg/kg	NA	1.70E+01	mg/kg	Max	0.0E+00	mg/kg-day	0.0E+00	mg/kg-day	4.0E-02	mg/kg-day	NA	kg-day/mg	0.0E+00	NA
	Nickel	8.94E+00	mg/kg	NA	8.94E+00	mg/kg	Max	0.0E+00	mg/kg-day	0.0E+00	mg/kg-day	4.4E-04	mg/kg-day	NA	kg-day/mg	0.0E+00	NA
	Selenium	1.12E+00	mg/kg	NA	1.12E+00	mg/kg	Max	0.0E+00	mg/kg-day	0.0E+00	mg/kg-day	5.0E-03	mg/kg-day	NA	kg-day/mg	0.0E+00	NA
	Vanadium	2.29E+01	mg/kg	NA	2.29E+01	mg/kg	Max	0.0E+00	mg/kg-day	0.0E+00	mg/kg-day	1.3E-04	mg/kg-day	NA	kg-day/mg	0.0E+00	NA
	Zinc	2.37E+02	mg/kg	NA	2.37E+02	mg/kg	Max	0.0E+00	mg/kg-day	0.0E+00	mg/kg-day	3.0E-01	mg/kg-day	NA	kg-day/mg	0.0E+00	NA
	(Total)															**3.1E-03**	**0E+00**
Inhalation	Tetrachloroethene	3.00E-02	mg/kg	2.35E+03	1.3E-05	mg/m^3	Modeled	2.9E-06	mg/m^3	1.0E-03	mg/m^3	4.0E-02	mg/m^3	6E-06	$m^3/\mu g$	7.3E-05	6E-09
	C25-C28	2.80E+01	mg/kg	1.36E+09	2.1E-08	mg/m^3	Modeled	4.7E-09	mg/m^3	1.7E-06	mg/m^3	NA	mg/m^3	NA	$m^3/\mu g$	NA	NA
	C29-C32	4.40E+01	mg/kg	1.36E+09	3.2E-08	mg/m^3	Modeled	7.4E-09	mg/m^3	2.6E-06	mg/m^3	NA	mg/m^3	NA	$m^3/\mu g$	NA	NA
	C33-C36	2.60E+01	mg/kg	1.36E+09	1.9E-08	mg/m^3	Modeled	4.4E-09	mg/m^3	1.6E-06	mg/m^3	NA	mg/m^3	NA	$m^3/\mu g$	NA	NA
	C37-C40	1.20E+01	mg/kg	1.36E+09	8.8E-09	mg/m^3	Modeled	2.0E-09	mg/m^3	7.2E-07	mg/m^3	NA	mg/m^3	NA	$m^3/\mu g$	NA	NA
	Barium	5.90E+01	mg/kg	1.36E+09	4.3E-08	mg/m^3	Modeled	9.9E-09	mg/m^3	3.5E-06	mg/m^3	5.0E-04	mg/m^3	NA	$m^3/\mu g$	2.0E-05	NA
	Cadmium	5.84E+00	mg/kg	1.36E+09	4.3E-09	mg/m^3	Modeled	9.8E-10	mg/m^3	3.5E-07	mg/m^3	1.0E-05	mg/m^3	4E-03	$m^3/\mu g$	9.8E-05	1E-09
	Chromium	1.25E+01	mg/kg	1.36E+09	9.2E-09	mg/m^3	Modeled	2.1E-09	mg/m^3	7.5E-07	mg/m^3	NA	mg/m^3	NA	$m^3/\mu g$	NA	NA
	Cobalt	1.45E+01	mg/kg	1.36E+09	1.1E-08	mg/m^3	Modeled	2.4E-09	mg/m^3	8.7E-07	mg/m^3	6.0E-06	mg/m^3	9E-03	$m^3/\mu g$	4.1E-04	8E-09
	Copper	1.70E+01	mg/kg	1.36E+09	1.3E-08	mg/m^3	Modeled	2.9E-09	mg/m^3	1.0E-06	mg/m^3	NA	mg/m^3	NA	$m^3/\mu g$	NA	NA
	Nickel	8.94E+00	mg/kg	1.36E+09	6.6E-09	mg/m^3	Modeled	1.5E-09	mg/m3	5.4E-07	mg/m3	1.4E-05	mg/m^3	3E-04	$m^3/\mu g$	1.1E-04	1E-10
	Selenium	1.12E+00	mg/kg	1.36E+09	8.2E-10	mg/m^3	Modeled	1.9E-10	mg/m3	6.7E-08	mg/m3	2.0E-02	mg/m^3	NA	$m^3/\mu g$	9.4E-09	NA
	Vanadium	2.29E+01	mg/kg	1.36E+09	1.7E-08	mg/m^3	Modeled	3.8E-09	mg/m3	1.4E-06	mg/m3	1.0E-04	mg/m^3	NA	$m^3/\mu g$	3.8E-05	NA
	Zinc	2.37E+02	mg/kg	1.36E+09	1.7E-07	mg/m^3	Modeled	4.0E-08	mg/m3	1.4E-05	mg/m3	NA	mg/m^3	NA	$m^3/\mu g$	NA	NA
	(Total)															**7.4E-04**	**2E-08**
															Total Risk Across All Exposure Routes/Pathways	**5.7E-02**	**2E-08**

Notes:
[a] *USEPA, 2018*

Abbreviations:
µg = Micrograms
EPC = Exposure point concentration
kg = Kilograms
m^3 = Cubic meter
mg = Milligrams
NA = Not applicable
TPH = Total petroleum hydrocarbon
USEPA = United States Environmental Protection Agency
VOCs = Volatile organic compounds

Dermal Absorption Factors: Reference: RAGS Part E EPA/540/R/99/005; July 2004

VOCs	*0.0%*	*No dermal absorption from soil*
Cadmium	*0.1%*	*USEPA 2018*
All other metals	*0.0%*	*No dermal absorption from soil*
TPH	*10.0%*	*USEPA 2018*

Table L-22
Calculation of Commercial Worker On-Site Soil Exposures, Non-cancer Hazards/Cancer Risks
Infineon Facility - Block 2
El Segundo, California

Scenario Timeframe:	Current and Future
Medium:	Near surface (0-10 feet) Soils
Receptor Population:	On-Site Commercial Worker

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Particulate/ Volatilization Factor (m^3/kg)[a]	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Intake (Cancer)	Intake (Cancer) Units	Reference Dose	Reference Dose Units	Cancer Slope Factor/ Unit Risk	Cancer Slope Factor/ Unit Risk Units	Hazard Quotient	Cancer Risk
Ingestion																	
	Tetrachloroethene	2.10E-02	mg/kg	NA	2.10E-02	mg/kg	Max	1.8E-08	mg/kg-day	6.4E-09	mg/kg-day	6.0E-03	mg/kg-day	0.54	kg-day/mg	NA	3E-09
	Trichloroethene	2.10E-03	mg/kg	NA	2.10E-03	mg/kg	Max	1.8E-09	mg/kg-day	6.4E-10	mg/kg-day	5.0E-04	mg/kg-day	0.046	kg-day/mg	3.6E-06	3E-11
	C25-C28	36	mg/kg	NA	36	mg/kg	Max	3.1E-05	mg/kg-day	1.1E-05	mg/kg-day	4.0E-02	mg/kg-day	NA	kg-day/mg	NA	NA
	C29-C32	52	mg/kg	NA	52	mg/kg	Max	4.5E-05	mg/kg-day	1.6E-05	mg/kg-day	4.0E-02	mg/kg-day	NA	kg-day/mg	NA	NA
	C33-C36	33	mg/kg	NA	33	mg/kg	Max	2.8E-05	mg/kg-day	1.0E-05	mg/kg-day	NA	mg/kg-day	NA	kg-day/mg	NA	NA
	C37-C40	16	mg/kg	NA	16	mg/kg	Max	1.4E-05	mg/kg-day	4.9E-06	mg/kg-day	NA	mg/kg-day	NA	kg-day/mg	NA	NA
	EFH(C19-C20)	15	mg/kg	NA	15	mg/kg	Max	1.3E-05	mg/kg-day	4.6E-06	mg/kg-day	4.0E-02	mg/kg-day	NA	kg-day/mg	3.2E-04	NA
	EFH(C21-C22)	11	mg/kg	NA	11	mg/kg	Max	9.4E-06	mg/kg-day	3.4E-06	mg/kg-day	4.0E-02	mg/kg-day	NA	kg-day/mg	2.4E-04	NA
	EFH(C23-C24)	14	mg/kg	NA	14	mg/kg	Max	1.2E-05	mg/kg-day	4.3E-06	mg/kg-day	4.0E-02	mg/kg-day	NA	kg-day/mg	3.0E-04	NA
	Barium	7.17E+01	mg/kg	NA	7.17E+01	mg/kg	Max	6.1E-05	mg/kg-day	2.2E-05	mg/kg-day	2.0E-01	mg/kg-day	NA	kg-day/mg	3.1E-04	NA
	Beryllium	2.78E-01	mg/kg	NA	2.78E-01	mg/kg	Max	2.4E-07	mg/kg-day	8.5E-08	mg/kg-day	2.0E-04	mg/kg-day	NA	kg-day/mg	1.2E-03	NA
	Cadmium	2.61E+00	mg/kg	NA	2.61E+00	mg/kg	Max	2.2E-06	mg/kg-day	8.0E-07	mg/kg-day	1.0E-03	mg/kg-day	NA	kg-day/mg	2.2E-03	NA
	Chromium	2.76E+01	mg/kg	NA	2.76E+01	mg/kg	Max	2.4E-05	mg/kg-day	8.4E-06	mg/kg-day	1.5E+00	mg/kg-day	NA	kg-day/mg	1.6E-05	NA
	Chromium, VI	1.10E+00	mg/kg	NA	1.10E+00	mg/kg	Max	9.4E-07	mg/kg-day	3.4E-07	mg/kg-day	3.0E-03	mg/kg-day	0.5	kg-day/mg	3.1E-04	2E-07
	Cobalt	5.93E+00	mg/kg	NA	5.93E+00	mg/kg	Max	5.1E-06	mg/kg-day	1.8E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	kg-day/mg	1.7E-02	NA
	Copper	1.79E+01	mg/kg	NA	1.79E+01	mg/kg	Max	1.5E-05	mg/kg-day	5.5E-06	mg/kg-day	4.0E-02	mg/kg-day	NA	kg-day/mg	3.8E-04	NA
	Mercury	4.41E-01	mg/kg	NA	4.41E-01	mg/kg	Max	3.8E-07	mg/kg-day	1.3E-07	mg/kg-day	1.6E-04	mg/kg-day	NA	kg-day/mg	2.4E-03	NA
	Molybdenum	0.463	mg/kg	NA	0.463	mg/kg	Max	4.0E-07	mg/kg-day	1.4E-07	mg/kg-day	5.0E-03	mg/kg-day	NA	kg-day/mg	7.9E-05	NA
	Nickel	9.22E+00	mg/kg	NA	9.22E+00	mg/kg	Max	7.9E-06	mg/kg-day	2.8E-06	mg/kg-day	1.1E-02	mg/kg-day	NA	kg-day/mg	7.2E-04	NA
	Selenium	3.98	mg/kg	NA	3.98	mg/kg	Max	3.4E-06	mg/kg-day	1.2E-06	mg/kg-day	5.0E-03	mg/kg-day	NA	kg-day/mg	6.8E-04	NA
	Vanadium	2.91E+01	mg/kg	NA	2.91E+01	mg/kg	Max	2.5E-05	mg/kg-day	8.9E-06	mg/kg-day	5.0E-03	mg/kg-day	NA	kg-day/mg	4.9E-03	NA
	Zinc	6.63E+01	mg/kg	NA	6.63E+01	mg/kg	Max	5.7E-05	mg/kg-day	2.0E-05	mg/kg-day	3.0E-01	mg/kg-day	NA	kg-day/mg	1.9E-04	NA
	(Total)															**3.1E-02**	**2E-07**
Dermal	Tetrachloroethene	2.10E-02	mg/kg	NA	2.10E-02	mg/kg	Max	0.0E+00	mg/kg-day	0.0E+00	mg/kg-day	6.0E-03	mg/kg-day	0.54	kg-day/mg	NA	0E+00
	Trichloroethene	2.10E-03	mg/kg	NA	2.10E-03	mg/kg	Max	0.0E+00	mg/kg-day	0.0E+00	mg/kg-day	5.0E-04	mg/kg-day	0.046	kg-day/mg	0.0E+00	0E+00
	C25-C28	36	mg/kg	NA	36	mg/kg	Max	3.7E-05	mg/kg-day	1.3E-05	mg/kg-day	4.0E-02	mg/kg-day	NA	kg-day/mg	NA	NA
	C29-C32	52	mg/kg	NA	52	mg/kg	Max	5.4E-05	mg/kg-day	1.9E-05	mg/kg-day	4.0E-02	mg/kg-day	NA	kg-day/mg	NA	NA
	C33-C36	33	mg/kg	NA	33	mg/kg	Max	3.4E-05	mg/kg-day	1.2E-05	mg/kg-day	NA	mg/kg-day	NA	kg-day/mg	NA	NA
	C37-C40	16	mg/kg	NA	16	mg/kg	Max	1.7E-05	mg/kg-day	5.9E-06	mg/kg-day	NA	mg/kg-day	NA	kg-day/mg	NA	NA
	EFH(C19-C20)	15	mg/kg	NA	15	mg/kg	Max	1.5E-05	mg/kg-day	5.5E-06	mg/kg-day	4.0E-02	mg/kg-day	NA	kg-day/mg	3.9E-04	NA
	EFH(C21-C22)	11	mg/kg	NA	11	mg/kg	Max	1.1E-05	mg/kg-day	4.1E-06	mg/kg-day	4.0E-02	mg/kg-day	NA	kg-day/mg	2.8E-04	NA
	EFH(C23-C24)	14	mg/kg	NA	14	mg/kg	Max	1.4E-05	mg/kg-day	5.2E-06	mg/kg-day	4.0E-02	mg/kg-day	NA	kg-day/mg	3.6E-04	NA
	Barium	7.17E+01	mg/kg	NA	7.17E+01	mg/kg	Max	0.0E+00	mg/kg-day	0.0E+00	mg/kg-day	1.4E-02	mg/kg-day	NA	kg-day/mg	0.0E+00	NA
	Beryllium	2.78E-01	mg/kg	NA	2.78E-01	mg/kg	Max	0.0E+00	mg/kg-day	0.0E+00	mg/kg-day	2.0E-04	mg/kg-day	NA	kg-day/mg	NA	NA
	Cadmium	2.61E+00	mg/kg	NA	2.61E+00	mg/kg	Max	2.7E-08	mg/kg-day	9.6E-09	mg/kg-day	2.5E-05	mg/kg-day	NA	kg-day/mg	NA	NA
	Chromium	2.76E+01	mg/kg	NA	2.76E+01	mg/kg	Max	0.0E+00	mg/kg-day	0.0E+00	mg/kg-day	2.0E-02	mg/kg-day	NA	kg-day/mg	NA	NA
	Chromium, VI	1.10E+00	mg/kg	NA	1.10E+00	mg/kg	Max	0.0E+00	mg/kg-day	0.0E+00	mg/kg-day	3.0E-03	mg/kg-day	0.5	kg-day/mg	NA	0E+00
	Cobalt	5.93E+00	mg/kg	NA	5.93E+00	mg/kg	Max	0.0E+00	mg/kg-day	0.0E+00	mg/kg-day	3.0E-04	mg/kg-day	NA	kg-day/mg	NA	NA
	Copper	1.79E+01	mg/kg	NA	1.79E+01	mg/kg	Max	0.0E+00	mg/kg-day	0.0E+00	mg/kg-day	4.0E-02	mg/kg-day	NA	kg-day/mg	NA	NA
	Mercury	4.41E-01	mg/kg	NA	4.41E-01	mg/kg	Max	0.0E+00	mg/kg-day	0.0E+00	mg/kg-day	1.1E-05	mg/kg-day	NA	kg-day/mg	NA	NA
	Molybdenum	4.63E-01	mg/kg	NA	4.63E-01	mg/kg	Max	0.0E+00	mg/kg-day	0.0E+00	mg/kg-day	5.0E-03	mg/kg-day	NA	kg-day/mg	NA	NA
	Nickel	9.22E+00	mg/kg	NA	9.22E+00	mg/kg	Max	0.0E+00	mg/kg-day	0.0E+00	mg/kg-day	4.4E-04	mg/kg-day	NA	kg-day/mg	NA	NA
	Selenium	3.98E+00	mg/kg	NA	3.98E+00	mg/kg	Max	0.0E+00	mg/kg-day	0.0E+00	mg/kg-day	5.0E-03	mg/kg-day	NA	kg-day/mg	NA	NA
	Vanadium	2.91E+01	mg/kg	NA	2.91E+01	mg/kg	Max	0.0E+00	mg/kg-day	0.0E+00	mg/kg-day	1.3E-04	mg/kg-day	NA	kg-day/mg	NA	NA
	Zinc	6.63E+01	mg/kg	NA	6.63E+01	mg/kg	Max	0.0E+00	mg/kg-day	0.0E+00	mg/kg-day	3.0E-01	mg/kg-day	NA	kg-day/mg	NA	NA
	(Total)															**1.0E-03**	**0E+00**

