

H-3 Underground Storage Tank Removal Memorandum & LAFD Closeout Letter

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October 10, 2019

Mario Palumbo
1770 Ivar LLC
1995 Broadway Street, 3rd Floor
New York, NY 10023

Facility ID#:41009
RE:Permit#:32994

1770 Ivar, LLC
6334 Ycca Street
Los Angeles, California

Dear Mr. Palumbo:

The Los Angeles Fire Department (LAFD) has reviewed the "UST Soil Closeout Report", dated, June 19, 2019 as submitted by Group Delta Consultants. Based on the information provided, this Department has determined that no further action is required at the site for removal of one 150-gallon underground storage tank under permit No. 32994.

Please note, this correspondence does not exempt you of any liability under the California Health and Safety Code or Water Code for past, present or future operations at this site. Additionally, you maintain responsibility to correct additional or previously unidentified conditions at the site, which cause, or may thereafter cause, pollution or nuisance, or otherwise pose a threat to water quality or public health.

If you require additional information regarding this matter, please contact Eloy Luna of the Underground Storage Tanks – Plan Check Unit, at (213) 978-3708.

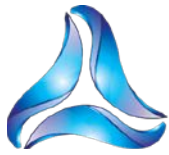
Very truly yours,

RALPH M. TERRAZAS
Fire Chief

Royce Long, CUPA Manager
Environmental Unit

RL: EL: 6334 Yucca Street#32994-sr-nd-nfa

cc: Ms. Alycia A. McCord, Group Delta Consultants
Joseph A. Mariani, Jr., 1770 Ivar LLC



GROUP DELTA

Los Angeles Fire Department
Underground Storage Tank – Enforcement Unit
200 North Main Street, Suite 1700
Los Angeles, California 90012

June 19, 2019
LA1301B

Attention: Mr. Eloy Luna

Subject: **UST Soil Closeout Report**
1770 Ivar LLC
6334 Yucca Street, Los Angeles, California 90028

Dear Mr. Luna,

On behalf of 1770 Ivar LLC., Group Delta Consultants, Inc. (GDC) is pleased to submit one hard copy and one electronic copy via e-mail of the *UST Soil Closeout Report* for the above-referenced site.

If you have any questions pertaining to this report, please do not hesitate to contact me at (310) 740-6971 or by e-mail at alyciam@groupdelta.com.

Sincerely,
Group Delta Consultants

Alycia A. McCord, P.G. 9253
Senior Environmental Geologist

Distribution:
Addressee (1 hard copy and 1 electronic copy provided via e-mail)



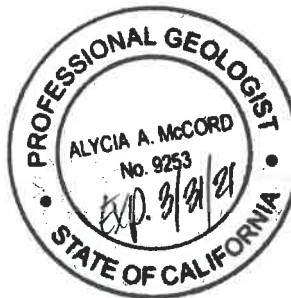
**UST SOIL CLOSEOUT REPORT
1770 IVAR LLC.
6334 YUCCA STREET
LOS ANGELES, CALIFORNIA 90028**

Permit No. SR0032994

**Prepared For:
1770 IVAR LLC.
1995 Broadway, 3rd Floor
New York, NY 10023**

**Prepared By:
GROUP DELTA CONSULTANTS, INC.
370 Amapola Avenue, Suite 212
Torrance, California 90505**

**Alycia A. McCord, P.G. 9253, Exp. 3/31/2021
Senior Environmental Geologist**



**June 17, 2019
GDC Project No. LA1301B**

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Abbreviation

Term

Belshire	Belshire Environmental Services, Inc.
Bgs	Below ground surface
BTEX	Benzene, toluene, ethylbenzene, xylenes
Calscience	Eurofins Calscience Environmental Laboratory
CDWR	California Department of Water Resources
CIH	Certified Industrial Hygienist
Dig Alert	Underground Service Alert of Southern California
DTSC	California EPA, Department of Toxic Substances Control
ELAP	Environmental Laboratories Accreditation Program
EPA	United States Environmental Protection Agency
Excell	Excell Excavating, Inc.
Group Delta	Group Delta Consultants, Inc.
HERO	Human and Ecological Risk Office
LAFD	City of Los Angeles Fire Department
mg/kg	Milligrams per kilogram
µg/kg	Micrograms per kilogram

Abbreviation	Term
ml	milliliter
MSL	Mean sea level
NA	North American
Nieto	Nieto and Sons Trucking, Inc.
PCBs	Polychlorinated biphenyls
PID	Photo-ionization detector
ppm	Parts per million
RCRA	Resource Conservation and Recovery Act
RLs	Reporting limits
SCAQMD	South Coast Air Quality Management District
Site	6334 Yucca Street, Los Angeles, California
SLs	Screening levels
TCLP	Toxicity Characterization Leaching Procedure
TPH	Total Petroleum Hydrocarbon
UST	Underground Storage Tank
VOA	Volatile Organic Analysis
VOC	Volatile Organic Compound

1.0 INTRODUCTION

This report documents field activities and analytical results from abandoning by removal of an unknown underground storage tank (UST) encountered during an investigation at the 1770 Ivar LLC Site (Site) located at 6334 Yucca Street in Los Angeles, California (**Figure 1**). The current owner, 1770 Ivar LLC., has owned the Site since July 2017. In preparation of future development activities, the owner is underway in determining design criteria and completing processes for permitting. The unknown UST was found during an unrelated investigation at the Site in October 2018.

For this report, Section 1.0 discussed the site description, background, geology and hydrogeology. Section 2.0 discusses pre-field and field activities to abandon the UST by removal. Section 3.0 has a discussion of the laboratory results from the soil sampling. A discussion of handling of waste is included as Section 4.0. A summary and recommendations are included as Section 5.0.

1.1 Site Description and Background

The UST was found at the boundary between the Assessor's Parcel ID Numbers (APN) 5546-004-006 and 5546-004-029, which are two parcels on the southeast corner of the intersection of Yucca Street and Ivar Street (**Figure 1**). The 1-acre Site (combining the two parcels) were initially developed as a parking lot in the 1940s serving the area businesses since the properties were developed. A single story building was added to APN 5546-004-029 in 1979.

1.2 Geology

The Site is located within the southern boundary of the Transverse Ranges geomorphic province. This boundary is structurally characterized by reverse, oblique, and strike-slip offsets along a series of west and northwest trending active faults accommodating west rotation of the Transverse Ranges. These faults include the Santa Monica, Hollywood, and Raymond fault system locally (Dolan, 1997). The Santa Monica Mountains have been uplifted north of this fault zone relative to the Los Angeles Basin to the south due to Miocene extensional tectonics and subsequent compressional tectonics. Mesozoic granitic and Tertiary sedimentary rocks are exposed at the surface within the mountains. Cyclic Quaternary sea level rise and fall has resulted in several episodic deeply eroded canyons and subsequent fill, with modern fan deposition at the base of the mountains. Recent Holocene alluvial deposition is concentrated within the canyons and southward extending drainages.

The project site is situated with an alluvial fan margin, near the toe of a fingering, south extending foothill. Here, at the southern base of the Santa Monica Mountains, canyons cut through Tertiary sedimentary rock of the Topanga Formation and open southward forming alluvial fans. Regional mapping indicates Pleistocene alluvial deposits blanket underlie the Site.

1.3 Hydrogeology

Based on an unrelated investigation completed at the Site and in the immediate vicinity, the Site is situated in an alluvial fan margin giving the Site a few feet of Quaternary deposits overlying the Tertiary sedimentary rock of the Topanga Formation (Group Delta Consultants, Inc. [Group Delta], 2015), which overlies the Lakewood Formation as part of the Hollywood Sub-basin. This evaluation is consistent with the California Department of Water Resources [CDWR] Bulletin 104 (CDWR, 1961), and CDWR Bulletin 118 (CDWR, 2004).

During unrelated investigations, monitoring wells were installed at the Site. The wells were installed on the southern half of the Site at a lower elevation of 392 feet mean sea level (MSL). The UST was located upslope from these wells. Groundwater during drilling was encountered at approximately 59 feet below grade surface (bgs) and a static level of 51 feet bgs. This is consistent with the Bellflower Aquiclude in the area with saturated lenses of sandy and/or gravelly clays.

Review of the State Water Resources Control Board's Geotracker website notes open sites within the vicinity of the Site. A remediation site is located at 5700 Hollywood Boulevard. This site has a surface elevation of approximately 398 feet MSL. During the Fourth Quarter 2018 Groundwater Monitoring Event, the monitoring wells were gauged with depth to water ranging from 84 to 87 feet bgs or an elevation of 307 to 309 feet MSL, which is consistent with the depth of the Exposition Aquifer. The horizontal hydraulic gradient is to the west at approximately 0.005 feet/feet.

2.0 UST ABANDONMENT BY REMOVAL

This section discusses the UST removal and soil sampling procedures, and analytical methods.

2.1 Condition of UST

During excavation activities as part of an unrelated investigation on October 25, 2018, an unknown UST was encountered. Bedding sand was encountered at 2 feet bgs in the upper parking lot. The UST was buried in silty to clayey sand, likely derived locally, and resting on native well bedded alluvial sand deposits. The UST was comprised of steel and had two connection points. One opening was open to atmosphere and the other opening had a portion of pipe connected to the UST, however, this 18-inch pipe was upright and not connected to anything. The UST measured 4 feet long by 2.5 feet wide, approximately 150 gallons (**Figure 2**).

The initial inspection of the newly exposed UST reported the UST appeared to be in stable shape and had the beginning of a corrosion exfoliation rine. From the limited inspection, the UST did not have any obvious holes or weak spots from corrosion. The UST was of single wall design, welded, and contained no rivets. The west end of the UST was partially deformed and may have sustained minor damage when the UST was encountered. During this inspection, a photo-ionization detector (PID) was utilized to determine if the surrounding soils were impacted by volatile organic compounds (VOCs). No readings above background levels were reported. There were no stained soils or detectable odor in the soils. Based on the results of the sampling, the contents appeared to be water and waste oil impacted with lead. On April 2, 2019, the UST was removed under the oversight of a City of Los Angeles Fire Department (LAFD) Inspector.

2.2 Pre-Field Activities

Prior to abandoning the UST by removal, the *Application for Division 5 Permit – Atmospheric Underground Tank* was completed and submitted to the LAFD on November 13, 2018. LAFD responded with a request for the required fees on November 29, 2018. The fees were delivered to LAFD on December 5, 2018. The acknowledgement of the fees allowing the application to go to Plan Check was received on February 4, 2019 with a request to resubmit the application with a current temporary California Environmental Protection Agency (EPA) identification number. On March 4, 2019, LAFD Inspector Stevens contacted Group Delta to request additional information to be submitted, which included the State of California License for the excavation contractor and a scope of work for removing the UST. The Division 5 Permit was issued on March 6, 2019 (**Appendix A**). LAFD Inspector Bystrom was assigned to this case.

Additional pre-field activities included:

- Work with site owner in coordinating access with current tenants on access to UST area and preferred waste staging location on site.
- Scheduled LAFD Inspector Bystrom to be on site for the UST removal on April 2, 2019.

- Notifying Underground Service Alert of Southern California (Dig Alert) prior to excavation activities
- Submitting notification to the South Coast Air Quality Management District (SCAQMD) to utilizing the excavation contractor's Rule 1166 Various Locations Compliance Plan No. 581787.

2.3 UST Removal Activities

Excell Excavating, Inc. (Excell) of Laguna Niguel, California was contracted to excavate around the UST, and after the UST was removed, over excavate as needed. Nieto and Sons Trucking, Inc. (Nieto) on 1281 Brea Canyon Road, Brea, California was contracted to open up and clean out the UST, then remove the UST from the site and dispose of the UST. Certified Industrial Hygienist (CIH) Nancy G. Carraway of Pasadena, California was contracted to certify the UST as clean before removal of the UST commenced. Belshire Environmental Services, Inc. (Belshire) of Foothill Ranch, California was contracted to provide waste containers and transport waste for off-site disposal to approved facilities.

On April 2, 2019 under the supervision of LAFD Inspector Yoshihoshi, who replaced LAFD Inspector Bystrom, the UST was removed. Excell exposed the UST down to the spring line on all sides. The atmosphere of the UST was tested by the CIH to verify that cold cutting could commence. The UST was deemed suitable for cold work, which Nieto cold cut the top of the UST off to allow access to clean out the UST. Nieto attempted to pump the waste oil and water, then proceeded to shovel out a thick waste oil sludge, which filled approximately a third of the UST.