Table L-22
Calculation of Commercial Worker On-Site Soil Exposures, Non-cancer Hazards/Cancer Risks
Infineon Facility - Block 2
El Segundo, California

Scenario Timeframe:	Current and Future
Medium:	Near surface (0-10 feet) Soils
Receptor Population:	On-Site Commercial Worker

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Particulate/ Volatilization Factor (m^3/kg)[a]	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Intake (Cancer)	Intake (Cancer) Units	Reference Dose	Reference Dose Units	Cancer Slope Factor/ Unit Risk	Cancer Slope Factor/ Unit Risk Units	Hazard Quotient	Cancer Risk
Inhalation	Tetrachloroethene	2.10E-02	mg/kg	2E+03	8.9E-06	mg/m^3	Modeled	2.0E-06	mg/m^3	7E-04	mg/m^3	4.0E-02	mg/m^3	6E-06	$m^3/\mu g$	5.1E-05	4E-09
	Trichloroethene	2.10E-03	mg/kg	2E+03	9.5E-07	mg/m^3	Modeled	2.2E-07	mg/m^3	8E-05	mg/m^3	2.0E-03	mg/m^3	4E-06	$m^3/\mu g$	1.1E-04	3E-10
	C25-C28	36	mg/kg	1E+09	2.6E-08	mg/m^3	Modeled	6.0E-09	mg/m^3	2E-06	mg/m^3	NA	mg/m^3	NA	$m^3/\mu g$	NA	NA
	C29-C32	52	mg/kg	1E+09	3.8E-08	mg/m^3	Modeled	8.7E-09	mg/m^3	3E-06	mg/m^3	NA	mg/m^3	NA	$m^3/\mu g$	NA	NA
	C33-C36	33	mg/kg	1E+09	2.4E-08	mg/m^3	Modeled	5.5E-09	mg/m^3	2E-06	mg/m^3	NA	mg/m^3	NA	$m^3/\mu g$	NA	NA
	C37-C40	16	mg/kg	1E+09	1.2E-08	mg/m^3	Modeled	2.7E-09	mg/m^3	1E-06	mg/m^3	NA	mg/m^3	NA	$m^3/\mu g$	NA	NA
	EFH(C19-C20)	15	mg/kg	1E+09	1.1E-08	mg/m^3	Modeled	2.5E-09	mg/m^3	9E-07	mg/m^3	NA	mg/m^3	NA	$m^3/\mu g$	NA	NA
	EFH(C21-C22)	11	mg/kg	1E+09	8.1E-09	mg/m^3	Modeled	1.8E-09	mg/m^3	7E-07	mg/m^3	NA	mg/m^3	NA	$m^3/\mu g$	NA	NA
	EFH(C23-C24)	14	mg/kg	1E+09	1.0E-08	mg/m^3	Modeled	2.4E-09	mg/m^3	8E-07	mg/m^3	NA	mg/m^3	NA	$m^3/\mu g$	NA	NA
	Barium	7.17E+01	mg/kg	1E+09	5.3E-08	mg/m^3	Modeled	1.2E-08	mg/m^3	4E-06	mg/m^3	5.0E-04	mg/m^3	NA	$m^3/\mu g$	2.4E-05	NA
	Beryllium	2.78E-01	mg/kg	1E+09	2.0E-10	mg/m^3	Modeled	4.7E-11	mg/m^3	2E-08	mg/m3	7.0E-06	mg/m^3	2E-03	$m^3/\mu g$	6.7E-06	4E-11
	Cadmium	2.61E+00	mg/kg	1E+09	1.9E-09	mg/m^3	Modeled	4.4E-10	mg/m^3	2E-07	mg/m3	1.0E-05	mg/m^3	4E-03	$m^3/\mu g$	4.4E-05	7E-10
	Chromium	2.76E+01	mg/kg	1E+09	2.0E-08	mg/m^3	Modeled	4.6E-09	mg/m^3	2E-06	mg/m3	NA	mg/m^3	NA	$m^3/\mu g$	NA	NA
	Chromium, VI	1.10E+00	mg/kg	1E+09	8.1E-10	mg/m^3	Modeled	1.8E-10	mg/m^3	7E-08	mg/m3	1.0E-01	mg/m^3	2E-01	$m^3/\mu g$	1.8E-09	1E-08
	Cobalt	5.93E+00	mg/kg	1E+09	4.4E-09	mg/m^3	Modeled	1.0E-09	mg/m^3	4E-07	mg/m3	6.0E-06	mg/m^3	9E-03	$m^3/\mu g$	1.7E-04	3E-09
	Copper	1.79E+01	mg/kg	1E+09	1.3E-08	mg/m^3	Modeled	3.0E-09	mg/m^3	1E-06	mg/m3	NA	mg/m^3	NA	$m^3/\mu g$	NA	NA
	Mercury	4.41E-01	mg/kg	1E+09	3.2E-10	mg/m^3	Modeled	7.4E-11	mg/m^3	3E-08	mg/m3	3.0E-05	mg/m^3	NA	$m^3/\mu g$	2.5E-06	NA
	Molybdenum	0.463	mg/kg	1E+09	3.4E-10	mg/m^3	Modeled	7.8E-11	mg/m^3	3E-08	mg/m3	NA	mg/m^3	NA	$m^3/\mu g$	NA	NA
	Nickel	9.22E+00	mg/kg	1E+09	6.8E-09	mg/m^3	Modeled	1.5E-09	mg/m^3	6E-07	mg/m3	1.4E-05	mg/m^3	3E-04	$m^3/\mu g$	1.1E-04	1E-10
	Selenium	3.98	mg/kg	1E+09	2.9E-09	mg/m^3	Modeled	6.7E-10	mg/m^3	2E-07	mg/m3	2.0E-02	mg/m^3	NA	$m^3/\mu g$	3.3E-08	NA
	Vanadium	2.91E+01	mg/kg	1E+09	2.1E-08	mg/m^3	Modeled	4.9E-09	mg/m^3	2E-06	mg/m3	1.0E-04	mg/m^3	NA	$m^3/\mu g$	4.9E-05	NA
	Zinc	6.63E+01	mg/kg	1E+09	4.9E-08	mg/m^3	Modeled	1.1E-08	mg/m^3	4E-06	mg/m3	NA	mg/m^3	NA	$m^3/\mu g$	NA	NA
	(Total)															**5.6E-04**	**2E-08**
														Total Risk Across All Exposure Routes/Pathways		**3.3E-02**	**2E-07**

Notes:
[a] *USEPA, 2018*

Abbreviations:
µg = Micrograms
EPC = Exposure point concentration
kg = Kilograms
m^3 = Cubic meter
mg = Milligrams
NA = Not applicable
TPH = Total petroleum hydrocarbon
USEPA = United States Environmental Protection Agency
VOCs = Volatile organic compounds

Dermal Absorption Factors:		Reference: *RAGS Part E EPA/540/R/99/005; July 2004*
VOCs	0.0%	No dermal absorption from soil
Cadmium	0.1%	USEPA 2018
All other metals	0.0%	No dermal absorption from soil
TPH	10.0%	USEPA 2018

Table L-23
Calculation of Construction Worker On-Site Soil Exposures, Non-cancer Hazards/Cancer Risks
Infineon Facility - Block 1
El Segundo, California

Scenario Timeframe:	Current and Future
Medium:	Near surface Soils
Receptor Population:	On-Site Construction Worker

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Particulate/ Volatilization Factor (m^3/kg)[a]	Route EPC Value	Route EPC Units	EPC Selected for Hazard	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Intake (Cancer)	Intake (Cancer) Units	Reference Dose	Reference Dose Units	Cancer Slope Factor/ Unit Risk	Cancer Slope Factor/ Unit Risk Units	Hazard Quotient	Cancer Risk
Ingestion																	
	Tetrachloroethene	3.00E-02	mg/kg	NA	3.00E-02	mg/kg	Max	8.5E-08	mg/kg-day	1.2E-09	mg/kg-day	6.0E-03	mg/kg-day	0.54	kg-day/mg	NA	7E-10
	C25-C28	2.80E+01	mg/kg	NA	2.80E+01	mg/kg	Max	7.9E-05	mg/kg-day	1.1E-06	mg/kg-day	4.0E-02	mg/kg-day	NA	kg-day/mg	2.0E-03	NA
	C29-C32	4.40E+01	mg/kg	NA	4.40E+01	mg/kg	Max	1.2E-04	mg/kg-day	1.8E-06	mg/kg-day	4.0E-02	mg/kg-day	NA	kg-day/mg	NA	NA
	C33-C36	2.60E+01	mg/kg	NA	2.60E+01	mg/kg	Max	7.3E-05	mg/kg-day	1.0E-06	mg/kg-day	NA	mg/kg-day	NA	kg-day/mg	NA	NA
	C37-C40	1.20E+01	mg/kg	NA	1.20E+01	mg/kg	Max	3.4E-05	mg/kg-day	4.8E-07	mg/kg-day	NA	mg/kg-day	NA	kg-day/mg	NA	NA
	C6-C44-TOTAL	1.20E+02	mg/kg	NA	1.20E+02	mg/kg	Max	3.4E-04	mg/kg-day	4.8E-06	mg/kg-day	NA	mg/kg-day	NA	kg-day/mg	NA	NA
	Barium	5.90E+01	mg/kg	NA	5.90E+01	mg/kg	Max	1.7E-04	mg/kg-day	2.4E-06	mg/kg-day	2.0E-01	mg/kg-day	NA	kg-day/mg	8.3E-04	NA
	Cadmium	5.84E+00	mg/kg	NA	5.84E+00	mg/kg	Max	1.7E-05	mg/kg-day	2.4E-07	mg/kg-day	1.0E-03	mg/kg-day	NA	kg-day/mg	1.7E-02	NA
	Chromium	1.25E+01	mg/kg	NA	1.25E+01	mg/kg	Max	3.5E-05	mg/kg-day	5.0E-07	mg/kg-day	1.5E+00	mg/kg-day	NA	kg-day/mg	2.4E-05	NA
	Cobalt	1.45E+01	mg/kg	NA	1.45E+01	mg/kg	Max	4.1E-05	mg/kg-day	5.9E-07	mg/kg-day	3.0E-04 (SC 3E-3)	mg/kg-day	NA	kg-day/mg	1.4E-01	NA
	Copper	1.70E+01	mg/kg	NA	1.70E+01	mg/kg	Max	4.8E-05	mg/kg-day	6.9E-07	mg/kg-day	4.0E-02	mg/kg-day	NA	kg-day/mg	1.2E-03	NA
	Nickel	8.94E+00	mg/kg	NA	8.94E+00	mg/kg	Max	2.5E-05	mg/kg-day	3.6E-07	mg/kg-day	1.1E-02	mg/kg-day	NA	kg-day/mg	2.3E-03	NA
	Selenium	1.12E+00	mg/kg	NA	1.12E+00	mg/kg	Max	3.2E-06	mg/kg-day	4.5E-08	mg/kg-day	5.0E-03	mg/kg-day	NA	kg-day/mg	6.3E-04	NA
	Vanadium	2.29E+01	mg/kg	NA	2.29E+01	mg/kg	Max	6.5E-05	mg/kg-day	9.2E-07	mg/kg-day	5.0E-03	mg/kg-day	NA	kg-day/mg	1.3E-02	NA
	Zinc	2.37E+02	mg/kg	NA	2.37E+02	mg/kg	Max	6.7E-04	mg/kg-day	9.6E-06	mg/kg-day	3.0E-01	mg/kg-day	NA	kg-day/mg	2.2E-03	NA
	(Total)															**1.8E-01**	**7E-10**
															Subchronic	**5.2E-02**	
Dermal	Tetrachloroethene	3.00E-02	mg/kg	NA	3.00E-02	mg/kg	Max	0.0E+00	mg/kg-day	0.0E+00	mg/kg-day	6.0E-03	mg/kg-day	0.54	kg-day/mg	0.0E+00	0E+00
	C25-C28	2.80E+01	mg/kg	NA	2.80E+01	mg/kg	Max	1.2E-04	mg/kg-day	1.7E-06	mg/kg-day	4.0E-02	mg/kg-day	NA	kg-day/mg	2.9E-03	NA
	C29-C32	4.40E+01	mg/kg	NA	4.40E+01	mg/kg	Max	1.8E-04	mg/kg-day	2.6E-06	mg/kg-day	4.0E-02	mg/kg-day	NA	kg-day/mg	NA	NA
	C33-C36	2.60E+01	mg/kg	NA	2.60E+01	mg/kg	Max	1.1E-04	mg/kg-day	1.5E-06	mg/kg-day	NA	mg/kg-day	NA	kg-day/mg	NA	NA
	C37-C40	1.20E+01	mg/kg	NA	1.20E+01	mg/kg	Max	5.0E-05	mg/kg-day	7.1E-07	mg/kg-day	NA	mg/kg-day	NA	kg-day/mg	NA	NA
	C6-C44-TOTAL	1.20E+02	mg/kg	NA	1.20E+02	mg/kg	Max	5.0E-04	mg/kg-day	7.1E-06	mg/kg-day	NA	mg/kg-day	NA	kg-day/mg	NA	NA
	Barium	5.90E+01	mg/kg	NA	5.90E+01	mg/kg	Max	0.0E+00	mg/kg-day	0.0E+00	mg/kg-day	1.4E-02	mg/kg-day	NA	kg-day/mg	0.0E+00	NA
	Cadmium	5.84E+00	mg/kg	NA	5.84E+00	mg/kg	Max	2.4E-07	mg/kg-day	3.4E-09	mg/kg-day	2.5E-05	mg/kg-day	NA	kg-day/mg	9.7E-03	NA
	Chromium	1.25E+01	mg/kg	NA	1.25E+01	mg/kg	Max	0.0E+00	mg/kg-day	0.0E+00	mg/kg-day	2.0E-02	mg/kg-day	NA	kg-day/mg	0.0E+00	NA
	Cobalt	1.45E+01	mg/kg	NA	1.45E+01	mg/kg	Max	0.0E+00	mg/kg-day	0.0E+00	mg/kg-day	3.0E-04	mg/kg-day	NA	kg-day/mg	0.0E+00	NA
	Copper	1.70E+01	mg/kg	NA	1.70E+01	mg/kg	Max	0.0E+00	mg/kg-day	0.0E+00	mg/kg-day	4.0E-02	mg/kg-day	NA	kg-day/mg	0.0E+00	NA
	Nickel	8.94E+00	mg/kg	NA	8.94E+00	mg/kg	Max	0.0E+00	mg/kg-day	0.0E+00	mg/kg-day	4.4E-04	mg/kg-day	NA	kg-day/mg	0.0E+00	NA
	Selenium	1.12E+00	mg/kg	NA	1.12E+00	mg/kg	Max	0.0E+00	mg/kg-day	0.0E+00	mg/kg-day	5.0E-03	mg/kg-day	NA	kg-day/mg	0.0E+00	NA
	Vanadium	2.29E+01	mg/kg	NA	2.29E+01	mg/kg	Max	0.0E+00	mg/kg-day	0.0E+00	mg/kg-day	1.3E-04	mg/kg-day	NA	kg-day/mg	0.0E+00	NA
	Zinc	2.37E+02	mg/kg	NA	2.37E+02	mg/kg	Max	0.0E+00	mg/kg-day	0.0E+00	mg/kg-day	3.0E-01	mg/kg-day	NA	kg-day/mg	0.0E+00	NA
	(Total)															**1.3E-02**	**0E+00**
Inhalation	Tetrachloroethene	3.00E-02	mg/kg	5E+02	5.5E-05	mg/m^3	Modeled	1.3E-05	mg/m^3	2E-07	mg/m^3	4.0E-02	mg/m^3	6E-06	$m^3/\mu g$	3.2E-04	1E-12
	C25-C28	2.80E+01	mg/kg	1E+06	2.8E-05	mg/m^3	Modeled	6.4E-06	mg/m^3	9E-08	mg/m^3	NA	mg/m^3	NA	$m^3/\mu g$	NA	NA
	C29-C32	4.40E+01	mg/kg	1E+06	4.4E-05	mg/m^3	Modeled	1.0E-05	mg/m^3	1E-07	mg/m^3	NA	mg/m^3	NA	$m^3/\mu g$	NA	NA
	C33-C36	2.60E+01	mg/kg	1E+06	2.6E-05	mg/m^3	Modeled	5.9E-06	mg/m^3	8E-08	mg/m^3	NA	mg/m^3	NA	$m^3/\mu g$	NA	NA
	C37-C40	1.20E+01	mg/kg	1E+06	1.2E-05	mg/m^3	Modeled	2.7E-06	mg/m^3	4E-08	mg/m^3	NA	mg/m^3	NA	$m^3/\mu g$	NA	NA
	C6-C44-TOTAL	1.20E+02	mg/kg	1E+06	1.2E-04	mg/m^3	Modeled	2.7E-05	mg/m^3	4E-07	mg/m^3	NA	mg/m^3	NA	$m^3/\mu g$	NA	NA
	Barium	5.90E+01	mg/kg	1E+06	5.9E-05	mg/m^3	Modeled	1.3E-05	mg/m^3	2E-07	mg/m^3	5.0E-04	mg/m^3	NA	$m^3/\mu g$	2.7E-02	NA
	Cadmium	5.84E+00	mg/kg	1E+06	5.8E-06	mg/m^3	Modeled	1.3E-06	mg/m^3	2E-08	mg/m^3	1.0E-05	mg/m^3	4E-03	$m^3/\mu g$	1.3E-01	8E-11
	Chromium	1.25E+01	mg/kg	1E+06	1.3E-05	mg/m^3	Modeled	2.9E-06	mg/m^3	4E-08	mg/m^3	NA	mg/m^3	NA	$m^3/\mu g$	NA	NA
	Cobalt	1.45E+01	mg/kg	1E+06	1.5E-05	mg/m^3	Modeled	3.3E-06	mg/m^3	5E-08	mg/m^3	6.0E-06	mg/m^3	9E-03	$m^3/\mu g$	5.5E-01	4E-10
	Copper	1.70E+01	mg/kg	1E+06	1.7E-05	mg/m^3	Modeled	3.9E-06	mg/m^3	6E-08	mg/m^3	NA	mg/m^3	NA	$m^3/\mu g$	NA	NA
	Nickel	8.94E+00	mg/kg	1E+06	8.9E-06	mg/m3	Modeled	2.0E-06	mg/m3	3E-08	mg/m3	1.4E-05	mg/m3	3E-04	$m^3/\mu g$	1.5E-01	8E-12
	Selenium	1.12E+00	mg/kg	1E+06	1.1E-06	mg/m3	Modeled	2.6E-07	mg/m3	4E-09	mg/m3	2.0E-02	mg/m3	NA	$m^3/\mu g$	1.3E-05	NA
	Vanadium	2.29E+01	mg/kg	1E+06	2.3E-05	mg/m3	Modeled	5.2E-06	mg/m3	7E-08	mg/m3	1.0E-04	mg/m3	NA	$m^3/\mu g$	5.2E-02	NA
	Zinc	2.37E+02	mg/kg	1E+06	2.4E-04	mg/m3	Modeled	5.4E-05	mg/m3	8E-07	mg/m3	NA	mg/m3	NA	$m^3/\mu g$	NA	NA
	(Total)															**9E-01**	**5E-10**
															Subchronic	**5.2E-01**	
															Total Risk Across All Exposure Routes/Pathways	**1E+00**	**1E-09**
															Subchronic	**6E-01**	

Note:
[a] *USEPA, 2018a*

Abbreviations:
µg = Micrograms
EPC = Exposure point concentration
kg = Kilograms
m^3 = Cubic meter
Max = Maximum
mg = Milligrams
NA = Not applicable
TPH = Total petroleum hydrocarbon
USEPA = United States Environmental Protection Agency
VOCs = Volatile organic compounds

Dermal Absorption Factors: Reference: *RAGS Part E EPA/540/R/99/005; July 2004*

VOCs	0.0%	No dermal absorption from soil
Cadmium	0.1%	USEPA 2018
All other metals	0.0%	No dermal absorption from soil
TPH	10.0%	USEPA 2018

Table L-24
Calculation of Construction Worker On-Site Soil Exposures, Non-cancer Hazards/Cancer Risks
Infineon Facility - Block 2
El Segundo, California

Scenario Timeframe:	Current and Future
Medium:	Near surface Soils
Receptor Population:	On-Site Construction Worker