Once the UST was cleaned, the CIH certified the UST as closed and ready for removal (**Appendix B**). Excell and Nieto removed the UST from the excavation and loaded the UST onto a staged truck for shipment for disposal. Once the UST contents and rinsate were secured into three North American (NA)-approved 55-gallon steel drums, Nieto transported the UST off-site for disposal. The UST was destroyed at Ecology Auto Wrecking of Santa Fe Springs on April 4, 2019 (**Appendix C**).

2.3 Condition of the Excavation

The UST excavation is located on the slope between two parcel boundaries. The excavation showed some staining on the southwest side of the pit bottom, which coincided with the location of a pinhole leak in the UST. The four sides of the excavation had no apparent staining or odor. The pit bottom was excavated an additional two feet to permit soil sampling. The pit extent was 58 inches by 55 inches. The depth on the north wall was 84 inches and 40 inches on the south wall side with a total of 3.5 cubic yards of soil removed. The soil was contained in thirteen 55-gallon NA-approved steel drums and staged pending proper profiling and manifesting procedures for off-site disposal. LAFD Inspector Yoshihoshi requested one pit bottom sample and side wall samples from both the north and south sides of the excavation (**Figure 2**).

Since the soil was impacted with waste oil, the PID readings were not reliable to equate to concentrations in soil. There was a chance that additional excavation work would be required. As discussed in Section 3.0, the initial soil sample results for the south wall and pit bottom were above the analytical requirements listed for total petroleum hydrocarbons (TPH) in the *UST Soil Report Requirements* provided by LAFD Inspector Yoshihoshi (**Appendix D**).

On April 29, 2019, additional excavation work was completed. To ensure the results for the new pit bottom and south side wall samples were below the total petroleum limit of 100 milligrams per kilogram (mg/kg), an additional 3.5 cubic yard of soil was removed from the excavation and stored on site in a 20-yard closed top bin pending proper profiling and manifesting procedures for off-site disposal. A bin was utilized with the assumption that the excavation could go up to 15 feet deep. An unrelated investigation during October and November 2018, which exposed the unknown UST while exposing the subsurface conditions to a depth of 15 feet bgs immediately west of the UST. There were no observed odors or staining in the excavation during this investigation. On-going air monitoring was conducted during this investigation, and there were no VOC readings over 50 parts per million (ppm). From this investigation, there was an understanding that the extent of impacted soil from the UST was limited. The final pit extent was 64 inches by 60 inches. The depth on the north wall was 108 inches bgs and 64 inches bgs on the south wall side (**Figure 2**).

After the activities on April 2 and 29, 2019, the excavation was covered and secured with fencing on the private properties. After the results were received from the sampling on April 29, 2019, the excavation was backfilled on May 6 and the area repaved on May 7, 2019. Due to the slope of the excavation, clean fill material was compacted to 95% Proctor density in 6-inch lifts instead of a bentonite cement-slurry backfill that was originally proposed. Then on May 7, 2019, the remaining site restoration activities were completed. The area was repaved, temporary security fencing was removed, permanent fencing was replaced, and the parking areas were restriped.

2.4 Air Monitoring

Rule 1166 monitoring was conducted by Group Delta during all the excavation activities. There were no VOC readings over 50 ppm on April 2 or 29, 2019. The Rule 1166 Compliance Plan Permit 581787 Completion Memorandum was prepared and submitted to SCAQMD on May 14, 2019. The Completion Memorandum include the calibration forms and monitoring forms from April 2 and 29, 2019. The Completion Memorandum is included as **Appendix E**.

2.5 Soil Sampling Procedures

Samples were collected directly from the bucket of excavator, which collected the soil from specific locations within the excavation (**Figure 2**). For non-organic analyses, an 8-oz sealed glass jar with a Teflon™ lined lid was used per soil sample. In addition to filling glass jars, the VOC and TPH samples were preserved utilizing EPA Method 5035. This preservation method was completed by using a TerraCore™ dual analysis sampling kit. The kit includes a dedicated 5-gram

plastic plunger, four volatile organic analysis (VOA) 40-mililiter (ml) container with 5 ml of 20% sodium bisulfate solution with stir bars, one VOA container with 5 ml of methanol, and one 50 ml poly container. A total of 5 VOAs and 1 poly container were collected per sample.

The samples were labeled with a unique sample identification, date, and time. The sample containers were placed in plastic bags, and the bags sealed and placed in a cooler on ice prior being transported under chain-of-custody protocol to Eurofins Calscience Environmental Laboratory (Calscience) in Garden Grove, California, a State-certified laboratory under the Environmental Laboratory Accreditation Program (ELAP) No. 1230.

2.6 Analytical Methods

Each confirmation soil sample was analyzed for the following:

- VOCs plus fuel oxygenates in accordance with EPA Method 8260B, and preserved by EPA Method 5035
- TPH – specified carbon chain in accordance with EPA Methods 8015B(M) and 8015M, and preserved by EPA Method 5035
- Title 22 Metals in accordance with EPA Method 6010B/7471
- Polychlorinated biphenyls (PCBs) in accordance with EPA Method 8082

As a note, PCBs were not required as part of *UST Soil Report Requirement*. However, once the UST was opened where the hardened sludge of waste oil was visible, the tank contents were suspect of containing PCBs. There is no history on this UST and has had an unknown purpose. Waste oil could be from coolant fluids, heat transfer fluids, and PCBs are highly soluble in organic solvents and oils. Since the Site has proposed redevelopment plans underway, the oversight Professional Geologist included this analysis into the sampling suite to eliminate this potential concern from future evaluations.

3.0 SUMMARY OF RESULTS

The results of the confirmation sampling are discussed in this section, and the data is presented on **Tables 1 through 4**, and the laboratory analytical reports are included as **Appendix F**. Screening criteria has been established for the project as listed in the *UST Soil Report Requirements (Appendix D)*. If a detected result is not listed in the *UST Soil Report Requirements*, then the screening criteria for residential use scenario from either the California Department of Toxic Substances Control (DTSC) Human and Ecological Risk Office (HERO) *Human Health Risk Assessment, Note 3 Screening Levels* (SL; DTSC, April 2019) or EPA's *Regional Screening Levels* (RSLs; EPA, April 2019).

3.1 TPH Analytical Results

For the initial confirmation samples collected on April 2, the samples were analyzed for the TPH full specified carbon chain ranging from C4 to C44 (**Table 1**). The LAFD's *Analytical Requirements* did not include an action level for waste oil. The LAFD Geologist, Mr. Eloy Luna, was contacted to discuss and determine an action level. In Mr. Luna's capacity, he has only been provided one action level for all types of TPH from the state agencies. If the decision was made to keep levels of TPH in soil above the LAFD action levels, Mr. Luna would need to escalate this case to these state agencies. Since this small UST had a limited source size and as described in Section 2.0, a prior investigation showed that the impacted soil was limited. The action level of 100 mg/kg was accepted for heavy end oils. Only the north sidewall (SW-N-040219) was below the action level. On April 29, additional over excavation work to remove impacted soil in the pit bottom and the south wall, and to collect final confirmation samples. Final confirmation samples were collected for the south wall (SW-S-042919) and pit bottom (PB-CENTER-042919). The results for the two final confirmation samples were below the LAFD action level of 100 mg/kg (**Table 1**).

3.2 VOCs Analytical Results

For the initial confirmation samples collected on April 2, the samples were analyzed for the full VOC analytical suite including fuel oxygenates (ie, diisopropyl ether, ethyl-t-butyl ether, methyl-t-butyl ether, tert-amyl-methyl ether, tert-butyl alcohol). No fuel oxygenates concentrations were detected above the laboratory reporting limits of 0.97 micrograms per kilogram (µg/kg) in the two side wall samples, SW-S-040219 and SW-N-040219 (**Table 2**). For the aromatic fuel additives also known as benzene, toluene, ethylbenzene and xylenes (BTEX), a combined total concentration of 50 mg/kg is the LAFD action level for BTEX. Results from the two side wall samples, SW-S-040219 and SW-N-040219 are below the LAFD's *Analytical Requirements*.

However, the pit bottom sample had other VOCs detected. The concentration for naphthalene for this sample was 9,700 µg/kg, which is above the established residential screening criteria (**Table 2**). These results prompted additional over excavation work to remove impacted soil in the pit bottom, and collect final confirmation samples. The additional over excavation was completed on April 29, 2019.

On April 29, final confirmation samples were collected for the south wall (SW-S-042919) and pit bottom (PB-CENTER-042919). There were no detections of VOCs in the two final confirmation samples (**Table 2**).

3.3 Metals Analytical Results

Analyzing for metals was not included as part of LAFD's *Analytical Requirements*. However, as part of the initial assessment of the UST when the UST discovered, waste characterization samples were collected as part of the sampling suite required by disposal facilities. The tank contents contained lead impacted waste oil. Once the UST was removed showing a small leak at the bottom of the UST, metals analysis was added to the sampling suite.

For the metal detections in soil, none of the results were above the established screening criteria. It should be noted that Southern California has a higher acceptable level for arsenic than what is listed in the DTSC SLs or the EPA RSLs. DTSC made a determine of background arsenic levels in Southern California in March 2008, which established the average arsenic background level is 12 mg/kg (DTSC, 2008). Soil analytical results for metals are provided in **Table 3**.

3.4 PCBs Analytical Results

Analyzing for PCBs was not included as part of LAFD's *Analytical Requirements*. Once the tank contents were visible and due the potential age of the UST, there was a high probability that the UST might contain PCBs. For the initial confirmation sampling on April 2, 2019, samples were analyzed for PCBs. No PCBs were detected in the side wall or pit bottom samples (**Table 4**). The final confirmations samples collected on April 29, 2019 were not analyzed for PCBs.

4.0 WASTE MANAGEMENT

Management of waste generated during the UST abandonment is discussed in this section, and the data and documents are included as **Appendices G to I**.

4.1 Sampling Procedures

Samples were collected directly from the waste containers. An 8-oz sealed glass jar with a Teflon™ lined lid was used per sample. The samples were labeled with a unique sample identification, date, and time. The sample containers were placed in plastic bags, and the bags sealed and placed in a cooler on ice prior being transported under chain-of-custody protocol to Calscience.

4.2 Analytical Methods

Each confirmation soil sample was analyzed for the following:

- VOCs plus fuel oxygenates in accordance with EPA Method 8260B
- TPH – specified carbon chain in accordance with EPA Methods 8015B(M) and 8015M, and preserved by EPA Method 5035
- Title 22 Metals in accordance with EPA Method 6010B/7471
- PCBs in accordance with EPA Method 8082
- Toxicity characteristic leaching procedure (TCLP) for VOCs
- TCLP for metals

4.3 Soil

The results of the soil sampling supported classifying the soil removed from the excavation as non-hazardous solid waste utilizing the temporary State ID number CAC002999570 (**Appendix G**). On April 11, a total of 13 NA-approved 55-gallon drums (total of 4.07 tons) were transported by Belshire for disposal at Soil Safe of California – TPST located at 12328 Hibiscus Road in Aldelanto, California. The soil (total of 6.13 tons) from the final over excavation on April 29, 2019 was loaded into a 20-yard closed top bin. The bin was transported off-site by Belshire for disposal at Soil Safe of California – TPST on May 8, 2019. The manifests are included as **Appendix H**.

4.4 Tank Contents and Rinsate

The results of the tank contents and rinsate sampling was classified as Resource Conservation and Recovery Act (RCRA) hazardous waste flammable liquid due to the levels of lead in the waste oil. A temporary State ID number could not be utilized to remove this waste. A temporary Federal ID application was submitted on May 1, 2019 and approved on May 6, 2019. The waste was profiled and accepted by Demenno Kerdoon at 2100 North Alameda Street, Compton, California. The waste was transported off-site by Belshire under the temporary Federal ID CAP000295071 to Demenno Kerdoon on May 24, 2019.

5.0 SUMMARY AND CONCLUSION

On April 2, an unknown 150-gallon UST was permanently abandoned by removal. The UST was cleaned, certified, removed from the excavation and transported off-site for disposal. The pit was over excavated, and confirmation samples were collected. Only the results from one of the samples, SW-N-040219, was in accordance with LAFD action levels. Additional over excavation work was completed on April 29, and more confirmation samples were collected. The results for the remaining confirmation samples were in accordance with LAFD action levels.

The soil from the excavation activities was properly manifested and transported off-site by Belshire for disposal at Soil Safe of California – TPST. The UST contents and rinsate were profiled as RCRA hazardous waste flammable liquid. The UST contents were transported off-site by Belshire under the temporary Federal ID CAP000295071 to Demenno Kerdoon.