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Particulate/ Volatilization Factor (m^3/kg)[a]	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Intake (Cancer)	Intake (Cancer) Units	Reference Dose	Reference Dose Units	Cancer Slope Factor/ Unit Risk	Cancer Slope Factor/ Unit Risk Units	Hazard Quotient	Cancer Risk
Ingestion																	
	Tetrachloroethene	2.10E-02	mg/kg	NA	2.10E-02	mg/kg	Max	5.9E-08	mg/kg-day	8.5E-10	mg/kg-day	6.0E-03	mg/kg-day	0.54	kg-day/mg	NA	5E-10
	Trichloroethene	2.10E-03	mg/kg	NA	2.10E-03	mg/kg	Max	5.9E-09	mg/kg-day	8.5E-11	mg/kg-day	5.0E-04	mg/kg-day	0.046	kg-day/mg	1.2E-05	4E-12
	C25-C28	36	mg/kg	NA	36	mg/kg	Max	1.0E-04	mg/kg-day	1.5E-06	mg/kg-day	4.0E-02	mg/kg-day	NA	kg-day/mg	NA	NA
	C29-C32	52	mg/kg	NA	52	mg/kg	Max	1.5E-04	mg/kg-day	2.1E-06	mg/kg-day	4.0E-02	mg/kg-day	NA	kg-day/mg	NA	NA
	C33-C36	33	mg/kg	NA	33	mg/kg	Max	9.3E-05	mg/kg-day	1.3E-06	mg/kg-day	NA	mg/kg-day	NA	kg-day/mg	NA	NA
	C37-C40	16	mg/kg	NA	16	mg/kg	Max	4.5E-05	mg/kg-day	6.5E-07	mg/kg-day	NA	mg/kg-day	NA	kg-day/mg	NA	NA
	EFH(C19-C20)	15	mg/kg	NA	15	mg/kg	Max	4.2E-05	mg/kg-day	6.1E-07	mg/kg-day	4.0E-02	mg/kg-day	NA	kg-day/mg	1.1E-03	NA
	EFH(C21-C22)	11	mg/kg	NA	11	mg/kg	Max	3.1E-05	mg/kg-day	4.4E-07	mg/kg-day	4.0E-02	mg/kg-day	NA	kg-day/mg	7.8E-04	NA
	EFH(C23-C24)	14	mg/kg	NA	14	mg/kg	Max	4.0E-05	mg/kg-day	5.7E-07	mg/kg-day	4.0E-02	mg/kg-day	NA	kg-day/mg	9.9E-04	NA
	Barium	7.17E+01	mg/kg	NA	7.17E+01	mg/kg	Max	2.0E-04	mg/kg-day	2.9E-06	mg/kg-day	2.0E-01	mg/kg-day	NA	kg-day/mg	1.0E-03	NA
	Beryllium	2.78E-01	mg/kg	NA	2.78E-01	mg/kg	Max	7.9E-07	mg/kg-day	1.1E-08	mg/kg-day	2.0E-04	mg/kg-day	NA	kg-day/mg	3.9E-03	NA
	Cadmium	2.61E+00	mg/kg	NA	2.61E+00	mg/kg	Max	7.4E-06	mg/kg-day	1.1E-07	mg/kg-day	1.0E-03	mg/kg-day	NA	kg-day/mg	7.4E-03	NA
	Chromium	2.76E+01	mg/kg	NA	2.76E+01	mg/kg	Max	7.8E-05	mg/kg-day	1.1E-06	mg/kg-day	1.5E+00	mg/kg-day	NA	kg-day/mg	5.2E-05	NA
	Chromium, VI	1.10E+00	mg/kg	NA	1.10E+00	mg/kg	Max	3.1E-06	mg/kg-day	4.4E-08	mg/kg-day	3.0E-03	mg/kg-day	0.5	kg-day/mg	1.0E-03	2E-08
	Cobalt	5.93E+00	mg/kg	NA	5.93E+00	mg/kg	Max	1.7E-05	mg/kg-day	2.4E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	kg-day/mg	5.6E-02	NA
	Copper	1.79E+01	mg/kg	NA	1.79E+01	mg/kg	Max	5.1E-05	mg/kg-day	7.2E-07	mg/kg-day	4.0E-02	mg/kg-day	NA	kg-day/mg	1.3E-03	NA
	Mercury	4.41E-01	mg/kg	NA	4.41E-01	mg/kg	Max	1.2E-06	mg/kg-day	1.8E-08	mg/kg-day	1.6E-04	mg/kg-day	NA	kg-day/mg	7.8E-03	NA
	Molybdenum	0.463	mg/kg	NA	0.463	mg/kg	Max	1.3E-06	mg/kg-day	1.9E-08	mg/kg-day	5.0E-03	mg/kg-day	NA	kg-day/mg	2.6E-04	NA
	Nickel	9.22E+00	mg/kg	NA	9.22E+00	mg/kg	Max	2.6E-05	mg/kg-day	3.7E-07	mg/kg-day	1.1E-02	mg/kg-day	NA	kg-day/mg	2.4E-03	NA
	Selenium	3.98	mg/kg	NA	3.98	mg/kg	Max	1.1E-05	mg/kg-day	1.6E-07	mg/kg-day	5.0E-03	mg/kg-day	NA	kg-day/mg	2.2E-03	NA
	Vanadium	2.91E+01	mg/kg	NA	2.91E+01	mg/kg	Max	8.2E-05	mg/kg-day	1.2E-06	mg/kg-day	5.0E-03	mg/kg-day	NA	kg-day/mg	1.6E-02	NA
	Zinc	6.63E+01	mg/kg	NA	6.63E+01	mg/kg	Max	1.9E-04	mg/kg-day	2.7E-06	mg/kg-day	3.0E-01	mg/kg-day	NA	kg-day/mg	6.2E-04	NA
	(Total)															**1.0E-01**	**2E-08**
Dermal	Tetrachloroethene	2.10E-02	mg/kg	NA	2.10E-02	mg/kg	Max	0.0E+00	mg/kg-day	0.0E+00	mg/kg-day	6.0E-03	mg/kg-day	0.54	kg-day/mg	NA	0E+00
	Trichloroethene	2.10E-03	mg/kg	NA	2.10E-03	mg/kg	Max	0.0E+00	mg/kg-day	0.0E+00	mg/kg-day	5.0E-04	mg/kg-day	0.046	kg-day/mg	0.0E+00	0E+00
	C25-C28	36	mg/kg	NA	36	mg/kg	Max	1.5E-04	mg/kg-day	2.1E-06	mg/kg-day	4.0E-02	mg/kg-day	NA	kg-day/mg	NA	NA
	C29-C32	52	mg/kg	NA	52	mg/kg	Max	2.1E-04	mg/kg-day	3.1E-06	mg/kg-day	4.0E-02	mg/kg-day	NA	kg-day/mg	NA	NA
	C33-C36	33	mg/kg	NA	33	mg/kg	Max	1.4E-04	mg/kg-day	1.9E-06	mg/kg-day	NA	mg/kg-day	NA	kg-day/mg	NA	NA
	C37-C40	16	mg/kg	NA	16	mg/kg	Max	6.6E-05	mg/kg-day	9.4E-07	mg/kg-day	NA	mg/kg-day	NA	kg-day/mg	NA	NA
	EFH(C19-C20)	15	mg/kg	NA	15	mg/kg	Max	6.2E-05	mg/kg-day	8.9E-07	mg/kg-day	4.0E-02	mg/kg-day	NA	kg-day/mg	1.5E-03	NA
	EFH(C21-C22)	11	mg/kg	NA	11	mg/kg	Max	4.5E-05	mg/kg-day	6.5E-07	mg/kg-day	4.0E-02	mg/kg-day	NA	kg-day/mg	1.1E-03	NA
	EFH(C23-C24)	14	mg/kg	NA	14	mg/kg	Max	5.8E-05	mg/kg-day	8.3E-07	mg/kg-day	4.0E-02	mg/kg-day	NA	kg-day/mg	1.4E-03	NA
	Barium	7.17E+01	mg/kg	NA	7.17E+01	mg/kg	Max	0.0E+00	mg/kg-day	0.0E+00	mg/kg-day	1.4E-02	mg/kg-day	NA	kg-day/mg	0.0E+00	NA
	Beryllium	2.78E-01	mg/kg	NA	2.78E-01	mg/kg	Max	0.0E+00	mg/kg-day	0.0E+00	mg/kg-day	2.0E-04	mg/kg-day	NA	kg-day/mg	0.0E+00	NA
	Cadmium	2.61E+00	mg/kg	NA	2.61E+00	mg/kg	Max	1.1E-07	mg/kg-day	1.5E-09	mg/kg-day	2.5E-05	mg/kg-day	NA	kg-day/mg	4.3E-03	NA
	Chromium	2.76E+01	mg/kg	NA	2.76E+01	mg/kg	Max	0.0E+00	mg/kg-day	0.0E+00	mg/kg-day	2.0E-02	mg/kg-day	NA	kg-day/mg	0.0E+00	NA
	Chromium, VI	1.10E+00	mg/kg	NA	1.10E+00	mg/kg	Max	0.0E+00	mg/kg-day	0.0E+00	mg/kg-day	3.0E-03	mg/kg-day	0.5	kg-day/mg	0.0E+00	0E+00
	Cobalt	5.93E+00	mg/kg	NA	5.93E+00	mg/kg	Max	0.0E+00	mg/kg-day	0.0E+00	mg/kg-day	3.0E-04	mg/kg-day	NA	kg-day/mg	0.0E+00	NA
	Copper	1.79E+01	mg/kg	NA	1.79E+01	mg/kg	Max	0.0E+00	mg/kg-day	0.0E+00	mg/kg-day	4.0E-02	mg/kg-day	NA	kg-day/mg	0.0E+00	NA
	Mercury	4.41E-01	mg/kg	NA	4.41E-01	mg/kg	Max	0.0E+00	mg/kg-day	0.0E+00	mg/kg-day	1.1E-05	mg/kg-day	NA	kg-day/mg	0.0E+00	NA
	Molybdenum	0.463	mg/kg	NA	0.463	mg/kg	Max	0.0E+00	mg/kg-day	0.0E+00	mg/kg-day	5.0E-03	mg/kg-day	NA	kg-day/mg	0.0E+00	NA
	Nickel	9.22E+00	mg/kg	NA	9.22E+00	mg/kg	Max	0.0E+00	mg/kg-day	0.0E+00	mg/kg-day	4.4E-04	mg/kg-day	NA	kg-day/mg	0.0E+00	NA
	Selenium	3.98	mg/kg	NA	3.98	mg/kg	Max	0.0E+00	mg/kg-day	0.0E+00	mg/kg-day	5.0E-03	mg/kg-day	NA	kg-day/mg	0.0E+00	NA
	Vanadium	2.91E+01	mg/kg	NA	2.91E+01	mg/kg	Max	0.0E+00	mg/kg-day	0.0E+00	mg/kg-day	1.3E-04	mg/kg-day	NA	kg-day/mg	0.0E+00	NA
	Zinc	6.63E+01	mg/kg	NA	6.63E+01	mg/kg	Max	0.0E+00	mg/kg-day	0.0E+00	mg/kg-day	3.0E-01	mg/kg-day	NA	kg-day/mg	0.0E+00	NA
	(Total)															**8.4E-03**	**0E+00**

Table L-24
Calculation of Construction Worker On-Site Soil Exposures, Non-cancer Hazards/Cancer Risks
Infineon Facility - Block 2
El Segundo, California

Scenario Timeframe:	Current and Future
Medium:	Near surface Soils
Receptor Population:	On-Site Construction Worker

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Particulate/ Volatilization Factor (m^3/kg)[a]	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Intake (Cancer)	Intake (Cancer) Units	Reference Dose	Reference Dose Units	Cancer Slope Factor/ Unit Risk	Cancer Slope Factor/ Unit Risk Units	Hazard Quotient	Cancer Risk
Inhalation	Tetrachloroethene	2.10E-02	mg/kg	5E+02	3.9E-05	mg/m^3	Modeled	8.9E-06	mg/m^3	1E-07	mg/m^3	4.0E-02	mg/m^3	6E-06	$m^3/\mu g$	2.2E-04	8E-13
	Trichloroethene	2.10E-03	mg/kg	5E+02	3.9E-06	mg/m^3	Modeled	8.9E-07	mg/m^3	1E-08	mg/m^3	2.0E-03	mg/m^3	4E-06	$m^3/\mu g$	4.4E-04	5E-14
	C25-C28	36	mg/kg	1E+06	3.6E-05	mg/m^3	Modeled	8.2E-06	mg/m^3	1E-07	mg/m^3	NA	mg/m^3	NA	$m^3/\mu g$	NA	NA
	C29-C32	52	mg/kg	1E+06	5.2E-05	mg/m^3	Modeled	1.2E-05	mg/m^3	2E-07	mg/m^3	NA	mg/m^3	NA	$m^3/\mu g$	NA	NA
	C33-C36	33	mg/kg	1E+06	3.3E-05	mg/m^3	Modeled	7.5E-06	mg/m^3	1E-07	mg/m^3	NA	mg/m^3	NA	$m^3/\mu g$	NA	NA
	C37-C40	16	mg/kg	1E+06	1.6E-05	mg/m^3	Modeled	3.7E-06	mg/m^3	5E-08	mg/m^3	NA	mg/m^3	NA	$m^3/\mu g$	NA	NA
	EFH(C19-C20)	15	mg/kg	1E+06	1.5E-05	mg/m^3	Modeled	3.4E-06	mg/m^3	5E-08	mg/m^3	NA	mg/m^3	NA	$m^3/\mu g$	NA	NA
	EFH(C21-C22)	11	mg/kg	1E+06	1.1E-05	mg/m^3	Modeled	2.5E-06	mg/m^3	4E-08	mg/m^3	NA	mg/m^3	NA	$m^3/\mu g$	NA	NA
	EFH(C23-C24)	14	mg/kg	1E+06	1.4E-05	mg/m^3	Modeled	3.2E-06	mg/m^3	5E-08	mg/m^3	NA	mg/m^3	NA	$m^3/\mu g$	NA	NA
	Barium	7.17E+01	mg/kg	1E+06	7.2E-05	mg/m^3	Modeled	1.6E-05	mg/m^3	2E-07	mg/m^3	5.0E-04	mg/m^3	NA	$m^3/\mu g$	3.3E-02	NA
	Beryllium	2.78E-01	mg/kg	1E+06	2.8E-07	mg/m^3	Modeled	6.3E-08	mg/m^3	9E-10	mg/m^3	7.0E-06	mg/m^3	2E-03	m3/µg	9.1E-03	2E-12
	Cadmium	2.61E+00	mg/kg	1E+06	2.6E-06	mg/m^3	Modeled	6.0E-07	mg/m^3	9E-09	mg/m^3	1.0E-05	mg/m^3	4E-03	m3/µg	6.0E-02	4E-11
	Chromium	2.76E+01	mg/kg	1E+06	2.8E-05	mg/m^3	Modeled	6.3E-06	mg/m^3	9E-08	mg/m^3	NA	mg/m^3	NA	m3/µg	NA	NA
	Chromium, VI	1.10E+00	mg/kg	1E+06	1.1E-06	mg/m^3	Modeled	2.5E-07	mg/m^3	4E-09	mg/m^3	1.0E-01	mg/m^3	2E-01	m3/µg	2.5E-06	5E-10
	Cobalt	5.93E+00	mg/kg	1E+06	5.9E-06	mg/m^3	Modeled	1.4E-06	mg/m^3	2E-08	mg/m^3	6.0E-06	mg/m^3	9E-03	m3/µg	2.3E-01	2E-10
	Copper	1.79E+01	mg/kg	1E+06	1.8E-05	mg/m^3	Modeled	4.1E-06	mg/m^3	6E-08	mg/m^3	NA	mg/m^3	NA	m3/µg	NA	NA
	Mercury	4.41E-01	mg/kg	1E+06	4.4E-07	mg/m^3	Modeled	1.0E-07	mg/m^3	1E-09	mg/m^3	3.0E-05	mg/m^3	NA	m3/µg	3.4E-03	NA
	Molybdenum	0.463	mg/kg	1E+06	4.6E-07	mg/m^3	Modeled	1.1E-07	mg/m^3	2E-09	mg/m^3	NA	mg/m^3	NA	m3/µg	NA	NA
	Nickel	9.22E+00	mg/kg	1E+06	9.2E-06	mg/m^3	Modeled	2.1E-06	mg/m^3	3E-08	mg/m^3	1.4E-05	mg/m^3	3E-04	m3/µg	1.5E-01	8E-12
	Selenium	3.98	mg/kg	1E+06	4.0E-06	mg/m^3	Modeled	9.1E-07	mg/m^3	1E-08	mg/m^3	2.0E-02	mg/m^3	NA	m3/µg	4.5E-05	NA
	Vanadium	2.91E+01	mg/kg	1E+06	2.9E-05	mg/m^3	Modeled	6.6E-06	mg/m^3	9E-08	mg/m^3	1.0E-04	mg/m^3	NA	m3/µg	6.6E-02	NA
	Zinc	6.63E+01	mg/kg	1E+06	6.6E-05	mg/m^3	Modeled	1.5E-05	mg/m^3	2E-07	mg/m^3	NA	mg/m^3	NA	m3/µg	NA	NA
	(Total)															**5E-01**	**8E-10**
											Total Risk Across All Exposure Routes/Pathways					**7E-01**	**2E-08**

Notes:
[a]USEPA, 2018a

Abbreviations:
µg = Micrograms
EPC = Exposure point concentration
kg = Kilograms
m^3 = Cubic meter
Max = Maximum
mg = Milligrams
NA = Not applicable
TPH = Total petroleum hydrocarbon
USEPA = United States Environmental Protection Agency
VOCs = Volatile organic compounds

Dermal Absorption Factors:	Reference: *RAGS Part E EPA/540/R/99/005; July 2004*	
VOCs	0.0%	No dermal absorption from soil
Cadmium	0.1%	USEPA 2018
All other metals	0.0%	No dermal absorption from soil
TPH	10.0%	USEPA 2018

Table L-25
Calculation of Commercial Worker Shallow Soil Vapor Intrusion - Air Exposures, Non-cancer Hazards/Cancer Risks - Block 1
Infineon Facility
El Segundo, California

Scenario Timeframe:	Future
Medium:	Shallow Soil Vapor
Receptor Population:	Commercial worker