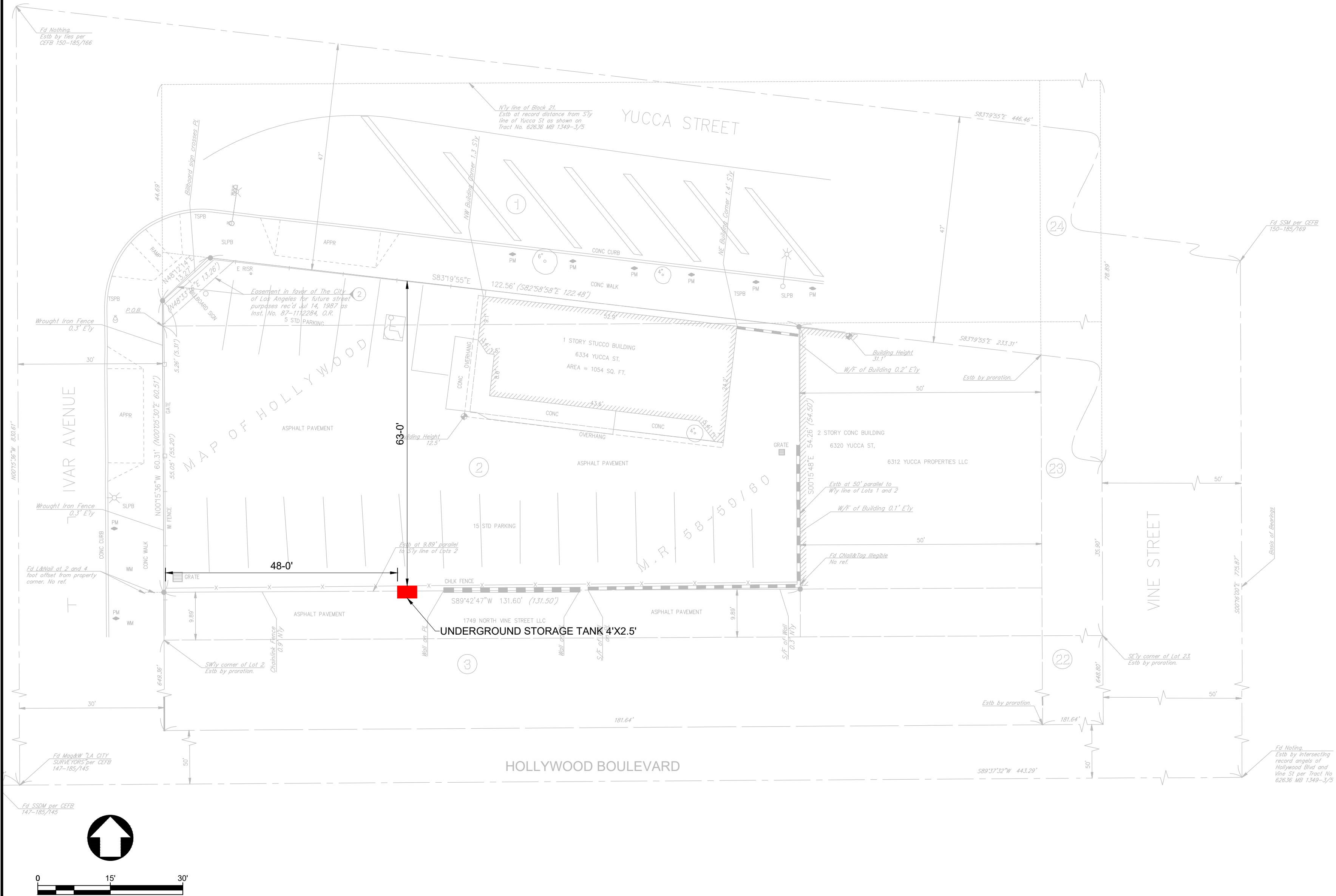
The recommendation is for no further action and closure of this case. After review of the confirmation sampling results, depth to groundwater (at approximately 51 feet bgs), and observations made during a deeper excavation adjacent to the UST, the source has been contained and removed with no further threat to groundwater or as an indoor air intrusion risk to any current or future development at the Site.

6.0 REFERENCES

- CDWR. 1961. *Planned Utilization of the Ground Water Basins of the Coastal Plain of Los Angeles County*, Appendix A: Ground Water Geology. Bulletin 104.
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- Group Delta. 2015. Fault Activity Investigation, East and West Millennium Sites 1733-1741 Argyle Avenue; 6236 and 6334 West Yucca Street; 1720-1730, 1740, 1745-1760, and 1762-1770 N. Vine Street; 1746, 1748-1754, 1760, and 1764 N. Ivar Avenue, Hollywood Area, City of Los Angeles, California, GDC Project no. 1191 A. March 6.

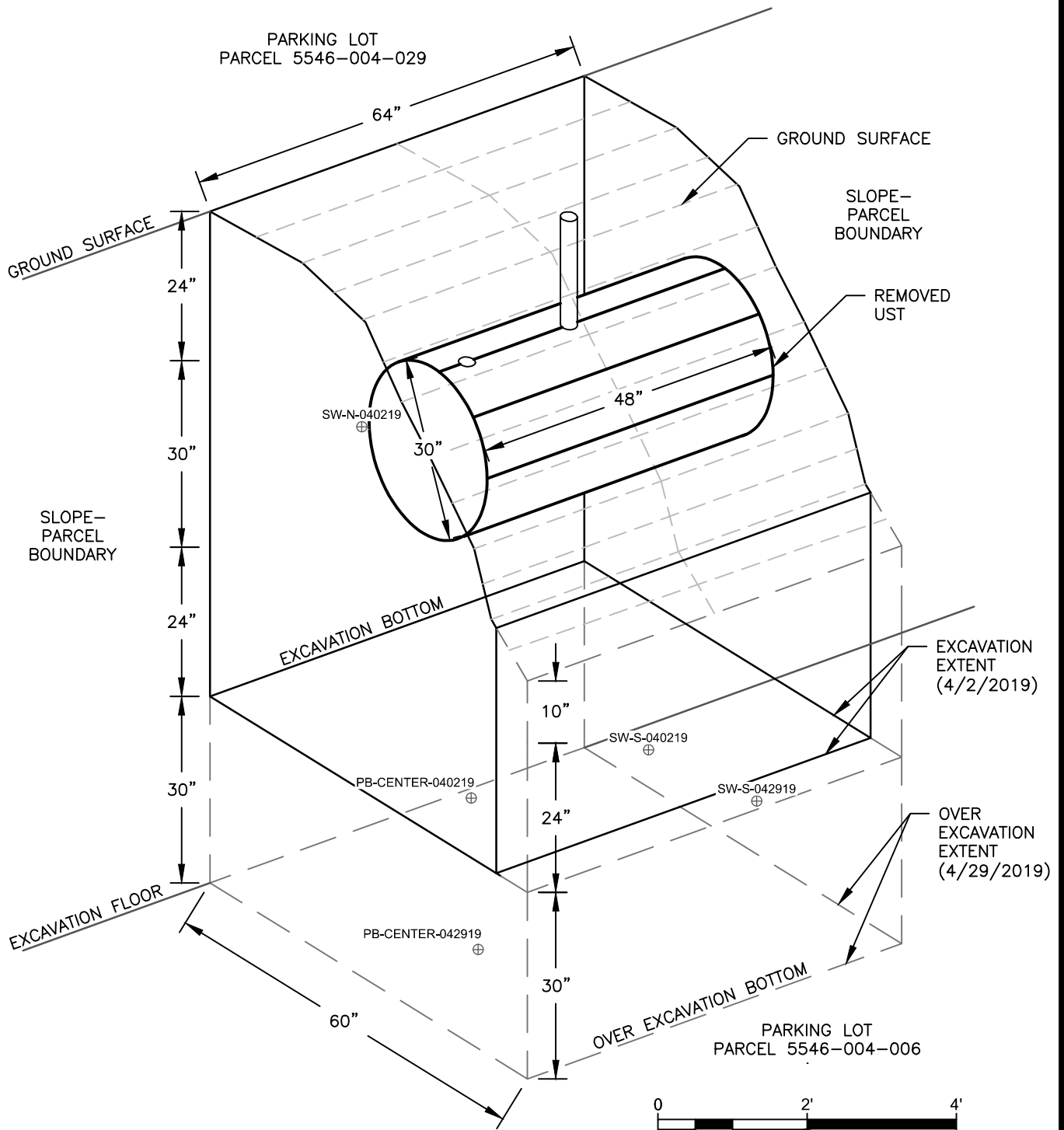
FIGURES

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DATE: 11/02/2018	DRAWN BY: JMT		GROUP DELTA CONSULTANTS, INC 370 Amapola Ave. Suite 212 Torrance, CA. 90501	SITE PLAN		LA-1301A
PREPARED BY: -	APPROVED BY: AM			SCALE: AS SHOWN		FIGURE NUMBER: 1
REVISION: -	REVIEWED BY: -			1770 IVAR LLC HOLLYWOOD, CALIFORNIA		

FILE NAME: Z:\GRP.DELTA\YUCCA STREET\EXCAV.DWG\2019\EXCAV.0619\FIG02 LA1301B.EXCAV.ASM.0619.DWG



Explanation

SW-N-040219
⊕ SAMPLE LOCATION

TANK REMOVAL EXCAVATION SAMPLING
PARKING LOTS, PARCELS 5546-004-029 AND 5546-004-006

SAMPLE LOCATION MAP

1770 IVAR LLC
6334 YUCCA STREET, LOS ANGELES, CA 90028

Date: 06/19

Project No.
LA1301B



GROUP DELTA

Figure

2

TABLES

Table 1
Analytical Results for Total Petroleum Hydrocarbons in Soil
UST Removal
1770 Ivar LLC
6334 Yucca Street, Los Angeles, California

Sample ID	Laboratory ID	Sample Date	Units	C6	C7	C8	C9-C10	C11-C12	C13-C14	C15-C16	C17-C18	C19-C20	C21-C22	C23-C24	C25-C28	C29-C32	C33-C36	C37-C40	C41-C44	C4-C44 Total
SW-S-040219	19-04-0223-2	04/02/19	mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	9.1	32	60	110	78	38	12	6.2	350
SW-N-040219	19-04-0223-3	04/02/19	mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
PB-CENTER-040219	19-04-0223-4	04/02/19	mg/kg	<250	<250	<250	580	340	<250	<250	<250	930	3,500	6,200	12,000	7,600	3,500	1,200	550	36,000
Confirmation Samples (after additional excavation)																				
SW-S-042919	19-04-2258-1	04/29/19	mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	8.3	7.3	<5.0	<5.0	<5.0	30
PB-CENTER-042919	19-04-2258-2	04/29/19	mg/kg	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9
LAFD Analytical Requirements			mg/kg																	100

Notes

Samples were analyzed utilizing EPA Method 8015B(M)

Highlight = detected concentration is above the site-specific screening criteria

mg/kg = milligrams per kilogram

< = less than the laboratory reporting limit shown

Bold = detected concentration at or above the laboratory reporting limit

Table 2
Analytical Results for Detected Volatile Organic Compounds in Soil
UST Removal
1770 Ivar LLC
6334 Yucca Street, Los Angeles, California

Sample ID	Laboratory ID	Sample Date	Units	n-Butyl-benzene	sec-Butyl-benzene	Ethyl-benzene	Isopropyl-benzene	p-Isopropyl-toluene	Naphthalene	n-Propyl-benzene	Toluene	1,2,4-Tri-methyl-benzene	1,3,5-Tri-methyl-benzene	p/m-Xylene	o-Xylene
SW-S-040219	19-04-0223-2	04/02/19	ug/kg	2.0	<0.97	<0.97	<0.97	<0.97	23	<1.9	<0.97	9.3	2.4	2.0	1.3
SW-N-040219	19-04-0223-3	04/02/19	ug/kg	<0.96	<0.96	<0.96	<0.96	<0.96	<9.6	<1.9	<0.96	<1.9	<1.9	<1.9	<0.96
PB-CENTER-040219	19-04-0223-4	04/02/19	ug/kg	1,600	550	1,600	430	580	9,700	1,800	1,200	19,000	7,000	7,200	5,800
Confirmation Samples (after additional excavation)															
SW-S-042919	19-04-2258-1	04/29/19	ug/kg	<5.2	<5.2	<5.2	<5.2	<5.2	<52	<5.2	<5.2	<5.2	<5.2	<5.2	<5.2
PB-CENTER-042919	19-04-2258-2	04/29/19	ug/kg	<5.1	<5.1	<5.1	<5.1	<5.1	<51	<5.1	<5.1	<5.1	<5.1	<5.1	<5.1
LAFLD Analytical Requirements			ug/kg	--	--	--	--	--	--	--	--	--	--	--	--
DTSC HERO, HHRA, Note 3 - residential scenario			ug/kg	--	--	--	--	--	2,000	--	1,100,000	--	--	--	--
EPA RSL Screening Criteria - residential scenario			ug/kg	3,900,000	7,800,000	5,800	1,900,000	--	--	3,800,000	4,900,000	300,000	270,000	550,000	550,000

Notes

Samples were analyzed utilizing EPA Method 8260B

The lower value between DTSC SLs or EPA RSLs will be used to evaluate detected analytes.

 Highlight = detected concentration is above the site-specific screening criteria

ug/kg = micrograms per kilogram

< = less than the laboratory reporting limit shown

Analytes not detected at or above the laboratory reporting limit were excluded from the results table

Bold = detected concentration at or above the laboratory reporting limit

EPA = United States Environmental Protection Agency

DTSC = California EPA, Department of Toxic Substances Control

RSLs = Regional Screening Levels

-- = Not Available

Sources:

DTSC, 2019. Office of Human and Ecological Risk Office (HERO) Human Health Risk Assessment (HHRA), Note No. 3, Table 1. Screening Levels for Soil, April.

USEPA, 2019. Regional Screening Levels (RSL) Summary Table, April.

Table 3
Analytical Results for Metals in Soil
UST Removal
1770 Ivar LLC
6334 Yucca Street, Los Angeles, California

Sample ID	Laboratory ID	Sample Date	Units	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
SW-S-040219	19-04-0223-2	04/02/19	mg/kg	<0.739	<0.739	65.0	0.459	<0.493	7.18	4.09	5.85	52.4	<0.0847	0.261	5.80	<0.739	<0.246	<0.739	21.2	169
SW-N-040219	19-04-0223-3	04/02/19	mg/kg	<0.758	10.2	48.3	0.484	0.799	7.30	4.71	5.68	1.56	<0.0820	0.285	5.63	<0.758	<0.253	<0.758	20.2	1360
PB-CENTER-040219	19-04-0223-4	04/02/19	mg/kg	<0.785	<0.785	54.8	0.511	0.595	10.6	4.44	6.00	72.8	<0.0820	0.434	7.17	<0.785	<0.262	<0.785	26.1	344
Confirmation Samples (after additional excavation)																				
SW-S-042919	19-04-2258-1	04/29/19	mg/kg	<0.765	<0.765	61.1	0.387	<0.510	7.43	5.92	3.67	0.544	0.175	<0.255	6.56	<0.765	<0.255	<0.765	18.4	16.9
PB-CENTER-042919	19-04-2258-2	04/29/19	mg/kg	<0.789	<0.789	37.7	0.335	<0.526	7.85	5.64	4.81	<0.526	<0.0833	0.331	6.35	<0.789	<0.263	<0.789	20.3	19.2
DTSC HERO, HHRA, Note 3 - residential scenario			mg/kg	--	12*	--	16	910	--	--	--	80	1.0	--	820	--	--	--	--	--
EPA RSL Screening Criteria - residential scenario			mg/kg	31	0.68	15,000	160	71	120,000	23	3,100	400	11	390	1,500	390	390	0.78	390	23,000

Notes

Samples were analyzed utilizing EPA Method 6010B/7471

The lower value between DTSC SLs or EPA RSLs will be used to evaluate detected analytes, with the exception of arsenic.

Highlight = detected concentration is above the site-specific screening criteria

mg/kg = milligrams per kilogram

< = less than the laboratory reporting limit shown

Analytes not detected at or above the laboratory reporting limit were excluded from the results table

Bold = detected concentration at or above the laboratory reporting limit

EPA = United States Enviromental Protection Agency

DTSC = California EPA, Department of Toxic Substances Control

RSLs = Regional Screening Levels

-- = Not Available

Sources:

DTSC, 2019. Office of Human and Ecological Risk Office (HERO) Human Health Risk Assessment (HHRA), Note No. 3, Table 1. Screening Levels for Soil, April.

USEPA, 2019. Regional Screening Levels (RSL) Summary Table, April.

*Arsenic level determined by DTSC and documented in the *Determination of a Southern California Regional Background Arsenic Concentration in Soil* , March 2008.

Table 4
Analytical Results for Polychlorinated Biphenyls in Soil
UST Removal
1770 Ivar LLC
6334 Yucca Street, Los Angeles, California

Sample ID	Laboratory ID	Sample Date	Units	Aroclor-1016	Aroclor-1221	Aroclor-1232	Aroclor-1242	Aroclor-1248	Aroclor-1254	Aroclor-1260	Aroclor-1262	Aroclor-1268
SW-S-040219	19-04-0223-2	04/02/19	ug/kg	<50	<50	<50	<50	<50	<50	<50	<50	<50
SW-N-040219	19-04-0223-3	04/02/19	ug/kg	<49	<49	<49	<49	<49	<49	<49	<49	<49
PB-CENTER-040219	19-04-0223-4	04/02/19	ug/kg	<50	<50	<50	<50	<50	<50	<50	<50	<50
DTSC HERO, HHRA, Note 3 - residential scenario			ug/kg	4,000	--	--	--	--	--	--	--	--
EPA RSL Screening Criteria - residential scenario			ug/kg	4,100	200	170	230	230	240	240	--	--

Notes

Samples were analyzed utilizing EPA Method 8082

The lower value between DTSC SLs or EPA RSLs will be used to evaluate detected analytes, with the exception of arsenic.

 Highlight = detected concentration is above the site-specific screening criteria

ug/kg = micrograms per kilogram

< = less than the laboratory reporting limit shown

Analytes not detected at or above the laboratory reporting limit were excluded from the results table

Bold = detected concentration at or above the laboratory reporting limit

EPA = United States Environmental Protection Agency

DTSC = California EPA, Department of Toxic Substances Control

RSLs = Regional Screening Levels

-- = Not Available

Sources:

DTSC, 2019. Office of Human and Ecological Risk Office (HERO) Human Health Risk Assessment (HHRA), Note No. 3, Table 1. Screening Levels for Soil, April.

USEPA, 2019. Regional Screening Levels (RSL) Summary Table, April.

APPENDIX A

LOS ANGELES FIRE DEPARTMENT DIV-5 PERMIT

**Los Angeles City Fire Department
Underground Storage Tank
Project Permit**

FIRE DEPT. USE ONLY

DATA MANAGEMENT UNIT ☐ Tanks are registered & Fees paid to date ☐ Fee exempt _____ Signature	LAFD UNIFIED PROGRAM FACILITY ID: FA0041009	PERMIT NO.: SR0032994	DATE GRANTED: 3/6/2019	WORK MUST BEGIN BY: 9/6/2019	EXPIRATION DATE: 3/6/2020
	ENFORCEMENT INSPECTOR SHANE BYSTROM () -		FIRE STATION # 027	PERMIT TYPE: NEWLY DISCOVERED UST	

LOCATION INFORMATION

DOING BUSINESS AS (DBA): 1770 IVAR, LLC.			EPA ID NO: (not required for installation or monitoring) CAC002999570		
ADDRESS: 6334 YUCCA ST			PHONE NO: 323 961 1610		
CITY: LOS ANGELES		STATE: CA		ZIP: 90028	

PROPERTY OWNER

NAME: 1770 IVAR, LLC.			PHONE NO: (213) 875-4900		
ADDRESS: 1995 BROADWAY 3RD FLR					
CITY: NEW YORK		STATE: NY		ZIP: 10023	
PRINT NAME:			SIGNATURE:		

LESSEE/FACILITY OWNER

NAME: MP LOS ANGELES			PHONE NO: 323 961 1610		
ADDRESS: 1601 VINE ST					
CITY: Los Angeles		STATE: CA		ZIP: 90028	
PRINT NAME:			SIGNATURE:		

CONTRACTOR INFORMATION

NAME: Group Delta Consultants / Excell Excavating			PHONE NO: 310 320 5100		
ADDRESS:					
CITY:		STATE:		ZIP:	
CITY BUSINESS NUMBER: 35549600011	STATE CONTRACTOR #: Excell Ex. 659322	EXP. DATE:	WORK COMP NUMBER - EXP. DATE:		
PRINT NAME: ALYCIA MCCORD		SIGNATURE:		TITLE:	

ITEM	PE	QTY	NOTES:
UST Installation	5100		INV# - IN0289529 SR# - 32994
UST Abandonment-In-Place	5200		
UST Abandonment by Removal	5201		Newly found UST abandonment by removal
UST Add to/Alter: Monitor/Piping/Disp.	5300		
UST Tank Entry / Lining / Repair	5301		
Site Assessment	5400		
Emergency Plan Check/Site Assessment	5401		

INSPECTOR NAME: GREGORY STEVENS

INSPECTOR SIGNATURE

 LOS ANGELES FIRE DEPARTMENT
 BUREAU OF FIRE PREVENTION
 CUPA/UST PLAN CHECK

**LOS ANGELES FIRE DEPARTMENT****UNDERGOURNG STORAGE TANK - PROJECT PERMIT STATEMENT****FIRE PREVENTION BUREAU CUPA SECTION**

200 NORTH MAIN STREET, ROOM 1780
LOS ANGELES, CA 90012
TEL: (213) 978-3700
FAX: (213) 978-3615

INVOICE

Invoice Date: 1/14/2019
Permit No/RFI: SR0032994
Invoice No: IN0289529
Owner Name: 1770 IVAR, LLC.
Owner Address: 1995 BROADWAY 3RD FLR
NEW YORK, NY 10023
Owner Phone No: (213) 875-4900

CONTRACTOR (Company Name/Self):

1770 IVAR, LLC.
6334 YUCCA ST
LOS ANGELES, CA 90028

Site Address: 6334 YUCCA ST
LOS ANGELES, CA 90028

DATE	PE	DESCRIPTION	AMOUNT
PAYMENTS			
1/14/2019	9917	PRE-PAYMENT (D5)	(\$1,944.00)
PAYMENTS SUBTOTAL:			(\$1,944.00)
CHARGES:			\$0.00
PENALTIES:			\$0.00
PAYMENTS:			(\$1,944.00)
ADJUSTMENTS:			\$0.00
INVOICE TOTAL DUE:			(\$1,944.00)

For Division 5 Permits:
Plan Check and Inspection services are calculated on a fee for service basis.
Each type of transaction has been assigned a charge based on the estimated time required for the service.
If Plan Check/Inspection services exceeded the assigned hours, additional charges will accrue in 1 hour increments. These additional charges will be billed to the Responsible Party.

For Payments:

200 North Main Street, Room 1700
Los Angeles, CA 90012
Phone: (213) 978-3700
Email: lafd.usttestnotify@lacity.org

Last Payment: **Fund 100 Dept #38 RevS. 3897**

Check No: 79272

Check Date: 12/3/2018

Amount Paid: \$1,944.00

Signature: _____

LOS ANGELES FIRE DEPARTMENT

Email: lsfdustplancheck@lafd.org

Application for Division 5 Permit — Atmospheric Underground Tank

Fire Department Use Only

CERS ID:	LAPD Unified Program Facility ID:	Permit No.	Fire Station #	Date Granted (The work must start within 9 mos.)
	Enforcement Inspector	Permit Type:		Expiration Date: (The work must be completed)

LOCATION INFORMATION 2/4/19 = CAC002999570

Doing Business As (DBA): 1770 IVAR LLC		EPA ID No. CAC002987576 exp 02/01/19	
Address: Number Dlr. 0334	Street Name YUCCA	St., Ave., Blvd., etc. ST.	Phone No.: (323) 961-1610
City: LOS ANGELES	State: CA	Zip: 90028	

PROPERTY OWNER

Name: 1770 IVAR LLC	Phone Number: (212) 875-4900
Address: 1995 BROADWAY, 3RD FLOOR	Email: zaarons@millenniumptres.com
City: NEW YORK	State: NY Zip: 10023
Print Name: MARCO PALUMBO	Signature:

LESSEE/FACILITY OWNER

Name: MP LOS ANGELES	Phone Number: (323) 961-1610
Address: 1601 VINE ST. c/o MP LOS ANGELES	Email: JMARIANI@HollywoodCA.com
City: LOS ANGELES	State: CA Zip: 90028
Print Name: JOSEPH MARIANI JR.	Signature:

CONTRACTOR INFORMATION

Company Name: GROUP Delta Consultants	Phone Number: (310) 320-5100
Address: 370 AMARILLA AVE. SUITE 212	Email: alviam@groupdelta.com
City: TORRANCE	State: CA Zip: 90501
City Business Number: 3554960011	State Contractors Number: 659322
Print Name: ALVIA A. MCCORD	Signature: Title: Sr. Geologist / PG

ITEM	FE	QTY	NOTES:
☐ UST(s) Installation	5100		
☒ UST(s) Abandonment by Removal	5201	1	55-gallon steel tank
☐ UST(s) Abandonment-In-Place	5200		
☐ UST(s) Tank Entry / Lining / Repair	5301		
☐ UST(s) Add to / Alter: Monitor / Piping / Disp.	5300		
☐ Site Assessment	5400		
☐ Emergency Plan Check / Site Assessment	5401		

Please indicate payment method by checking appropriate box:

Credit Card ☐

Check ☒

**LOS ANGELES FIRE DEPARTMENT****UNDERGOURNG STORAGE TANK - PROJECT PERMIT STATEMENT****FIRE PREVENTION BUREAU CUPA SECTION**

200 NORTH MAIN STREET, ROOM 1780
LOS ANGELES, CA 90012
TEL: (213) 978-3700
FAX: (213) 978-3615

INVOICE

Invoice Date: 1/14/2019
Permit No/RFI: SR0032994
Invoice No: IN0289529
Owner Name: 1770 IVAR, LLC.
Owner Address: 1995 BROADWAY 3RD FLR
NEW YORK, NY 10023
Owner Phone No: (213) 875-4900

CONTRACTOR (Company Name/Self):

1770 IVAR, LLC.
6334 YUCCA ST
LOS ANGELES, CA 90028

Site Address: 6334 YUCCA ST
LOS ANGELES, CA 90028

DATE	PE	DESCRIPTION	AMOUNT
PAYMENTS			
1/14/2019	9917	PRE-PAYMENT (D5)	(\$1,944.00)
PAYMENTS SUBTOTAL:			(\$1,944.00)
CHARGES:			\$0.00
PENALTIES:			\$0.00
PAYMENTS:			(\$1,944.00)
ADJUSTMENTS:			\$0.00
INVOICE TOTAL DUE:			(\$1,944.00)

For Division 5 Permits:
Plan Check and Inspection services are calculated on a fee for service basis.
Each type of transaction has been assigned a charge based on the estimated time
required for the service.
If Plan Check/Inspection services exceeded the assigned hours, additional charges
will accrue in 1 hour increments. These additional charges will be billed to the
Responsible Party.

For Payments:

200 North Main Street, Room 1700
Los Angeles, CA 90012
Phone: (213) 978-3700
Email: lafd.usttestnotify@lacity.org

Last Payment: Fund 100 Dept #38 RevS. 3897

Check No: 79272

Check Date: 12/3/2018

Amount Paid: \$1,944.00

Signature: TK

L.A.F.D.
UNDERGROUND TANK - PLAN CHECK

PAID
DATE: 1-14-19
CHECK NUMBER: 79272
INITIALS: TK
AMOUNT: 1944.00

T

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E
C
S

THIS CERTIFICATE MUST BE POSTED AT PLACE OF BUSINESS

CITY OF LOS ANGELES TAX REGISTRATION CERTIFICATE

THIS CERTIFICATE IS GOOD UNTIL SUSPENDED OR CANCELLED

BUSINESS TAX

ISSUED: 6/14/2009

ACCOUNT NO.	FUND/CLASS	DESCRIPTION	STARTED	STATUS
0000355495-0001-1	L049	Professions/Occupations	04/30/1996	Active

ISSUED TO

GROUP DELTA CONSULTING INC

2291 W 205TH STREET #105
TORRANCE, CA 90501-145132 MAUCHLY STE B
IRVINE, CA 92618-2336

ISSUED BY:

Antoinette D. Christavall

DIRECTOR OF FINANCE



(<http://finance.lacity.org/>).

Annual Business Taxes

Renewal Confirmation

This is a confirmation receipt for your submitted renewal. Please print and keep this receipt for your records.

Transaction Information:

Your Renewal was submitted and received on 02/28/2018.

The confirmation number for this transaction is **F0000355495000112018**

Your on-line payment for \$9,366.75 was submitted and received.

Based on the information that you have submitted thus far, the following are your identified taxable business activities.

Note: The issuance of a Tax Registration Certificate and the payment of the business tax do not authorize the conduct or continuance of any illegal business or of a legal business in an illegal manner within the City of Los Angeles. The City has enacted regulatory ordinances in areas such as zoning, building safety, police, fire, hazardous material disclosure, sanitation, health, etc., which must be complied with in order to lawfully conduct a business within the City. Failure to comply with these regulatory ordinances may result in legal action being taken against the taxpayer.

Legal Name: GROUP DELTA CONSULTANTS INC

Account Number: 000035549500011

Business Location: 370 AMAPOLA AVENUE SUITE #212
TORRANCE, CA 90501-7243

Taxable Activities:

Business Activity

Basis for Tax

Professions / Occupations (L049)

2202660

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[\(http://business.lacity.org/\)](http://business.lacity.org/)

Disclaimer

Non-financial information such as name, business address (including home-based businesses), mailing address, etc., contained in your City of Los Angeles tax and permit records, is subject to public disclosure under provisions of the California Public Records Act, Government Code Section 6250 et seq. Your residential information may also be subject to public disclosure if that location is utilized for business and/or mailing purposes.

Contact Us

📍 200 N. Spring Street, Los Angeles, CA 90012

☎ Call 311

✉ [Submit Feedback \(http://finance.lacity.org/submit-feedback\)](http://finance.lacity.org/submit-feedback)

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Memorandum

GDC Project: LA1301B

To: Inspector Gregory Stevens
From: Alycia A. McCord, Group Delta Consultants, Inc.
Date: March 5, 2019
Subject: Scope of Work for UST Removal

The purpose of this memorandum is to provide a scope of work (SOW) outlining field procedures to permanently abandon a small (less than 200 gallon) underground storage tank (UST) encountered at 6334 Yucca Street in Los Angeles, California (Site). The UST was encountered during a fault investigation conducted at the Site in October and November 2018.

Tank Condition

During excavation activities, the trench was expanded to the east. Bedding sand was encountered in the weathered bedrock being investigated as part of a fault investigation. The bedding sand was covering small tank. The tank has 2 connection points. One point was open with not piping connected. The tank measured 4 feet long X 2.5 feet wide. Other than the connection point being open, the tank appears to be in stable shape. Though the tank has the beginning of a corrosion exfoliation layer, the tank did not have any holes or obvious weak spots from corrosion. Based on the exposed western edge of the tank, the tank appears to be homemade. The tank is of single wall design, welded, and no rivets. The ends are not smooth welded or rounded ends. It appears that a sheet of metal was welded in side a metal tube and the excess was torched off unevenly.

Since the tank was exposed on the top and one side, an assessment of the tank and surrounding soils were conducted. A photo-ionization detector (PID) was utilized to determine if the tank had leaked. No readings above background levels were reported. There were no stained soils or detectable odor in the soils.

Sampling of Fluid in Tank

A polyethylene bailer was deployed into the tank to collect the contents of the tank. The contents are layered with bedding sand and sediment on the bottom, water, and an oily sludge floating on top of the water. Samples were collected of tank contents, specifically the oily sludge, water/sediment, and soil immediately outside the tank. The samples were submitted to Eurofins Calscience Laboratory Inc. in Gardena, California. The samples were analyzed for total petroleum hydrocarbons carbon chain (TPH-cc) by US Environmental Protection Agency (EPA) Method 8015B (M), volatile organic compounds (VOCs) by EPA Method 8260B, and metals by EPA Method 6010B.

Scope for Tank Removal

The procedure for cleaning and removing the tank included the following steps:

- Expose tank complete on all sides. Soil will be placed in steel 55-gallon North American (NA)-approved drums or a 20-yard closed top bin. The existing piping will be capped at the edge of the excavation.
- A vacuum truck will pump out tank contents.
- After pumping out the tank, the tank will be degassed, if necessary, and triple rinsed.
- Once the tank is cleaned, a marine chemist will test and certify the tank is cleaned.
- The vacuum truck will pump the contents from the tank and rinsate into steel 55-gallon NA-approved drums.
- The tank will be removed from the excavation and loaded on a truck for transport to an approved disposal facility.
- The excavation will be over excavated. Based on observations during the fault investigation, the over excavation will be an additional 2 feet below the tank into the weathered bedrock.
- Pit bottom samples will be collected from beneath each end of the tank. At the request of the Fire Inspector, wall samples will be collected.
- The samples will be analyzed for TPH-cc by EPA Method 8015B (M), VOCs by EPA Method 8260B, and metals by EPA Method 6010B.
- Once the samples have been received, reviewed, and confirmed to report no detections above established screening criteria, the excavation will be backfilled with slurry and paved to match the existing grade.

Waste Handling

Based on the expected quantity of waste generated during this tank removal, the tank contents and rinsate will be placed in steel 55-gallon NA-approved drums. The soil will be placed either in steel 55-gallon NA-approved drums or a 20-yard closed top bin pending waste profiling for transport for off-site disposal in accordance with State and Federal regulations. The waste containers will be sealed, labeled, and stored in an area free of vehicular traffic.

If you have any questions, please feel free to contact me at (310) 740-6971.

Sincerely,
GROUP DELTA CONSULTANTS, INC.



Alycia McCord, PG 9253, STSC-21768
Senior Geologist

SUBJECT TO FIELD INSPECTION

Approval of these plans and/or specifications does not exempt them from compliance with all pertinent sections of Municipal, State, or Federal code, law, or regulation

APPROVED

LOS ANGELES FIRE DEPARTMENT CUPA
UNDERGROUND STORAGE TANK PLAN CHECK

APPROVED

SR 32994

By Gregory Wm. Stevens at 10:49 am, Mar 06, 2019

APPROVAL / ACCEPTANCE

The following systems have been inspected and approved/accepted by the LAFD CUPA

Primary Containment System

INSPECTOR SIGNATURE

PRINT NAME

DATE

Secondary Containment System

INSPECTOR SIGNATURE

PRINT NAME

DATE

Monitoring System

INSPECTOR SIGNATURE

PRINT NAME

DATE

Other

INSPECTOR SIGNATURE

PRINT NAME

DATE

DATE:	11/02/2018	DRAWN BY:	JMT
PREPARED BY:		APPROVED BY:	AM
REVISION:		REVIEWED BY:	

GROUP DELTA
GROUP DELTA CONSULTANTS, INC
370 Amapola Ave.
Suite 212
Torrance, CA. 90501

SITE PLAN

1770 IVAR LLC
HOLLYWOOD, CALIFORNIA

LA-1301A

SCALE:

AS SHOWN

FIGURE NUMBER:

1

APPENDIX B

UST CERTIFICATION FOR REMOVAL

HAZARDOUS WASTE TANK CLOSURE CERTIFICATION

Page 1 of 1

I. FACILITY IDENTIFICATION

BUSINESS NAME (Name as FACILITY NAME or DBA - Doing Business As)

FACILITY ID#

TANK OWNER NAME

1770 IVAR LLC

TANK OWNER ADDRESS

6334 YUCCA STREET

TANK OWNER CITY

LOS ANGELES

STATE CALIFORNIA

ZIP CODE

90028

II. TANK CLOSURE INFORMATION

TANK INTERIOR ATMOSPHERE READINGS	Tank ID # (Attach additional copies of this page for more than three tanks)	Concentration of Flammable Vapor, %			Concentration of Oxygen, %		
		Top	Center	Bottom	Top	Center	Bottom
1	0402/1	0	0	0	20.9	20.9	20.9
2							
3							

III. CERTIFICATION

On examination of the tank, I certify the tank is visually free from product, sludge, scale (thin, flaky residual of tank contents), residue and debris. I further certify that the information provided herein is true and accurate to the best of my knowledge.

SIGNATURE OF CERTIFIER

Nancy G. Carraway

NAME OF CERTIFIER (Print)

Nancy G. Carraway

TITLE OF CERTIFIER

Certified Industrial Hygienist

ADDRESS

991 East California Boulevard

CITY

Pasadena, California 91106

PHONE

626 676 7681

DATE

04/02/2019

CERTIFICATION TIME

9:49am - 9:52am

STATUS OR AFFILIATION OF CERTIFYING PERSON

Certifier is a representative of the CUPA, authorized agency, or LIA:

☐ Yes ☒ No

Name of CUPA, authorized agency, or LIA:

LOS ANGELES CITY FIRE DEPARTMENT

If certifier is other than CUPA / LIA check appropriate box below.