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Medium EPC Selected	AF	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Intake (Cancer)	Intake (Cancer) Units	Reference Dose/ Concentration	Reference Dose Units	Cancer Slope Factor/ Unit Risk	Cancer Slope Factor/ Unit Risk Units	Hazard Quotient	Cancer Risk
Inhalation																		
	Chloroform (Trichloromethane)	1.40E+02	µg/m^3	Max	3E-02	4.20E+00	µg/m^3	Modeled Max	9.6E-04	mg/m^3	3.4E-01	µg/m^3	9.8E-02	mg/m^3	2.30E-05	(µg/m^3)$^{-1}$	9.8E-03	8E-06
	1,1-Dichloroethene	1.28E+01	µg/m^3	Max	3E-02	3.84E-01	µg/m^3	Modeled Max	8.8E-05	mg/m^3	3.1E-02	µg/m^3	7.0E-02	mg/m^3	NA	(µg/m^3)$^{-1}$	1.3E-03	NA
	cis-1,2-Dichloroethene	1.32E+01	µg/m^3	Max	3E-02	3.96E-01	µg/m^3	Modeled Max	9.0E-05	mg/m^3	3.2E-02	µg/m^3	8.0E-03	mg/m^3	NA	(µg/m^3)$^{-1}$	1.1E-02	NA
	1,4-Dioxane	2.81E+01	µg/m^3	Max	3E-02	8.43E-01	µg/m^3	Modeled Max	1.9E-04	mg/m^3	6.9E-02	µg/m^3	3.0E-02	mg/m^3	5.00E-06	(µg/m^3)$^{-1}$	6.4E-03	3E-07
	Ethylbenzene	1.04E+01	µg/m^3	Max	3E-02	3.12E-01	µg/m^3	Modeled Max	7.1E-05	mg/m^3	2.5E-02	µg/m^3	1.0E+00	mg/m^3	2.50E-06	(µg/m^3)$^{-1}$	7.1E-05	6E-08
	Tetrachloroethene	7.63E+04	µg/m^3	Max	3E-02	2.29E+03	µg/m^3	Modeled Max	5.2E-01	mg/m^3	1.9E+02	µg/m^3	4.0E-02	mg/m^3	6.10E-06	(µg/m^3)$^{-1}$	1.3E+01	1E-03
	Toluene	9.57E+00	µg/m^3	Max	3E-02	2.87E-01	µg/m^3	Modeled Max	6.6E-05	mg/m^3	2.3E-02	µg/m^3	3.0E-01	mg/m^3	NA	(µg/m^3)$^{-1}$	2.2E-04	NA
	Trichloroethene	2.08E+03	µg/m^3	Max	3E-02	6.24E+01	µg/m^3	Modeled Max	1.4E-02	mg/m^3	5.1E+00	µg/m^3	2.0E-03	mg/m^3	4.10E-06	(µg/m^3)$^{-1}$	7.1E+00	2E-05
	Trichlorofluoromethane	1.30E+01	µg/m^3	Max	3E-02	3.90E-01	µg/m^3	Modeled Max	8.9E-05	mg/m^3	3.2E-02	µg/m^3	1.2E+00	mg/m^3	NA	(µg/m^3)$^{-1}$	7.4E-05	NA
	Trichlorotrifluoroethane (Freon-113)	2.12E+02	µg/m^3	Max	3E-02	6.36E+00	µg/m^3	Modeled Max	1.5E-03	mg/m^3	5.2E-01	µg/m^3	5.0E+00	mg/m^3	NA	(µg/m^3)$^{-1}$	2.9E-04	NA
	1,2,4-Trimethylbenzene	2.05E+01	µg/m^3	Max	3E-02	6.15E-01	µg/m^3	Modeled Max	1.4E-04	mg/m^3	5.0E-02	µg/m^3	6.0E-02	mg/m^3	NA	(µg/m^3)$^{-1}$	2.3E-03	NA
	1,3,5-Trimethylbenzene	9.29E+00	µg/m^3	Max	3E-02	2.79E-01	µg/m^3	Modeled Max	6.4E-05	mg/m^3	2.3E-02	µg/m^3	6.0E-02	mg/m^3	NA	(µg/m^3)$^{-1}$	1.1E-03	NA
	o-Xylene	1.84E+01	µg/m^3	Max	3E-02	5.52E-01	µg/m^3	Modeled Max	1.3E-04	mg/m^3	4.5E-02	µg/m^3	1.0E-01	mg/m^3	NA	(µg/m^3)$^{-1}$	1.3E-03	NA
	m,p-Xylenes	4.59E+01	µg/m^3	Max	3E-02	1.38E+00	µg/m^3	Modeled Max	3.1E-04	mg/m^3	1.1E-01	µg/m^3	1.0E-01	mg/m^3	NA	(µg/m^3)$^{-1}$	3.1E-03	NA
	(Total)																**2.0E+01**	**1E-03**

Abbreviations:
µg = Micrograms
AF = Attenuation factor
EPC = Exposure point concentration
m^3 = Cubic meters
mg = Milligrams
NA = Not applicable

Table L-26
Calculation of Commercial Worker Deep Soil Vapor Intrusion - Air Exposures, Non-cancer Hazards/Cancer Risks - Block 1
Infineon Facility
El Segundo, California

Scenario Timeframe:	Future
Medium:	Deep Soil Vapor
Receptor Population:	Commercial worker

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Medium EPC Selected	AF	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Intake (Cancer)	Intake (Cancer) Units	Reference Dose/ Concentration	Reference Dose Units	Cancer Slope Factor/ Unit Risk	Cancer Slope Factor/ Unit Risk Units	Hazard Quotient	Cancer Risk
Inhalation																		
Indoor air	Benzene	2.00E+01	µg/m^3	Max	3E-02	6.00E-01	µg/m^3	Modeled Max	1.4E-04	mg/m^3	5E-02	µg/m^3	3.0E-03	mg/m^3	2.90E-05	(µg/m^3)$^{-1}$	4.6E-02	1E-06
	Acetone	4.70E+03	µg/m^3	Max	3E-02	1.41E+02	µg/m^3	Modeled Max	3.2E-02	mg/m^3	1.1E+01	µg/m^3	3.1E+01	mg/m^3	NA	(µg/m^3)$^{-1}$	1.0E-03	NA
	Chloroform (Trichloromethane)	5.50E+02	µg/m^3	Max	3E-02	1.65E+01	µg/m^3	Modeled Max	3.8E-03	mg/m^3	1.3E+00	µg/m^3	9.8E-02	mg/m^3	2.30E-05	(µg/m^3)$^{-1}$	3.8E-02	3E-05
	1,1-Dichloroethene	7.60E+02	µg/m^3	Max	3E-02	2.28E+01	µg/m^3	Modeled Max	5.2E-03	mg/m^3	1.9E+00	µg/m^3	7.0E-02	mg/m^3	NA	(µg/m^3)$^{-1}$	7.4E-02	NA
	cis-1,2-Dichloroethene	2.60E+03	µg/m^3	Max	3E-02	7.80E+01	µg/m^3	Modeled Max	1.8E-02	mg/m^3	6.4E+00	µg/m^3	8.0E-03	mg/m^3	NA	(µg/m^3)$^{-1}$	2.2E+00	NA
	Tetrachloroethene	6.90E+05	µg/m^3	Max	3E-02	2.07E+04	µg/m^3	Modeled Max	4.7E+00	mg/m^3	1.7E+03	µg/m^3	4.0E-02	mg/m^3	6.10E-06	(µg/m^3)$^{-1}$	1.2E+02	1E-02
	1,1,1-Trichloroethane	1.10E+02	µg/m^3	Max	3E-02	3.30E+00	µg/m^3	Modeled Max	7.5E-04	mg/m^3	2.7E-01	µg/m^3	1.0E+00	mg/m^3	NA	(µg/m^3)$^{-1}$	7.5E-04	NA
	Trichloroethene	8.20E+04	µg/m^3	Max	3E-02	2.46E+03	µg/m^3	Modeled Max	5.6E-01	mg/m^3	2.0E+02	µg/m^3	2.0E-03	mg/m^3	4.10E-06	(µg/m^3)$^{-1}$	2.8E+02	8E-04
	Trichlorofluoromethane	3.80E+02	µg/m^3	Max	3E-02	1.14E+01	µg/m^3	Modeled Max	2.6E-03	mg/m^3	9.3E-01	µg/m^3	1.2E+00	mg/m^3	NA	(µg/m^3)$^{-1}$	2.2E-03	NA
	Trichlorotrifluoroethane (Freon-113)	9.30E+03	µg/m^3	Max	3E-02	2.79E+02	µg/m^3	Modeled Max	6.4E-02	mg/m^3	2.3E+01	µg/m^3	5.0E+00	mg/m^3	NA	(µg/m^3)$^{-1}$	1.3E-02	NA
	(Total)																**4.0E+02**	**1E-02**

Abbreviations:
µg = Micrograms
AF = Attenuation factor
EPC = Exposure point concentration
m^3 = Cubic meters
mg = Milligrams
NA = Not applicable

Table L-27
Calculation of Commercial Worker Shallow Soil Vapor Intrusion - Air Exposures, Non-cancer Hazards/Cancer Risks - Block 2
Infineon Facility
El Segundo, California

Scenario Timeframe:	Future
Medium:	Shallow Soil Vapor
Receptor Population:	Commercial worker

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Medium EPC Selected	AF	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Intake (Cancer)	Intake (Cancer) Units	Reference Dose/ Concentration	Reference Dose Units	Cancer Slope Factor/ Unit Risk	Cancer Slope Factor/ Unit Risk Units	Hazard Quotient	Cancer Risk
Inhalation																		
Indoor air	Benzene	8.40E+00	µg/m^3	Max	3E-02	2.52E-01	µg/m^3	Modeled Max	5.8E-05	mg/m^3	2E-02	µg/m^3	3.0E-03	mg/m^3	2.90E-05	(µg/m^3)$^{-1}$	1.9E-02	6E-07
	Acetone	2.78E+02	µg/m^3	Max	3E-02	8.34E+00	µg/m^3	Modeled Max	1.9E-03	mg/m^3	6.8E-01	µg/m^3	3.1E+01	mg/m^3	NA	(µg/m^3)$^{-1}$	6.2E-05	NA
	Chloroform (Trichloromethane)	1.40E+02	µg/m^3	Max	3E-02	4.20E+00	µg/m^3	Modeled Max	9.6E-04	mg/m^3	3.4E-01	µg/m^3	9.8E-02	mg/m^3	2.30E-05	(µg/m^3)$^{-1}$	9.8E-03	8E-06
	1,1-Dichloroethane	7.04	µg/m^3	Max	3E-02	2.11E-01	µg/m^3	Modeled Max	4.8E-05	mg/m^3	1.7E-02	µg/m^3	8.0E-01	mg/m^3	1.60E-06	(µg/m^3)$^{-1}$	6.0E-05	3E-08
	1,1-Dichloroethene	5.87E+02	µg/m^3	Max	3E-02	1.76E+01	µg/m^3	Modeled Max	4.0E-03	mg/m^3	1.4E+00	µg/m^3	7.0E-02	mg/m^3	NA	(µg/m^3)$^{-1}$	5.7E-02	NA
	cis-1,2-Dichloroethene	3.38E+01	µg/m^3	Max	3E-02	1.01E+00	µg/m^3	Modeled Max	2.3E-04	mg/m^3	8.3E-02	µg/m^3	8.0E-03	mg/m^3	NA	(µg/m^3)$^{-1}$	2.9E-02	NA
	Ethylbenzene	1.15E+01	µg/m^3	Max	3E-02	3.45E-01	µg/m^3	Modeled Max	7.9E-05	mg/m^3	2.8E-02	µg/m^3	1.0E+00	mg/m^3	2.50E-06	(µg/m^3)$^{-1}$	7.9E-05	7E-08
	Tetrachloroethene	3.13E+04	µg/m^3	Max	3E-02	9.39E+02	µg/m^3	Modeled Max	2.1E-01	mg/m^3	7.7E+01	µg/m^3	4.0E-02	mg/m^3	6.10E-06	(µg/m^3)$^{-1}$	5.4E+00	5E-04
	Tetrahydrofuran	5.53E+00	µg/m^3	Max	3E-02	1.66E-01	µg/m^3	Modeled Max	3.8E-05	mg/m^3	1.4E-02	µg/m^3	2.0E+00	mg/m^3	NA	(µg/m^3)$^{-1}$	1.9E-05	NA
	Toluene	5.54E+01	µg/m^3	Max	3E-02	1.66E+00	µg/m^3	Modeled Max	3.8E-04	mg/m^3	1.4E-01	µg/m^3	3.0E-01	mg/m^3	NA	(µg/m^3)$^{-1}$	1.3E-03	NA
	1,1,1-Trichloroethane	9.22E+01	µg/m^3	Max	3E-02	2.77E+00	µg/m^3	Modeled Max	6.3E-04	mg/m^3	2.3E-01	µg/m^3	1.0E+00	mg/m^3	NA	(µg/m^3)$^{-1}$	6.3E-04	NA
	Trichloroethene	1.73E+04	µg/m^3	Max	3E-02	5.19E+02	µg/m^3	Modeled Max	1.2E-01	mg/m^3	4.2E+01	µg/m^3	2.0E-03	mg/m^3	4.10E-06	(µg/m^3)$^{-1}$	5.9E+01	2E-04
	Trichlorofluoromethane	9.77E+02	µg/m^3	Max	3E-02	2.93E+01	µg/m^3	Modeled Max	6.7E-03	mg/m^3	2.4E+00	µg/m^3	1.2E+00	mg/m^3	NA	(µg/m^3)$^{-1}$	5.6E-03	NA
	Trichlorotrifluoroethane (Freon-113)	1.33E+02	µg/m^3	Max	3E-02	3.99E+00	µg/m^3	Modeled Max	9.1E-04	mg/m^3	3.3E-01	µg/m^3	5.0E+00	mg/m^3	NA	(µg/m^3)$^{-1}$	1.8E-04	NA
	1,2,4-Trimethylbenzene	1.46E+01	µg/m^3	Max	3E-02	4.38E-01	µg/m^3	Modeled Max	1.0E-04	mg/m^3	3.6E-02	µg/m^3	6.0E-02	mg/m^3	NA	(µg/m^3)$^{-1}$	1.7E-03	NA
	o-Xylene	2.99E+01	µg/m^3	Max	3E-02	8.97E-01	µg/m^3	Modeled Max	2.0E-04	mg/m^3	7.3E-02	µg/m^3	1.0E-01	mg/m^3	NA	(µg/m^3)$^{-1}$	2.0E-03	NA
	m,p-Xylenes	6.44E+01	µg/m^3	Max	3E-02	1.93E+00	µg/m^3	Modeled Max	4.4E-04	mg/m^3	1.6E-01	µg/m^3	1.0E-01	mg/m^3	NA	(µg/m^3)$^{-1}$	4.4E-03	NA
	(Total)																**6.5E+01**	**6E-04**

Abbreviations:
µg = Micrograms
AF = Attenuation factor
EPC = Exposure point concentration
m^3 = Cubic meters
mg = Milligrams
NA = Not applicable

Table L-28
Calculation of Commercial Worker Deep Soil Vapor Intrusion - Air Exposures, Non-cancer Hazards/Cancer Risks - Block 2
Infineon Facility
El Segundo, California

Scenario Timeframe:	Future
Medium:	Deep Soil Vapor
Receptor Population:	Commercial worker