☒ a. Certified Industrial Hygienist (CIH)

☐ b. Certified Safety Professional (CSP)

☐ c. Certified Marine Chemist (CMC)

☐ d. Registered Environmental Health Specialist (REHS)

☐ e. Professional Engineer (PE)

☐ f. Class II Registered Environmental Assessor

☐ g. Contractors' State License Board licensed contractor (with hazardous substance removal certification)

TANK PREVIOUSLY HELD FLAMMABLE OR COMBUSTIBLE MATERIALS

GASOLINE

(If yes, the tank interior atmosphere shall be re-checked with a combustible gas indicator prior to work being conducted on the tank.)

☒ Yes ☐ No

CERTIFIER'S TANK MANAGEMENT INSTRUCTIONS FOR SCRAP DEALER, DISPOSAL FACILITY, ETC:

INERT TANK INTERIOR BEFORE TORCH CUTTING OR USING SPARKING TOOLS ON OR NEAR TANK. TANK IS NOT SUITABLE FOR FOOD OR POTABLE WATER STORAGE, FOR PERSONNEL ENTRY, OR FOR HOT WORK. TANK IS SUITABLE FOR COLD WORK.

A copy of this certificate shall accompany the tank to the recycling / disposal facility and be provided to the CUPA. If there is no CUPA, copies shall be submitted to the LIA and authorized agency, owner / operator of the tank system, removal contractor, and the recycling / disposal facility.

APPENDIX C

TANK DISPOSAL MANIFEST

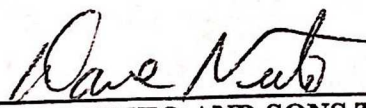
CERTIFICATE OF DESTRUCTION

**NIETO AND SONS TRUCKING, INC.
1281 BREA CANYON ROAD
BREA, CA 92821
(714) 990-6855**

**COMPANY : Construction Site
JOB SITE : 6334 Yucca Street
Los Angeles**

DESCRIPTION : 1-150 gallon tank

**TANK HAS BEEN SCRAPED,
CRUSHED AND DESTROYED BY
NIETO AND SONS TRUCKING
AT
ECOLOGY AUTO WRECKING
13780 E. IMPERIAL HIGHWAY
SANTA FE SPRINGS, CA 90670**

**SIGNATURE : 
BY : DAVE NIETO - NIETO AND SONS TRUCKING, INC.
DATE : 04 / 04 / 19**

APPENDIX D

UST SOIL REPORT REQUIREMENTS

UST SOIL REPORT REQUIREMENTS

A complete soil report is due 30 days from the date of soil sampling



MAIL COMPLETED SOIL REPORT TO:
LOS ANGELES FIRE DEPARTMENT
UNDERGROUND STORAGE TANK - ENFORCEMENT UNIT
200 NORTH MAIN STREET, SUITE 1700
LOS ANGELES, CALIFORNIA 90012



Also EMAIL COMPLETED SOIL REPORT TO:
lafd.usttestnotify@lacity.org

FACILITY ADDRESS

6334 YUCCA

PERMIT #

32994

FACILITY ID

0041009

DATE

4-2-19

The soil report should follow the Los Angeles Fire Department's General Report submittal guidelines. To assist you, the guidelines are available at http://www.lafd.org/sites/default/files/pdf_files/fpb41_tank_aband.pdf.

The following documentation shall be included as part of your report:

- A copy of the Los Angeles Fire Department Division 5-Permit
- Marine Chemist Certificate
- Copy of the Hazardous Waste Manifest for Disposal of Tank's Rinsate
- Certificate of Tank Disposal/Destruction and associated piping
- Soil manifest for soil removed from the site
- Scaled plot plan, clearly illustrating the location and depth of all the samples collected
- All analytical results should be presented in milligram per kilogram (mg/kg)
- All names in the chain of custody must be legible
- A copy of this page
- **If soil analysis results exceed the LAFD Minimum Action Levels, include an Unauthorized Release Report (URR) with your soil report**

ANALYTICAL REQUIREMENTS

Group A Gasoline	Group-B Diesel	Analytical Method	Required MDL's (ug/kg)	LAFD Minimum Action Levels mg/kg
Analyte	Analyte			
TPHg**		Cal-LUFT GC/FID or GC/MS (8015 M)	100-200	100
	TPHd**	Cal-LUFT GC/FID (8015 M)	1000	100
BTEX	BTEX	EPA Method 8260B (8021B)	1	Benzene -1, TEX-50
MTBE	MTBE	EPA Method 8260B	2	>MDL's
DIPE	DIPE	EPA Method 8260B	2	1
ETBE	ETBE	EPA Method 8260B	2	1
TAME	TAME	EPA Method 8260B	2	1
TBA	TBA	EPA Method 8260B	20	20
Group-C	Methanol*	Cal-LUFT GC/FID	1000	100
	Ethanol*	Cal-LUFT GC/FID (EPA 8260B)	500	100
Group-D	Waste Oil Tank: Test for TPHg, TPHd and heavy ends oils, using Cal-Luft GC/FID or GC/MS and BTEX and Oxygenates, and full suite of VOCs, using EPA Method 8260B			

In every group include Naphthalene as part of the test.

*If tanks historically or currently contain Methanol or Ethanol, test for those compounds.

**Soil samples shall be prepared using EPA Method 5035 for all VOC's and TPHg.

LOCATION	ANALYTE***	SAMPLES	LOCATION	ANALYTE**	SAMPLES
Tank 1			Dispenser (TPHg)		
Tank 2			Dispenser (TPHd)		
Tank 3			Piping		
Tank 4			Water samples		
Tank 5			Stockpiles		
Tank 6			Other		
Total number of samples			Total number of samples		

****Select one or more from groups A through D

UST SOIL REPORT REQUIREMENTS

1.0 Cover Letter/Introduction/Table of Contents

2.0 Site Identification

- 2.1 Current owner/s
- 2.2 Current business activities
- 2.3 Spill, leak, and accident history
- 2.4 Number, capacity, and contents of tanks and other components

3.0 Background and Summary

- 3.1 Site description
- 3.2 Previous investigation
- 3.3 Wet ink signature
- 3.4 Geologist Seal with I.D number and expire date (stamp)
- 3.5 Name and address of individual that produced the report

NOTE: All reports must include the wet-ink signature and seal of one of the following licensed professionals: Professional Civil Engineer (PE), Professional Geologist (PG), Certified Engineering Geologist (CEG), Certified Hydrogeologist (CHG), Professional Petroleum Engineer (PPE)

4.0 Geology and Hydrology

- 4.1 Geology
- 4.2 Hydrology

5.0 Tank Removal Activities, Procedures, On-site Inspection

- 5.1 Tank Removal/or abandonment in place activities
- 5.2 Clarifier Removal/associated with a UST **only**
- 5.3 Dispenser Replacement/Upgrade activities
- 5.4 Piping Replacement/Upgrade activities
- 5.5 Laboratory Analyses and Chain-of –Custody
- 5.6 Condition of tanks and pit upon removal
- 5.7 Date of removal activities & sampling protocols
- 5.8 Name & address of Removal Company

6.0 Soil Disposal Operations/Contaminated soil

7.0 AQMD Rule 1166 Air Monitoring

8.0 Recommendations/Conclusion

9.0 List of Figures/Maps

- 9.1 Site Location Map with cross streets
- 9.2 Site Plan (soil sample locations)

10.0 List of Tables

- 10.1 Soil analytical Laboratory Results per LAFD guidelines
- 10.2 Indicate which analytical method and detection limit used
- 10.3 Report all “non-detect” (ND) with < numerical MDL value (not just the ND without the detection limit value)

11.0 List of Appendices

- 11.1 Copy of the LAFD Div-5 Permit
- 11.2 UST Certification for Removal
- 11.3 Tank Rinsate Disposal Manifest
- 11.4 Analytical Results with chain of custody
- 11.5 Soil Disposal Manifest
- 11.6 AQMD Rule 1166 Field Monitoring Data Sheets
- 11.7 Tank disposal manifest/with facility address
- 11.8 UST Soil Report Requirements

APPENDIX E

AQMD RULE 1166 COMPLETION MEMORANDUM



GROUP DELTA

To: South Coast Air Quality Management District
Engineering & Compliance Division
Toxics and Waste Management Unit
21865 E. Copley Drive
Diamond Bar, CA. 91765-4182

May 14, 2019

From: Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501

Attention: Senior Enforcement Manager

SUBJECT: Rule 1166 Compliance Plan Permit 581787 Completion Memorandum
Site Location: 6334 Yucca Street, Los Angeles, CA 90028
Initial Notification: 554751

Dear Senior Enforcement Manager:

Per Condition 28 of Plan #581787, Group Delta Consultants, Inc. (GDC) submits this *Rule 1166 Compliance Plan Permit #581787 Completion Memorandum*. The excavation project was initiated on March 26, 2019 and completed on April 29, 2019. This completion memorandum will contain the required documents accumulated during April 2019.

Per Condition 14 of Plan #581787, all the organic vapor analyzer (OVA) monitoring forms and associated daily equipment calibration forms have been included as Attachment 1 and Attachment 2, respectively. There were only two days of excavation activities, April 2 and 29.

If there are any further questions or concerns regarding this submittal, please contact me at (310) 320-5100 or via e-mail at alyciam@groupdelta.com.

Sincerely,

GROUP DELTA CONSULTANTS, INC.

Alycia A. McCord
Senior Geologist, PG 9253

Attachments:

Attachment 1 – Monitoring Forms

Attachment 2 – Equipment Calibration Forms

ATTACHMENT 1

MONITORING FORMS

VOC Soil Monitoring Records

Company Name Excel Excavating Inc.		Facility/Site Information	
Plan #: 581787	ID #: 124204	Name: 1770 IVAR LLC	Address: 6334 Yucca St.
Reference No(s).		City: Los Angeles	Zip: 90028

Monitor Information	Calibration Data	Monitoring Personnel	Excavation Summary (Upon completion of each page)	
Brand: Rae	Gas: Hexane	Name: Alycia McCord, PG	Total Cubic Yds (This page)	3.5
Model: Mini Rae	Date: 4.2.2019	Company: Group Delta	Total Cubic Yds (To date)	3.5
Type: PID	By: A. McCord	Phone: (310) 740-6971	Removed from Site (To date)	0

Time	VOC Concentration (PPMV) @ Excavated Load			Comment	Time	VOC Concentration (PPMV) @ Excavated Load			Comment
Every 5 min.	Reading	Hexane Factor	Adjusted Reading		Every 5 min.	Reading	Hexane Factor	Adjusted Reading	
0615	0.0	—	—						
0630	3.3	—	—						
0645	1.2	—	—						
0700	0.8	—	—						
0715	3.7	—	—						
0730	2.1	—	—						
0745	1.7	—	—						
0800	2.2	—	—						
0815	1.7	—	—						
0830	0.9	—	—						
0845	4.3	—	—						
0859	stop digging								

I certify that the information contained in the above document is true and correct. I further certify that the above listed hydrocarbon monitor was operated in a manner consistent with the manufacturer's specifications and the conditions specified within this plan. In addition, I certify that the above readings represent the actual measurements I observed and recorded during the excavation process.

SIGNATURE:

DATE: 4/2/2019

VOC Soil Monitoring Records

Company Name Excel Excavating Inc. P.O. Box 6176 Laguna Niguel, CA 92607	Facility/Site Information
Plan #: 581787	Name: 1770 IVAR LLC
ID #: 12A204	Address: 6334 Yucca St.
Reference No(s).	City: Los Angeles Zip: 90028

Monitor Information		Calibration Data		Monitoring Personnel		Excavation Summary (Upon completion of each page)	
Brand: <i>Rae</i>	Gas: <i>Hexane</i>	Name: <i>Alycia McCard</i>	Total Cubic Yds (This page)			<i>7</i>	
Model: <i>Muni Rae 200</i>	Date: <i>4/29/2019</i>	Company: <i>Group Delta</i>	Total Cubic Yds (To date)			<i>10.5</i>	
Type: <i>PID</i>	By: <i>A. McCard</i>	Phone: <i>310-740-6971</i>	Removed from Site (To date)			<i>3.5</i>	

[illegible]

I certify that the information contained in the above document is true and correct. I further certify that the above listed hydrocarbon monitor was operated in a manner consistent with the manufacturer's specifications and the conditions specified within this plan. In addition, I certify that the above readings represent the actual measurements I observed and recorded during the excavation process.

SIGNATURE:

DATE:

ATTACHMENT 2

EQUIPMENT CALIBRATION FORMS

Equipment Calibration Daily Log

Gas Detectors

Project Name <u>1770 IVAR LLC</u>		Date: <u>04-02-2019</u>
Project No. <u>LA1301 B</u>	Location <u>0334 Yucca St.</u>	Time: AM <u>0600</u>
		PM _____

Combustible Gas Indicator

Model <u>Supplied by marine chemist</u>			Serial No. _____
Ambient Air Readings			Comments _____
	AM	Adjustment	PM
O ₂ (%)		(span)	
CO (ppm)		(zero)	
H ₂ S (ppm)		(zero)	
LEL (%)		(zero)	
Operator Signature _____ (AM)			(PM) _____

Photo-Ionization Detector

Model <u>Mini Rae PLAIN-7600</u>		Serial No. <u>094-900486</u>
Bulb Type	☒ 10.6 meV (56 ppm baseline)	Post warm-up background <u>0.0</u> (ppm)
	☐ 11.7 meV (66 ppm baseline)	Comments _____
	☐ Other _____	
Calibration Gas:	AM	Adjustment
<u>hexane</u>	<u>99.9</u>	<u>-</u>
<u>isobutylene</u>	<u>0</u>	<u>-</u>
<u>fresh air</u>		
Operator Signature <u>Alyx McLeod</u> (Begin)		(End) _____

Organic Vapor Analyzer

Model _____		Serial No. _____
Calibration Gas:	(_____) ppm	Gas Select _____
	AM	Adjustment
Reading		PM
Background		
Operator Signature _____ (AM)		(PM) _____

Checked by <u>Alyx McLeod</u>	Date <u>04.02.2019</u>
-------------------------------	------------------------

Group Delta
Consultants

F-1027B
04/11

Equipment Calibration Daily Log

Gas Detectors

Project Name <u>1770 IVAR. LLC</u>		Date: <u>04.29.2019</u>
Project No. <u>LA1301B</u>	Location <u>6334 Yucca St.</u>	Time: AM <u>0730</u>
		PM _____

Combustible Gas Indicator

Model _____		Serial No. _____	
Ambient Air Readings		Comments _____	
	AM	Adjustment	PM
O ₂ (%)		(span)	
CO (ppm)		(zero)	
H ₂ S (ppm)		(zero)	
LEL (%)		(zero)	
Operator Signature _____ (AM)		_____ (PM)	

Photo-Ionization Detector

Model <u>MiniRae PGM-7600</u>		Serial No. <u>594-907382</u>	
Bulb Type	☒ 10.6 meV (56 ppm baseline)	Post warm-up background <u>0.0</u> (ppm)	
	☐ 11.7 meV (66 ppm baseline)	Comments _____	
	☐ Other _____	_____	
Calibration Gas:	AM	Adjustment	PM
100 ppm <u>hexane</u>	<u>100.1</u>	<u>—</u>	
<u>fresh air</u>	<u>0.0</u>	<u>—</u>	
Operator Signature <u>Aly M. Ford</u> (Begin)		_____ (End)	

Organic Vapor Analyzer

Model _____		Serial No. _____	
Calibration Gas: _____ (_____ ppm)		Gas Select _____	
	AM	Adjustment	PM
Reading			
Background			
Operator Signature _____ (AM)		_____ (PM)	

Checked by <u>Aly M. Ford</u>	Date <u>04.29.2019</u>
-------------------------------	------------------------

Group Delta
Consultants

APPENDIX F

CONFIRMATION SAMPLES
ANALYTICAL REPORTS



Supplemental Report 1

The original report has been revised/corrected.

**WORK ORDER NUMBER: 19-04-0223***The difference is service*

AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For**Client:** Group Delta Consultants, Inc.**Client Project Name:** Yucca / LA1301B**Attention:** Alycia McCord
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243*Vikas Patel*Approved for release on 06/03/2019 by:
Vikas Patel
Project Manager

ResultLink ▶

Email your PM ▶

Eurofins Calscience (Calscience) certifies that the test results provided in this report meet all NELAC Institute requirements for parameters for which accreditation is required or available. Any exceptions to NELAC Institute requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

Contents

Client Project Name: Yucca / LA1301B
Work Order Number: 19-04-0223

1	Work Order Narrative.	3
2	Sample Summary.	4
3	Detections Summary.	5
4	Client Sample Data.	9
	4.1 EPA 8015B (M) C6-C44 (Solid).	9
	4.2 EPA 6010B/7471A CAC Title 22 Metals (Solid).	13
	4.3 EPA 6010B TCLP/SPLP ICP Metals (Aqueous).	17
	4.4 EPA 7471A Mercury (Solid).	18
	4.5 EPA 8082 PCB Aroclors (Solid).	19
	4.6 EPA 8260B Volatile Organics (Aqueous).	21
	4.7 EPA 8260B Volatile Organics + Oxygenates Prep 5035 (Solid).	25
	4.8 EPA 8260B TCLP Volatile Organics (Aqueous).	40
5	Quality Control Sample Data.	48
	5.1 MS/MSD.	48
	5.2 LCS/LCSD.	54
6	Sample Analysis Summary.	64
7	Glossary of Terms and Qualifiers.	65
8	Chain-of-Custody/Sample Receipt Form.	66

Work Order: 19-04-0223Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 04/03/19. They were assigned to Work Order 19-04-0223.

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.



Calscience

Sample Summary

Client:	Group Delta Consultants, Inc.	Work Order:	19-04-0223
	370 Amapola Avenue, Suite 212	Project Name:	Yucca / LA1301B
	Torrance, CA 90501-7243	PO Number:	LA1301B
		Date/Time Received:	04/03/19 11:45
		Number of Containers:	23

Attn: Alycia McCord

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
TB040219	19-04-0223-1	04/02/19 07:00	2	Aqueous
SW-S-040219	19-04-0223-2	04/02/19 10:35	7	Solid
SW-N-040219	19-04-0223-3	04/02/19 10:30	7	Solid
PB-CENTER-040219	19-04-0223-4	04/02/19 10:40	7	Solid


Return to Contents



Calscience

Detections Summary

Client: Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Work Order: 19-04-0223
Project Name: Yucca / LA1301B
Received: 04/03/19

Attn: Alycia McCord

Page 1 of 4

Client SampleID

Analyte	Result	Qualifiers	RL	Units	Method	Extraction
SW-S-040219 (19-04-0223-2)						
Barium	65.0		0.493	mg/kg	EPA 6010B	EPA 3050B
Beryllium	0.459		0.246	mg/kg	EPA 6010B	EPA 3050B
Chromium	7.18		0.246	mg/kg	EPA 6010B	EPA 3050B
Cobalt	4.09		0.246	mg/kg	EPA 6010B	EPA 3050B
Copper	5.85		0.493	mg/kg	EPA 6010B	EPA 3050B
Lead	52.4		0.493	mg/kg	EPA 6010B	EPA 3050B
Molybdenum	0.261		0.246	mg/kg	EPA 6010B	EPA 3050B
Nickel	5.80		0.246	mg/kg	EPA 6010B	EPA 3050B
Vanadium	21.2		0.246	mg/kg	EPA 6010B	EPA 3050B
Zinc	169		0.985	mg/kg	EPA 6010B	EPA 3050B
C17-C18	1.5	J	1.2*	mg/kg	EPA 8015B (M)	EPA 3550B
C19-C20	9.1		5.0	mg/kg	EPA 8015B (M)	EPA 3550B
C21-C22	32		5.0	mg/kg	EPA 8015B (M)	EPA 3550B
C23-C24	60		5.0	mg/kg	EPA 8015B (M)	EPA 3550B
C25-C28	110		5.0	mg/kg	EPA 8015B (M)	EPA 3550B
C29-C32	78		5.0	mg/kg	EPA 8015B (M)	EPA 3550B
C33-C36	38		5.0	mg/kg	EPA 8015B (M)	EPA 3550B
C37-C40	12		5.0	mg/kg	EPA 8015B (M)	EPA 3550B
C41-C44	6.2		5.0	mg/kg	EPA 8015B (M)	EPA 3550B
C6-C44 Total	350		5.0	mg/kg	EPA 8015B (M)	EPA 3550B
n-Butylbenzene	2.0		0.97	ug/kg	EPA 8260B	EPA 5035
Naphthalene	23		9.7	ug/kg	EPA 8260B	EPA 5035
1,2,4-Trimethylbenzene	9.3		1.9	ug/kg	EPA 8260B	EPA 5035
1,3,5-Trimethylbenzene	2.4		1.9	ug/kg	EPA 8260B	EPA 5035
p/m-Xylene	2.0		1.9	ug/kg	EPA 8260B	EPA 5035
o-Xylene	1.3		0.97	ug/kg	EPA 8260B	EPA 5035

Return to Contents

* MDL is shown



Calscience

Detections Summary

Client: Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Work Order: 19-04-0223
Project Name: Yucca / LA1301B
Received: 04/03/19

Attn: Alycia McCord

Page 2 of 4

Client SampleID

<u>Analyte</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>Units</u>	<u>Method</u>	<u>Extraction</u>
SW-N-040219 (19-04-0223-3)						
Arsenic	10.2		0.758	mg/kg	EPA 6010B	EPA 3050B
Barium	48.3		0.505	mg/kg	EPA 6010B	EPA 3050B
Beryllium	0.484		0.253	mg/kg	EPA 6010B	EPA 3050B
Cadmium	0.799		0.505	mg/kg	EPA 6010B	EPA 3050B
Chromium	7.30		0.253	mg/kg	EPA 6010B	EPA 3050B
Cobalt	4.71		0.253	mg/kg	EPA 6010B	EPA 3050B
Copper	5.68		0.505	mg/kg	EPA 6010B	EPA 3050B
Lead	1.56		0.505	mg/kg	EPA 6010B	EPA 3050B
Molybdenum	0.285		0.253	mg/kg	EPA 6010B	EPA 3050B
Nickel	5.63		0.253	mg/kg	EPA 6010B	EPA 3050B
Vanadium	20.2		0.253	mg/kg	EPA 6010B	EPA 3050B
Zinc	1360		1.01	mg/kg	EPA 6010B	EPA 3050B

Return to Contents

* MDL is shown



Calscience

Detections Summary

Client: Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Work Order: 19-04-0223
Project Name: Yucca / LA1301B
Received: 04/03/19

Attn: Alycia McCord

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Client SampleID

Analyte	Result	Qualifiers	RL	Units	Method	Extraction
PB-CENTER-040219 (19-04-0223-4)						
Barium	54.8		0.524	mg/kg	EPA 6010B	EPA 3050B
Beryllium	0.511		0.262	mg/kg	EPA 6010B	EPA 3050B
Cadmium	0.595		0.524	mg/kg	EPA 6010B	EPA 3050B
Chromium	10.6		0.262	mg/kg	EPA 6010B	EPA 3050B
Cobalt	4.44		0.262	mg/kg	EPA 6010B	EPA 3050B
Copper	6.00		0.524	mg/kg	EPA 6010B	EPA 3050B
Lead	72.8		0.524	mg/kg	EPA 6010B	EPA 3050B
Molybdenum	0.434		0.262	mg/kg	EPA 6010B	EPA 3050B
Nickel	7.17		0.262	mg/kg	EPA 6010B	EPA 3050B
Vanadium	26.1		0.262	mg/kg	EPA 6010B	EPA 3050B
Zinc	344		1.05	mg/kg	EPA 6010B	EPA 3050B
C9-C10	580		250	mg/kg	EPA 8015B (M)	EPA 3550B
C11-C12	340		250	mg/kg	EPA 8015B (M)	EPA 3550B
C13-C14	120	J	63*	mg/kg	EPA 8015B (M)	EPA 3550B
C17-C18	170	J	63*	mg/kg	EPA 8015B (M)	EPA 3550B
C19-C20	930		250	mg/kg	EPA 8015B (M)	EPA 3550B
C21-C22	3500		250	mg/kg	EPA 8015B (M)	EPA 3550B
C23-C24	6200		250	mg/kg	EPA 8015B (M)	EPA 3550B
C25-C28	12000		250	mg/kg	EPA 8015B (M)	EPA 3550B
C29-C32	7600		250	mg/kg	EPA 8015B (M)	EPA 3550B
C33-C36	3500		250	mg/kg	EPA 8015B (M)	EPA 3550B
C37-C40	1200		250	mg/kg	EPA 8015B (M)	EPA 3550B
C41-C44	550		250	mg/kg	EPA 8015B (M)	EPA 3550B
C6-C44 Total	36000		5.0	mg/kg	EPA 8015B (M)	EPA 3550B
n-Butylbenzene	1600		100	ug/kg	EPA 8260B	EPA 5035
sec-Butylbenzene	550		100	ug/kg	EPA 8260B	EPA 5035
Ethylbenzene	1600		100	ug/kg	EPA 8260B	EPA 5035
Isopropylbenzene	430		100	ug/kg	EPA 8260B	EPA 5035
p-Isopropyltoluene	580		100	ug/kg	EPA 8260B	EPA 5035
Naphthalene	9700		1000	ug/kg	EPA 8260B	EPA 5035
n-Propylbenzene	1800		200	ug/kg	EPA 8260B	EPA 5035
Toluene	1200		100	ug/kg	EPA 8260B	EPA 5035
1,2,4-Trimethylbenzene	19000		200	ug/kg	EPA 8260B	EPA 5035
1,3,5-Trimethylbenzene	7000		200	ug/kg	EPA 8260B	EPA 5035
p/m-Xylene	7200		200	ug/kg	EPA 8260B	EPA 5035
o-Xylene	5800		100	ug/kg	EPA 8260B	EPA 5035

* MDL is shown



Calscience

Detections Summary

Client: Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Work Order: 19-04-0223
Project Name: Yucca / LA1301B
Received: 04/03/19

Attn: Alycia McCord

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Client SampleID

<u>Analyte</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>Units</u>	<u>Method</u>	<u>Extraction</u>
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Subcontracted analyses, if any, are not included in this summary.