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Medium EPC Selected	AF	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Intake (Cancer)	Intake (Cancer) Units	Reference Dose/ Concentration	Reference Dose Units	Cancer Slope Factor/ Unit Risk	Cancer Slope Factor/ Unit Risk Units	Hazard Quotient	Cancer Risk
Inhalation																		
Indoor air	Benzene	4.00E+01	µg/m^3	Max	3E-02	1.20E+00	µg/m^3	Modeled Max	2.7E-04	mg/m^3	1E-01	µg/m^3	3.0E-03	mg/m^3	2.90E-05	(µg/m^3)$^{-1}$	9.1E-02	3E-06
	Acetone	9.80E+03	µg/m^3	Max	3E-02	2.94E+02	µg/m^3	Modeled Max	6.7E-02	mg/m^3	2.4E+01	µg/m^3	3.1E+01	mg/m^3	NA	(µg/m^3)$^{-1}$	2.2E-03	NA
	Chloroform (Trichloromethane)	2.00E+02	µg/m^3	Max	3E-02	6.00E+00	µg/m^3	Modeled Max	1.4E-03	mg/m^3	4.9E-01	µg/m^3	9.8E-02	mg/m^3	2.30E-05	(µg/m^3)$^{-1}$	1.4E-02	1E-05
	1,1-Dichloroethene	3.60E+03	µg/m^3	Max	3E-02	1.08E+02	µg/m^3	Modeled Max	2.5E-02	mg/m^3	8.8E+00	µg/m^3	7.0E-02	mg/m^3	NA	(µg/m^3)$^{-1}$	3.5E-01	NA
	cis-1,2-Dichloroethene	6.80E+02	µg/m^3	Max	3E-02	2.04E+01	µg/m^3	Modeled Max	4.7E-03	mg/m^3	1.7E+00	µg/m^3	8.0E-03	mg/m^3	NA	(µg/m^3)$^{-1}$	5.8E-01	NA
	Tetrachloroethene	7.30E+04	µg/m^3	Max	3E-02	2.19E+03	µg/m^3	Modeled Max	5.0E-01	mg/m^3	1.8E+02	µg/m^3	4.0E-02	mg/m^3	6.10E-06	(µg/m^3)$^{-1}$	1.3E+01	1E-03
	1,1,1-Trichloroethane	1.80E+02	µg/m^3	Max	3E-02	5.40E+00	µg/m^3	Modeled Max	1.2E-03	mg/m^3	4.4E-01	µg/m^3	1.0E+00	mg/m^3	NA	(µg/m^3)$^{-1}$	1.2E-03	NA
	Trichloroethene	5.20E+04	µg/m^3	Max	3E-02	1.56E+03	µg/m^3	Modeled Max	3.6E-01	mg/m^3	1.3E+02	µg/m^3	2.0E-03	mg/m^3	4.10E-06	(µg/m^3)$^{-1}$	1.8E+02	5E-04
	Trichlorofluoromethane	2.40E+03	µg/m^3	Max	3E-02	7.20E+01	µg/m^3	Modeled Max	1.6E-02	mg/m^3	5.9E+00	µg/m^3	1.2E+00	mg/m^3	NA	(µg/m^3)$^{-1}$	1.4E-02	NA
	Trichlorotrifluoroethane (Freon-113)	1.80E+03	µg/m^3	Max	3E-02	5.40E+01	µg/m^3	Modeled Max	1.2E-02	mg/m^3	4.4E+00	µg/m^3	5.0E+00	mg/m^3	NA	(µg/m^3)$^{-1}$	2.5E-03	NA
	(Total)																**1.9E+02**	**2E-03**

Abbreviations:
µg = Micrograms
AF = Attenuation factor
EPC = Exposure point concentration
m^3 = Cubic meters
mg = Milligrams
NA = Not applicable

Table L-29
Calculation of Commercial Worker - Indoor Air Exposures, Non-cancer Hazards/Cancer Risks - Block 1
Infineon Facility
El Segundo, California

Scenario Timeframe:	Future
Medium:	Indoor Air
Receptor Population:	Commercial worker

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Medium EPC Selected	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Intake (Cancer)	Intake (Cancer) Units	Reference Dose/ Concentration	Reference Dose Units	Cancer Slope Factor/ Unit Risk	Cancer Slope Factor/ Unit Risk Units	Hazard Quotient	Cancer Risk
Inhalation																	
	Acetone	2.40E+01	µg/m^3	Max	2.40E+01	µg/m^3	Modeled Max	5.5E-03	mg/m^3	2.0E+00	µg/m^3	3.1E+01	mg/m^3	NA	(µg/m^3)$^{-1}$	1.8E-04	NA
	Chloromethane	1.40E+00	µg/m^3	Max	1.40E+00	µg/m^3	Modeled Max	3.2E-04	mg/m^3	1.1E-01	µg/m^3	9.0E-02	mg/m^3	NA	(µg/m^3)$^{-1}$	3.6E-03	NA
	Dichlorodifluoromethane	3.10E+00	µg/m^3	Max	3.10E+00	µg/m^3	Modeled Max	7.1E-04	mg/m^3	2.5E-01	µg/m^3	1.0E-01	mg/m^3	NA	(µg/m^3)$^{-1}$	7.1E-03	NA
	Toluene	3.50E+00	µg/m^3	Max	3.50E+00	µg/m^3	Modeled Max	8.0E-04	mg/m^3	2.9E-01	µg/m^3	3.0E-01	mg/m^3	NA	(µg/m^3)$^{-1}$	2.7E-03	NA
	(Total)															**1.3E-02**	**0E+00**

Abbreviations:
µg = Micrograms
EPC = Exposure point concentration
m^3 = Cubic meters
mg = Milligrams
NA = Not applicable

Table L-30
Calculation of Commercial Worker - Indoor Air Exposures, Non-cancer Hazards/Cancer Risks - Block 2
Infineon Facility
El Segundo, California

Scenario Timeframe:	Future
Medium:	Indoor Air
Receptor Population:	Commercial worker

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Medium EPC Selected	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Intake (Cancer)	Intake (Cancer) Units	Reference Dose/ Concentration	Reference Dose Units	Cancer Slope Factor/ Unit Risk	Cancer Slope Factor/ Unit Risk Units	Hazard Quotient	Cancer Risk
Inhalation																	
Indoor air	Benzene	1.70E+00	µg/m^3	Max	1.70E+00	µg/m^3	Modeled Max	3.9E-04	mg/m^3	1E-01	µg/m^3	3.0E-03	mg/m^3	2.90E-05	(µg/m^3)$^{-1}$	1.3E-01	4E-6 (regional BG*)
	Acetone	2.90E+01	µg/m^3	Max	2.90E+01	µg/m^3	Modeled Max	6.6E-03	mg/m^3	2.4E+00	µg/m^3	3.1E+01	mg/m^3	NA	(µg/m^3)$^{-1}$	2.1E-04	NA
	1,1-Difluoroethane	9.80E+00	µg/m^3	Max	9.80E+00	µg/m^3	Modeled Max	2.2E-03	mg/m^3	8.0E-01	µg/m^3	4.0E+01	mg/m^3	NA	(µg/m^3)$^{-1}$	5.6E-05	NA
	Chloromethane	2.10E+00	µg/m^3	Max	2.10E+00	µg/m^3	Modeled Max	4.8E-04	mg/m^3	1.7E-01	µg/m^3	9.0E-02	mg/m^3	NA	(µg/m^3)$^{-1}$	5.3E-03	NA
	Dichlorodifluoromethane	3.50E+00	µg/m^3	Max	3.50E+00	µg/m^3	Modeled Max	8.0E-04	mg/m^3	2.9E-01	µg/m^3	1.0E-01	mg/m^3	NA	(µg/m^3)$^{-1}$	8.0E-03	NA
	Isopropanol	4.50E+02	µg/m^3	Max	4.50E+02	µg/m^3	Modeled Max	1.0E-01	mg/m^3	3.7E+01	µg/m^3	2.0E-01	mg/m^3	NA	(µg/m^3)$^{-1}$	5.1E-01	NA
	Toluene	4.00E+00	µg/m^3	Max	4.00E+00	µg/m^3	Modeled Max	9.1E-04	mg/m^3	3.3E-01	µg/m^3	3.0E-01	mg/m^3	NA	(µg/m^3)$^{-1}$	3.0E-03	NA
	(Total)															**6.6E-01**	**4E-6 (regional BG*)**

Notes:

* *Maximum indoor air concentration same as regional background. Max 0 to 5 foot soil vapor less than most conservative vapor screening value using attenuation of 0.03. No direct evidence of VI based on main COPCs PCE and TCE not detected in air.*

Abbreviations:

µg = Micrograms
COPC = Constituents of potential concern
EPC = Exposure point concentration
m^3 = Cubic meters
mg = Milligrams
NA = Not applicable
PCE = Tetrachloroethene
TCE = Trichloroethene

Table L-31
Non-Cancer Toxicity Data – Oral/Dermal
Infineon Facility
El Segundo, California

Chemical of Potential Concern	Oral Reference Dose	Oral RfD Units	Source	Oral to Dermal Adjustment Factor	Dermal Reference Dose*	Dermal RfD Units
1,1,1-Trichloroethane	2.00E+00	mg/kg-day	DTSC Note 10, 2019	100%	2.00E+00	mg/kg-day
Trichlorotrifluoroethane (Freon-113)	3.00E+01	mg/kg-day	DTSC Note 10, 2019	100%	3.00E+01	mg/kg-day
1,1-Dichloroethane	2.00E-01	mg/kg-day	DTSC Note 10, 2019	100%	2.00E-01	mg/kg-day
1,1-Dichloroethene	5.00E-02	mg/kg-day	DTSC Note 10, 2019	100%	5.00E-02	mg/kg-day
1,2,4-Trimethylbenzene	1.00E-02	mg/kg-day	DTSC Note 10, 2019	100%	1.00E-02	mg/kg-day
1,2-Dichlorobenzene	9.00E-02	mg/kg-day	DTSC Note 10, 2019	100%	9.00E-02	mg/kg-day
1,3,5-Trimethylbenzene	1.00E-02	mg/kg-day	DTSC Note 10, 2019	100%	1.00E-02	mg/kg-day
1,4-Dioxane	3.00E-02	mg/kg-day	DTSC Note 10, 2019	100%	3.00E-02	mg/kg-day
Acetone	9.00E-01	mg/kg-day	DTSC Note 10, 2019	100%	9.00E-01	mg/kg-day
Benzene	4.00E-03	mg/kg-day	DTSC Note 10, 2019	100%	4.00E-03	mg/kg-day
Chloroform (Trichloromethane)	1.00E-02	mg/kg-day	DTSC Note 10, 2019	100%	1.00E-02	mg/kg-day
cis-1,2-Dichloroethene	2.00E-03	mg/kg-day	DTSC Note 10, 2019	100%	2.00E-03	mg/kg-day
Ethylbenzene	1.00E-01	mg/kg-day	DTSC Note 10, 2019	100%	1.00E-01	mg/kg-day
Freon 11	3.00E-01	mg/kg-day	DTSC Note 10, 2019	100%	3.00E-01	mg/kg-day
m,p-Xylenes	2.00E-01	mg/kg-day	DTSC Note 10, 2019	100%	2.00E-01	mg/kg-day
o-Xylene	2.00E-01	mg/kg-day	DTSC Note 10, 2019	100%	2.00E-01	mg/kg-day
Tetrachloroethene	6.00E-03	mg/kg-day	DTSC Note 10, 2019	100%	6.00E-03	mg/kg-day
Tetrahydrofuran	9.00E-01	mg/kg-day	DTSC Note 10, 2019	100%	9.00E-01	mg/kg-day
Toluene	8.00E-02	mg/kg-day	DTSC Note 10, 2019	100%	8.00E-02	mg/kg-day
Trichloroethene	5.00E-04	mg/kg-day	DTSC Note 10, 2019	100%	5.00E-04	mg/kg-day
Ethylbenzene	1.00E-01	mg/kg-day	DTSC Note 10, 2019	100%	1.00E-01	mg/kg-day
Chloromethane	3.15E-01	mg/kg-day	DTSC Note 10, 2019-Inhal Surrog.	100%	3.15E-01	mg/kg-day
1,1-Difluoroethane	1.40E+02	mg/kg-day	DTSC Note 10, 2019-Inhal Surrog.	100%	1.40E+02	mg/kg-day
Isopropanol	2.00E+00	mg/kg-day	DTSC Note 10, 2019- 2-propanol	100%	2.00E+00	mg/kg-day
Dichlorodifluoromethane	2.00E-01	mg/kg-day	DTSC Note 10, 2019	100%	2.00E-01	mg/kg-day
Trichlorofluoromethane	3.00E-01	mg/kg-day	DTSC Note 10, 2019	100%	3.00E-01	mg/kg-day
TPH						
C11-C12	4.00E-03	mg/kg-day	DTSC Note 10, 2019 - Aromatic	100%	4.00E-03	mg/kg-day
C25-C28	4.00E-02	mg/kg-day	DTSC Note 10, 2019 - Aromatic	100%	4.00E-02	mg/kg-day
C29-C32	4.00E-02	mg/kg-day	DTSC Note 10, 2019 - Aromatic	100%	4.00E-02	mg/kg-day
C33-C36	NA			100%	NA	
C37-C40	NA			100%	NA	
C41-C44	NA			100%	NA	
C6	4.00E-03	mg/kg-day	DTSC Note 10, 2019 - Aromatic	100%	4.00E-03	mg/kg-day
C6-C44-TOTAL	NA			100%	NA	
C7	4.00E-03	mg/kg-day	DTSC Note 10, 2019 - Aromatic	100%	4.00E-03	mg/kg-day
C8	4.00E-03	mg/kg-day	DTSC Note 10, 2019 - Aromatic	100%	4.00E-03	mg/kg-day
C9-C10	4.00E-03	mg/kg-day	DTSC Note 10, 2019 - Aromatic	100%	4.00E-03	mg/kg-day
EFH(C13-C14)	4.00E-03	mg/kg-day	DTSC Note 10, 2019 - Aromatic	100%	4.00E-03	mg/kg-day
EFH(C15-C16)	4.00E-03	mg/kg-day	DTSC Note 10, 2019 - Aromatic	100%	4.00E-03	mg/kg-day
EFH(C17-C18)	4.00E-02	mg/kg-day	DTSC Note 10, 2019 - Aromatic	100%	4.00E-02	mg/kg-day
EFH(C19-C20)	4.00E-02	mg/kg-day	DTSC Note 10, 2019 - Aromatic	100%	4.00E-02	mg/kg-day
EFH(C21-C22)	4.00E-02	mg/kg-day	DTSC Note 10, 2019 - Aromatic	100%	4.00E-02	mg/kg-day
EFH(C23-C24)	4.00E-02	mg/kg-day	DTSC Note 10, 2019 - Aromatic	100%	4.00E-02	mg/kg-day
Metals						
Barium	2.00E-01	mg/kg-day	DTSC Note 10, 2019	7%	1.40E-02	mg/kg-day
Beryllium	2.00E-04	mg/kg-day	DTSC Note 10, 2019	100%	2.00E-04	mg/kg-day
Cadmium	1.00E-03	mg/kg-day	DTSC Note 10, 2019	3%	2.50E-05	mg/kg-day
Chromium	1.50E+00	mg/kg-day	DTSC Note 10, 2019	1%	1.95E-02	mg/kg-day
Cobalt	3.00E-04	mg/kg-day	DTSC Note 10, 2019	100%	3.00E-04	mg/kg-day
Copper	4.00E-02	mg/kg-day	DTSC Note 10, 2019	100%	4.00E-02	mg/kg-day
Mercury	1.60E-04	mg/kg-day	DTSC Note 10, 2019	7%	1.12E-05	mg/kg-day
Molybdenum	5.00E-03	mg/kg-day	DTSC Note 10, 2019	100%	5.00E-03	mg/kg-day
Nickel	1.10E-02	mg/kg-day	DTSC Note 10, 2019	4%	4.40E-04	mg/kg-day
Selenium	5.00E-03	mg/kg-day	DTSC Note 10, 2019	100%	5.00E-03	mg/kg-day
Silver	5.00E-03	mg/kg-day	DTSC Note 10, 2019	4%	2.00E-04	mg/kg-day
Thallium	1.00E-05	mg/kg-day	DTSC Note 10, 2019	100%	1.00E-05	mg/kg-day
Vanadium	5.04E-03	mg/kg-day	DTSC Note 10, 2019	3%	1.31E-04	mg/kg-day
Zinc	3.00E-01	mg/kg-day	DTSC Note 10, 2019	100%	3.00E-01	mg/kg-day

Notes
** Oral reference dose x oral to dermal adjustment factor*
DTSC Note 10, 2019 - California Department of Toxic Substances Control Note 10

Abbreviations
DTSC = Department of Toxic Substance Control
kg = Kilograms
mg = Milligrams
RfD = Reference dose
TPH = Total petroleum hydrocarbons

Table L-32
Non-Cancer Toxicity Data – Inhalation
Infineon Facility
El Segundo, California

Chemical of Potential Concern	Inhalation Reference Dose	Units	Source
1,1,1-Trichloroethane	1.00E+00	mg/m³	DTSC Note 10, 2019
Trichlorotrifluoroethane (Freon-113)	5.00E+00	mg/m³	DTSC Note 10, 2019
1,1-Dichloroethane	8.00E-01	mg/m³	DTSC Note 10, 2019
1,1-Dichloroethene	7.00E-02	mg/m³	DTSC Note 10, 2019
1,2,4-Trimethylbenzene	6.00E-02	mg/m³	DTSC Note 10, 2019
1,2-Dichlorobenzene	2.00E-01	mg/m³	DTSC Note 10, 2019
1,3,5-Trimethylbenzene	6.00E-02	mg/m³	DTSC Note 10, 2019
1,4-Dioxane	3.00E-02	mg/m³	DTSC Note 10, 2019
Acetone	3.09E+01	mg/m³	DTSC Note 10, 2019
Benzene	3.00E-03	mg/m³	DTSC Note 10, 2019
Chloroform (Trichloromethane)	9.80E-02	mg/m³	DTSC Note 10, 2019
cis-1,2-Dichloroethene	8.00E-03	mg/m³	DTSC Note 10, 2019
Ethylbenzene	1.00E+00	mg/m³	DTSC Note 10, 2019
Freon 11	1.20E+00	mg/m³	DTSC Note 10, 2019
m,p-Xylenes	1.00E-01	mg/m³	DTSC Note 10, 2019
o-Xylene	1.00E-01	mg/m³	DTSC Note 10, 2019
Tetrachloroethene	4.00E-02	mg/m³	DTSC Note 10, 2019
Tetrahydrofuran	2.00E+00	mg/m³	DTSC Note 10, 2019
Toluene	3.00E-01	mg/m³	DTSC Note 10, 2019
Trichloroethene	2.00E-03	mg/m³	DTSC Note 10, 2019
Ethylbenzene	1.00E+00	mg/m³	DTSC Note 10, 2019
Chloromethane	9.00E-02	mg/m³	DTSC Note 10, 2019
1,1-Difluoroethane	4.00E+01	mg/m³	DTSC Note 10, 2019
Isopropanol	2.00E-01	mg/m³	DTSC Note 10, 2019- 2-propanol
Dichlorodifluoromethane	1.00E-01	mg/m³	DTSC Note 10, 2019
Trichlorofluoromethane	1.20E+00	mg/m³	DTSC Note 10, 2019
TPH			
C11-C12	0.003	mg/m³	DTSC Note 10, 2019 (Aromatic)
C25-C28	NA	mg/m³	DTSC Note 10, 2019 (Aromatic)
C29-C32	NA	mg/m³	DTSC Note 10, 2019 (Aromatic)
C33-C36	NA	mg/m³	DTSC Note 10, 2019 (Aromatic)
C37-C40	NA	mg/m³	DTSC Note 10, 2019 (Aromatic)
C41-C44	NA	mg/m³	DTSC Note 10, 2019 (Aromatic)
C6	0.030	mg/m³	DTSC Note 10, 2019 (Aromatic)
C7	0.030	mg/m³	DTSC Note 10, 2019 (Aromatic)
C8	0.030	mg/m³	DTSC Note 10, 2019 (Aromatic)
C9-C10	0.003	mg/m³	DTSC Note 10, 2019 (Aromatic)

Table L-32
Non-Cancer Toxicity Data – Inhalation
Infineon Facility
El Segundo, California

Chemical of Potential Concern	Inhalation Reference Dose	Units	Source
EFH(C13-C14)	0.003	mg/m³	DTSC Note 10, 2019 (Aromatic)
EFH(C15-C16)	0.003	mg/m³	DTSC Note 10, 2019 (Aromatic)
EFH(C17-C18)	NA	mg/m³	DTSC Note 10, 2019 (Aromatic)
EFH(C19-C20)	NA	mg/m³	DTSC Note 10, 2019 (Aromatic)
EFH(C21-C22)	NA	mg/m³	DTSC Note 10, 2019 (Aromatic)
EFH(C23-C24)	NA	mg/m³	DTSC Note 10, 2019 (Aromatic)
Metals			
Barium	5.00E-04	mg/m³	DTSC Note 10, 2019
Beryllium	7.00E-06	mg/m³	DTSC Note 10, 2019
Cadmium	1.00E-05	mg/m³	DTSC Note 10, 2019
Chromium	NA	mg/m³	
Copper	NA		
Mercury	3.00E-05	mg/m³	DTSC Note 10, 2019
Molybdenum	NA	mg/m³	
Nickel	1.40E-05	mg/m³	DTSC Note 10, 2019
Selenium	2.00E-02	mg/m³	DTSC Note 10, 2019
Silver	NA		
Thallium	NA		
Vanadium	1.00E-04	mg/m³	DTSC Note 10, 2019
Zinc	NA		

Notes:
DTSC Note 10, 2019 - California Department of Toxic Substances Control Note 10

Abbreviations:
DTSC = Department of Toxic Substances Control
mg = Milligrams
m^3 = Cubic meter
NA = Not applicable
TPH = Total petroleum hydrocarbons

Table L-33
Cancer Toxicity Data – Oral/Dermal
Infineon Facility
El Segundo, California

Chemical of Potential Concern	Oral Cancer Slope Factor	Oral to Dermal Adjustment Factor	Adjusted Dermal	Units	Source
1,1,1-Trichloroethane	NA	100%	NA	kg-day/mg	DTSC Note 10, 2019
Trichlorotrifluoroethane (Freon-113)	NA	100%	NA	kg-day/mg	DTSC Note 10, 2019
1,1-Dichloroethane	5.70E-03	100%	5.70E-03	kg-day/mg	DTSC Note 10, 2019
1,1-Dichloroethene	NA	100%	NA	kg-day/mg	
1,2,4-Trimethylbenzene	NA	100%	NA	kg-day/mg	
1,2-Dichlorobenzene	NA	100%	NA	kg-day/mg	DTSC Note 10, 2019
1,3,5-Trimethylbenzene	NA	100%	NA	kg-day/mg	
1,4-Dioxane	1.00E-01	100%	1.00E-01	kg-day/mg	DTSC Note 10, 2019
Acetone	NA	100%	NA	kg-day/mg	DTSC Note 10, 2019
Benzene	1.00E-01	100%	1.00E-01	kg-day/mg	DTSC Note 10, 2019
Chloroform	3.10E-02	100%	3.10E-02	kg-day/mg	DTSC Note 10, 2019
cis-1,2-Dichloroethene	NA	100%	NA	kg-day/mg	DTSC Note 10, 2019
Ethylbenzene	1.10E-02	100%	1.10E-02	kg-day/mg	DTSC Note 10, 2019
Freon 11	NA	100%	NA	kg-day/mg	
Freon 113	NA	100%	NA	kg-day/mg	
m,p-Xylenes	NA	100%	NA	kg-day/mg	
o-Xylene	NA	100%	NA	kg-day/mg	
Tetrachloroethene	5.40E-01	100%	5.40E-01	kg-day/mg	DTSC Note 10, 2019
Tetrahydrofuran	NA	100%	NA	kg-day/mg	
Toluene	NA	100%	NA	kg-day/mg	
Trichloroethene	4.60E-02	100%	4.60E-02	kg-day/mg	DTSC Note 10, 2019
Ethylbenzene	1.10E-02	100%	1.10E-02	kg-day/mg	DTSC Note 10, 2019
Chloromethane	NA	100%	NA	kg-day/mg	
1,1-Difluoroethane	NA	100%	NA	kg-day/mg	DTSC Note 10, 2019
Isopropanol	NA	100%	NA	kg-day/mg	
Dichlorodifluoromethane	NA	100%	NA	kg-day/mg	
Trichlorofluoromethane	NA	100%	NA	kg-day/mg	
TPH					
C11-C12	NA	100%	NA	kg-day/mg	
C25-C28	NA	100%	NA	kg-day/mg	
C29-C32	NA	100%	NA	kg-day/mg	
C33-C36	NA	100%	NA	kg-day/mg	
C37-C40	NA	100%	NA	kg-day/mg	
C41-C44	NA	100%	NA	kg-day/mg	
C6	NA	100%	NA	kg-day/mg	
C7	NA	100%	NA	kg-day/mg	
C8	NA	100%	NA	kg-day/mg	DTSC Note 10, 2019
C9-C10	NA	100%	NA	kg-day/mg	
EFH(C13-C14)	NA	100%	NA	kg-day/mg	
EFH(C15-C16)	NA	100%	NA	kg-day/mg	
EFH(C17-C18)	NA	100%	NA	kg-day/mg	
EFH(C19-C20)	NA	100%	NA	kg-day/mg	
EFH(C21-C22)	NA	100%	NA	kg-day/mg	
EFH(C23-C24)	NA	100%	NA	kg-day/mg	
Metals					
Barium	NA	7%	NA	kg-day/mg	
Beryllium	NA	100%	NA	kg-day/mg	
Cadmium	NA	3%	NA	kg-day/mg	
Chromium	NA	1%	NA	kg-day/mg	
Copper	NA	100%	NA	kg-day/mg	
Mercury	NA	7%	NA	kg-day/mg	
Molybdenum	NA	100%	NA	kg-day/mg	
Nickel	NA	4%	NA	kg-day/mg	
Selenium	NA	100%	NA	kg-day/mg	
Silver	NA	4%	NA	kg-day/mg	
Thallium	NA	100%	NA	kg-day/mg	
Vanadium	NA	3%	NA	kg-day/mg	
Zinc	NA	100%	NA	kg-day/mg	

Notes:
DTSC Note 10, 2019 - California Department of Toxic Substances Control Note 10

Abbreviations:
DTSC = Department of Toxic Substances Control
mg = Milligrams
kg = Kilograms
NA = Not applicable
TPH = Total petroleum hydrocarbons

Table L-34
Cancer Toxicity Data – Inhalation
Infineon Facility
El Segundo, California

Chemical of Potential Concern	Unit Risk	Units	Adjustment	Inhalation Cancer Slope Factor	Units	Source
1,1,1-Trichloroethane	NA	$(\mu g/m^3)^{-1}$	1	NA	$(\mu g/m^3)^{-1}$	
Trichlorotrifluoroethane (Freon-113)	NA	$(\mu g/m^3)^{-1}$	1	NA	$(\mu g/m^3)^{-1}$	
1,1-Dichloroethane	1.60E-06	$(\mu g/m^3)^{-1}$	1	1.60E-06	$(\mu g/m^3)^{-1}$	DTSC Note 10, 2019
1,1-Dichloroethene	NA	$(\mu g/m^3)^{-1}$	1	NA	$(\mu g/m^3)^{-1}$	
1,2,4-Trimethylbenzene	NA	$(\mu g/m^3)^{-1}$	1	NA	$(\mu g/m^3)^{-1}$	
1,2-Dichlorobenzene	NA	$(\mu g/m^3)^{-1}$	1	NA	$(\mu g/m^3)^{-1}$	
1,3,5-Trimethylbenzene	NA	$(\mu g/m^3)^{-1}$	1	NA	$(\mu g/m^3)^{-1}$	
1,4-Dioxane	5.00E-06	$(\mu g/m^3)^{-1}$	1	5.00E-06	$(\mu g/m^3)^{-1}$	DTSC Note 10, 2019
Acetone	NA	$(\mu g/m^3)^{-1}$	1	NA	$(\mu g/m^3)^{-1}$	
Benzene	2.90E-05	$(\mu g/m^3)^{-1}$	1	2.90E-05	$(\mu g/m^3)^{-1}$	DTSC Note 10, 2019
Chloroform (Trichloromethane)	2.30E-05	$(\mu g/m^3)^{-1}$	1	2.30E-05	$(\mu g/m^3)^{-1}$	DTSC Note 10, 2019
cis-1,2-Dichloroethene	NA	$(\mu g/m^3)^{-1}$	1	NA	$(\mu g/m^3)^{-1}$	
Ethylbenzene	2.50E-06	$(\mu g/m^3)^{-1}$	1	2.50E-06	$(\mu g/m^3)^{-1}$	DTSC Note 10, 2019
Freon 11	NA	$(\mu g/m^3)^{-1}$	1	NA	$(\mu g/m^3)^{-1}$	
Freon 113	NA	$(\mu g/m^3)^{-1}$	1	NA	$(\mu g/m^3)^{-1}$	
m,p-Xylenes	NA	$(\mu g/m^3)^{-1}$	1	NA	$(\mu g/m^3)^{-1}$	
o-Xylene	NA	$(\mu g/m^3)^{-1}$	1	NA	$(\mu g/m^3)^{-1}$	
Tetrachloroethene	6.10E-06	$(\mu g/m^3)^{-1}$	1	6.10E-06	$(\mu g/m^3)^{-1}$	DTSC Note 10, 2019
Tetrahydrofuran	NA	$(\mu g/m^3)^{-1}$	1	NA	$(\mu g/m^3)^{-1}$	
Toluene	NA	$(\mu g/m^3)^{-1}$	1	NA	$(\mu g/m^3)^{-1}$	
Trichloroethene	4.10E-06	$(\mu g/m^3)^{-1}$	1	4.10E-06	$(\mu g/m^3)^{-1}$	DTSC Note 10, 2019
Ethylbenzene	2.50E-06	$(\mu g/m^3)^{-1}$	1	2.50E-06	$(\mu g/m^3)^{-1}$	DTSC Note 10, 2019
Chloromethane	NA	$(\mu g/m^3)^{-1}$	1	NA	$(\mu g/m^3)^{-1}$	
1,1-Difluoroethane	NA	$(\mu g/m^3)^{-1}$	1	NA	$(\mu g/m^3)^{-1}$	
Isopropanol	NA	$(\mu g/m^3)^{-1}$	1	NA	$(\mu g/m^3)^{-1}$	
Isopropanol	NA	$(\mu g/m^3)^{-1}$	1	NA	$(\mu g/m^3)^{-1}$	
Dichlorodifluoromethane	NA	$(\mu g/m^3)^{-1}$	1	NA	$(\mu g/m^3)^{-1}$	
Trichlorofluoromethane	NA	$(\mu g/m^3)^{-1}$	1	NA	$(\mu g/m^3)^{-1}$	
TPH		$(\mu g/m^3)^{-1}$	1	NA	$(\mu g/m^3)^{-1}$	
C11-C12	NA	$(\mu g/m^3)^{-1}$	1	NA	$(\mu g/m^3)^{-1}$	
C25-C28	NA	$(\mu g/m^3)^{-1}$	1	NA	$(\mu g/m^3)^{-1}$	
C29-C32	NA	$(\mu g/m^3)^{-1}$	1	NA	$(\mu g/m^3)^{-1}$	
C33-C36	NA	$(\mu g/m^3)^{-1}$	1	NA	$(\mu g/m^3)^{-1}$	
C37-C40	NA	$(\mu g/m^3)^{-1}$	1	NA	$(\mu g/m^3)^{-1}$	
C41-C44	NA	$(\mu g/m^3)^{-1}$	1	NA	$(\mu g/m^3)^{-1}$	
C6	NA	$(\mu g/m^3)^{-1}$	1	NA	$(\mu g/m^3)^{-1}$	
C7	NA	$(\mu g/m^3)^{-1}$	1	NA	$(\mu g/m^3)^{-1}$	
C8	NA	$(\mu g/m^3)^{-1}$	1	NA	$(\mu g/m^3)^{-1}$	
C9-C10	NA	$(\mu g/m^3)^{-1}$	1	NA	$(\mu g/m^3)^{-1}$	
EFH(C13-C14)	NA	$(\mu g/m^3)^{-1}$	1	NA	$(\mu g/m^3)^{-1}$	
EFH(C15-C16)	NA	$(\mu g/m^3)^{-1}$	1	NA	$(\mu g/m^3)^{-1}$	
EFH(C17-C18)	NA	$(\mu g/m^3)^{-1}$	1	NA	$(\mu g/m^3)^{-1}$	
EFH(C19-C20)	NA	$(\mu g/m^3)^{-1}$	1	NA	$(\mu g/m^3)^{-1}$	
EFH(C21-C22)	NA	$(\mu g/m^3)^{-1}$	1	NA	$(\mu g/m^3)^{-1}$	
EFH(C23-C24)	NA	$(\mu g/m^3)^{-1}$	1	NA	$(\mu g/m^3)^{-1}$	

Table L-34
Cancer Toxicity Data – Inhalation
Infineon Facility
El Segundo, California

Chemical of Potential Concern	Unit Risk	Units	Adjustment	Inhalation Cancer Slope Factor	Units	Source
Metals						
Barium	NA	$(\mu g/m^3)^{-1}$	1	NA	$(\mu g/m^3)^{-1}$	
Beryllium	2.40E-03	$(\mu g/m^3)^{-1}$	1	2.40E-03	$(\mu g/m^3)^{-1}$	DTSC Note 10, 2019
Cadmium	4.20E-03	$(\mu g/m^3)^{-1}$	1	4.20E-03	$(\mu g/m^3)^{-1}$	DTSC Note 10, 2019
Chromium	NA	$(\mu g/m^3)^{-1}$	1	NA	$(\mu g/m^3)^{-1}$	
Chromium, VI	1.50E-01	$(\mu g/m^3)^{-1}$	1	1.50E-01	$(\mu g/m^3)^{-1}$	DTSC Note 10, 2019
Copper	NA	$(\mu g/m^3)^{-1}$	1	NA	$(\mu g/m^3)^{-1}$	
Mercury	NA	$(\mu g/m^3)^{-1}$	1	NA	$(\mu g/m^3)^{-1}$	DTSC Note 10, 2019
Molybdenum	NA	$(\mu g/m^3)^{-1}$	1	NA	$(\mu g/m^3)^{-1}$	
Nickel	2.60E-04	$(\mu g/m^3)^{-1}$	1	2.60E-04	$(\mu g/m^3)^{-1}$	DTSC Note 10, 2019
Selenium	NA	$(\mu g/m^3)^{-1}$	1	NA	$(\mu g/m^3)^{-1}$	
Silver	NA	$(\mu g/m^3)^{-1}$	1	NA	$(\mu g/m^3)^{-1}$	
Thallium	NA	$(\mu g/m^3)^{-1}$	1	NA	$(\mu g/m^3)^{-1}$	
Vanadium	NA	$(\mu g/m^3)^{-1}$	1	NA	$(\mu g/m^3)^{-1}$	
Zinc	NA	$(\mu g/m^3)^{-1}$	1	NA	$(\mu g/m^3)^{-1}$	

Abbreviations:
µg = Micrograms
DTSC = Department of Toxic Substances Control
m^3 = Cubic meter
NA = Not applicable
TPH = Total petroleum hydrocarbons

Table L-35
Summary of Estimated Hazards Indices and Risks
Infineon Facility
El Segundo, California

	Block 1			Block 2			
Exposure Scenario/Location	**HI**	**ILCR**	**Notes**	**Location**	**HI**	**ILCR**	**Notes**
Soil							
Future Commercial Worker, Block 1	0.06	2 E-8		Future Commercial Worker, Block 2	0.03	2 E-7	
Future Construction Worker, Block 1	1, SC=0.6	1 E-9		Future Construction Worker, Block 2	0.66	2 E-8	
Soil Vapor/ Indoor Air							
Soil Vapor (0 to 5 feet bgs)[a]							
Future Commercial Worker, Block 1	20	1 E-3	Use Measured Indoor Air	Future Commercial Worker, Block 2	65	6 E-4	Use Measured Indoor Air
Soil Vapor (>5 feet bgs)[a]							
Future Commercial Worker, Block 1	401	1 E-2	Use Measured Indoor Air	Future Commercial Worker, Block 2	192	2 E-3	Use Measured Indoor Air
Measured Indoor Air							
Future Commercial Worker, Block 1	0.013	0 E+0		Future Commercial Worker, Block 2	0.66	4E-6 (regional BG)	Benzene - Same as regional BG; SV<SL[c]
Cumulative Risk[b]							
Future Commercial Worker, Block 1-Soil and Theoretical Soil Vapor Migration	20	1 E-3	Use Measured Indoor Air	Future Commercial Worker, Block 2-Soil and Theoretical Soil Vapor Migration	65	6 E-4	Use Measured Indoor Air
Future Commercial Worker, Block 1-Soil and Measured Indoor Air	0.07	2 E-8		Future Commercial Worker, Block 2-Soil and Measured Indoor Air	0.69	2 E-7	Benzene not included- Same as regional BG
Future Construction Worker, Block 1	1, SC=0.6	1 E-9		Future Construction Worker, Block 2	0.66	2 E-8	

Notes:

> = Greater than

[a] Soil vapor intrusion estimates based on default attenuation factor 0.03. Measured indoor air concentrations suggest vapor intrusion pathway may not be complete as the main COPCs (PCE and TCE) are not detected, but requires verification post redevelopment.

[b] Soil vapor risks added to soil direct contact risks for completeness. Indoor air measurements suggest VI pathway may not be complete, indoor air measurements provide a direct indicator of potential impact directly. However, this requires verification post-redevelopment.

[c] Maximum indoor air concentration same as regional background. Max 0 to 5 foot soil vapor less than most conservative vapor screening value using attenuation of 0.03. No direct evidence of VI based on main COPCs PCE and TCE not detected in air; requires verification post redevelopment.

Greater than risk thresholds

Less than risk thresholds

Abbreviations:

bgs = Below ground surface

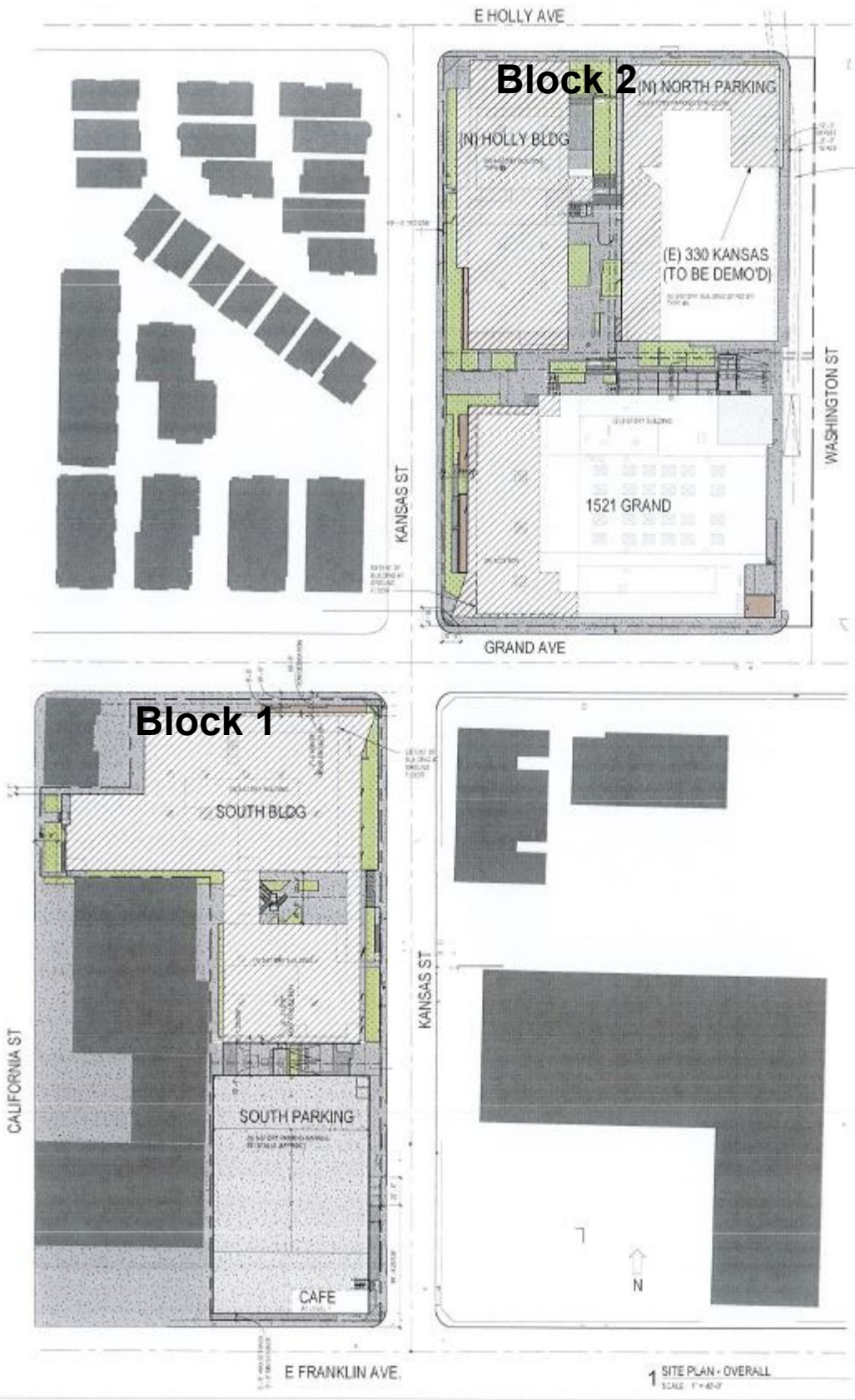
COPC = Chemicals of potential concern

HI = Health index

ILCR = Incremental Lifetime Cancer Risk

PCE = Tetrachloroethene

APPENDIX M CONCEPTUAL REDEVELOPMENT PLANS



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WARE MALCOMB
ARCHITECTURE | PLANNING
INTERIORS | CIVIL ENGINEERING
BRANDING | BUILDING MEASUREMENT

NOT FOR CONSTRUCTION

ISSUE DATES
NO. DATE REVISION

1521 GRAND
1521 E Grand Ave, El Segundo, CA 90245

OVERALL SITE PLAN

JOB NUMBER
DATE

A100

Conceptual Development Plans