Return to Contents

* MDL is shown



Calscience

Analytical Report

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0223
Preparation: EPA 3550B
Method: EPA 8015B (M)
Units: mg/kg

Project: Yucca / LA1301B

Page 1 of 4

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SW-S-040219	19-04-0223-2-A	04/02/19 10:35	Solid	GC 50	04/03/19	04/04/19 02:38	190403B04

Comment(s): - Results were evaluated to the MDL (DL), concentrations $\geq$ to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
C6	ND	5.0	1.2	1.00	
C7	ND	5.0	1.2	1.00	
C8	ND	5.0	1.2	1.00	
C9-C10	ND	5.0	1.2	1.00	
C11-C12	ND	5.0	1.2	1.00	
C13-C14	ND	5.0	1.2	1.00	
C15-C16	ND	5.0	1.2	1.00	
C17-C18	1.5	5.0	1.2	1.00	J
C19-C20	9.1	5.0	1.2	1.00	
C21-C22	32	5.0	1.2	1.00	
C23-C24	60	5.0	1.2	1.00	
C25-C28	110	5.0	1.2	1.00	
C29-C32	78	5.0	1.2	1.00	
C33-C36	38	5.0	1.2	1.00	
C37-C40	12	5.0	1.2	1.00	
C41-C44	6.2	5.0	1.2	1.00	
C6-C44 Total	350	5.0	1.3	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	88	61-145	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0223
Preparation: EPA 3550B
Method: EPA 8015B (M)
Units: mg/kg

Project: Yucca / LA1301B

Page 2 of 4

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SW-N-040219	19-04-0223-3-A	04/02/19 10:30	Solid	GC 50	04/03/19	04/04/19 02:57	190403B04

Comment(s): - Results were evaluated to the MDL (DL), concentrations $\geq$ to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
C6	ND	5.0	1.2	1.00	
C7	ND	5.0	1.2	1.00	
C8	ND	5.0	1.2	1.00	
C9-C10	ND	5.0	1.2	1.00	
C11-C12	ND	5.0	1.2	1.00	
C13-C14	ND	5.0	1.2	1.00	
C15-C16	ND	5.0	1.2	1.00	
C17-C18	ND	5.0	1.2	1.00	
C19-C20	ND	5.0	1.2	1.00	
C21-C22	ND	5.0	1.2	1.00	
C23-C24	ND	5.0	1.2	1.00	
C25-C28	ND	5.0	1.2	1.00	
C29-C32	ND	5.0	1.2	1.00	
C33-C36	ND	5.0	1.2	1.00	
C37-C40	ND	5.0	1.2	1.00	
C41-C44	ND	5.0	1.2	1.00	
C6-C44 Total	ND	5.0	1.3	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
n-Octacosane	98	61-145	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0223
Preparation: EPA 3550B
Method: EPA 8015B (M)
Units: mg/kg

Project: Yucca / LA1301B

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
PB-CENTER-040219	19-04-0223-4-A	04/02/19 10:40	Solid	GC 50	04/03/19	04/04/19 12:28	190403B04

Comment(s): - Results were evaluated to the MDL (DL), concentrations $\geq$ to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
C6	ND	250	63	50.0	
C7	ND	250	63	50.0	
C8	ND	250	63	50.0	
C9-C10	580	250	63	50.0	
C11-C12	340	250	63	50.0	
C13-C14	120	250	63	50.0	J
C15-C16	ND	250	63	50.0	
C17-C18	170	250	63	50.0	J
C19-C20	930	250	63	50.0	
C21-C22	3500	250	63	50.0	
C23-C24	6200	250	63	50.0	
C25-C28	12000	250	63	50.0	
C29-C32	7600	250	63	50.0	
C33-C36	3500	250	63	50.0	
C37-C40	1200	250	63	50.0	
C41-C44	550	250	63	50.0	
C6-C44 Total	36000	5.0	1.3	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	125	61-145	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0223
Preparation: EPA 3550B
Method: EPA 8015B (M)
Units: mg/kg

Project: Yucca / LA1301B

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-15-490-3548	N/A	Solid	GC 50	04/03/19	04/03/19 19:39	190403B04

Comment(s): - Results were evaluated to the MDL (DL), concentrations $\geq$ to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
C6	ND	5.0	1.3	1.00	
C7	ND	5.0	1.3	1.00	
C8	ND	5.0	1.3	1.00	
C9-C10	ND	5.0	1.3	1.00	
C11-C12	ND	5.0	1.3	1.00	
C13-C14	ND	5.0	1.3	1.00	
C15-C16	ND	5.0	1.3	1.00	
C17-C18	ND	5.0	1.3	1.00	
C19-C20	ND	5.0	1.3	1.00	
C21-C22	ND	5.0	1.3	1.00	
C23-C24	ND	5.0	1.3	1.00	
C25-C28	ND	5.0	1.3	1.00	
C29-C32	ND	5.0	1.3	1.00	
C33-C36	ND	5.0	1.3	1.00	
C37-C40	ND	5.0	1.3	1.00	
C41-C44	ND	5.0	1.3	1.00	
C6-C44 Total	ND	5.0	1.3	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
n-Octacosane	104	61-145	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0223
Preparation: EPA 3050B
Method: EPA 6010B
Units: mg/kg

Project: Yucca / LA1301B

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SW-S-040219	19-04-0223-2-A	04/02/19 10:35	Solid	ICP 8300	04/03/19	04/03/19 21:11	190402L04

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.739	0.985	
Arsenic	ND	0.739	0.985	
Barium	65.0	0.493	0.985	
Beryllium	0.459	0.246	0.985	
Cadmium	ND	0.493	0.985	
Chromium	7.18	0.246	0.985	
Cobalt	4.09	0.246	0.985	
Copper	5.85	0.493	0.985	
Lead	52.4	0.493	0.985	
Molybdenum	0.261	0.246	0.985	
Nickel	5.80	0.246	0.985	
Selenium	ND	0.739	0.985	
Silver	ND	0.246	0.985	
Thallium	ND	0.739	0.985	
Vanadium	21.2	0.246	0.985	
Zinc	169	0.985	0.985	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0223
Preparation: EPA 3050B
Method: EPA 6010B
Units: mg/kg

Project: Yucca / LA1301B

Page 2 of 4

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SW-N-040219	19-04-0223-3-A	04/02/19 10:30	Solid	ICP 8300	04/03/19	04/03/19 21:13	190402L04

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Antimony	ND	0.758	1.01	
Arsenic	10.2	0.758	1.01	
Barium	48.3	0.505	1.01	
Beryllium	0.484	0.253	1.01	
Cadmium	0.799	0.505	1.01	
Chromium	7.30	0.253	1.01	
Cobalt	4.71	0.253	1.01	
Copper	5.68	0.505	1.01	
Lead	1.56	0.505	1.01	
Molybdenum	0.285	0.253	1.01	
Nickel	5.63	0.253	1.01	
Selenium	ND	0.758	1.01	
Silver	ND	0.253	1.01	
Thallium	ND	0.758	1.01	
Vanadium	20.2	0.253	1.01	
Zinc	1360	1.01	1.01	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0223
Preparation: EPA 3050B
Method: EPA 6010B
Units: mg/kg

Project: Yucca / LA1301B

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
PB-CENTER-040219	19-04-0223-4-A	04/02/19 10:40	Solid	ICP 8300	04/03/19	04/03/19 21:15	190402L04

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Antimony	ND	0.785	1.05	
Arsenic	ND	0.785	1.05	
Barium	54.8	0.524	1.05	
Beryllium	0.511	0.262	1.05	
Cadmium	0.595	0.524	1.05	
Chromium	10.6	0.262	1.05	
Cobalt	4.44	0.262	1.05	
Copper	6.00	0.524	1.05	
Lead	72.8	0.524	1.05	
Molybdenum	0.434	0.262	1.05	
Nickel	7.17	0.262	1.05	
Selenium	ND	0.785	1.05	
Silver	ND	0.262	1.05	
Thallium	ND	0.785	1.05	
Vanadium	26.1	0.262	1.05	
Zinc	344	1.05	1.05	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

Group Delta Consultants, Inc.
 370 Amapola Avenue, Suite 212
 Torrance, CA 90501-7243

Date Received: 04/03/19
 Work Order: 19-04-0223
 Preparation: EPA 3050B
 Method: EPA 6010B
 Units: mg/kg

Project: Yucca / LA1301B

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	097-01-002-27722	N/A	Solid	ICP 8300	04/02/19	04/03/19 14:42	190402L04

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.



Calscience

Analytical Report

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0223
Preparation: EPA 1311
Method: EPA 6010B
Units: mg/L

Project: Yucca / LA1301B

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SW-S-040219	19-04-0223-2-A	04/02/19 10:35	Solid	ICP 8300	04/03/19	04/05/19 16:31	190405LA1A

Comment(s): - The analysis was performed on a TCLP extract of the sample.

Parameter	Result	RL	DF	Qualifiers
Lead	ND	0.500	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
PB-CENTER-040219	19-04-0223-4-A	04/02/19 10:40	Solid	ICP 8300	04/03/19	04/05/19 16:32	190405LA1A

Comment(s): - The analysis was performed on a TCLP extract of the sample.

Parameter	Result	RL	DF	Qualifiers
Lead	ND	0.500	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-14-021-2913	N/A	Aqueous	ICP 8300	04/03/19	04/05/19 16:19	190405LA1A

Parameter	Result	RL	DF	Qualifiers
Lead	ND	0.500	1.00	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0223
Preparation: EPA 7471A Total
Method: EPA 7471A
Units: mg/kg

Project: Yucca / LA1301B

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SW-S-040219	19-04-0223-2-A	04/02/19 10:35	Solid	Mercury 07	04/04/19	04/04/19 12:15	190404L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>		
Mercury		ND	0.0847	1.00			
SW-N-040219	19-04-0223-3-A	04/02/19 10:30	Solid	Mercury 07	04/04/19	04/04/19 12:21	190404L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>		
Mercury		ND	0.0820	1.00			
PB-CENTER-040219	19-04-0223-4-A	04/02/19 10:40	Solid	Mercury 07	04/04/19	04/04/19 12:24	190404L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>		
Mercury		ND	0.0820	1.00			
Method Blank	099-16-272-4519	N/A	Solid	Mercury 07	04/04/19	04/04/19 11:56	190404L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>		
Mercury		ND	0.0820	1.00			

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0223
Preparation: EPA 3545
Method: EPA 8082
Units: ug/kg

Project: Yucca / LA1301B

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SW-S-040219	19-04-0223-2-A	04/02/19 10:35	Solid	GC 58	04/03/19	04/04/19 15:14	190403L06

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Aroclor-1016	ND	50	1.00	
Aroclor-1221	ND	50	1.00	
Aroclor-1232	ND	50	1.00	
Aroclor-1242	ND	50	1.00	
Aroclor-1248	ND	50	1.00	
Aroclor-1254	ND	50	1.00	
Aroclor-1260	ND	50	1.00	
Aroclor-1262	ND	50	1.00	
Aroclor-1268	ND	50	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
Decachlorobiphenyl	32	24-168	
2,4,5,6-Tetrachloro-m-Xylene	74	25-145	

SW-N-040219	19-04-0223-3-A	04/02/19 10:30	Solid	GC 58	04/03/19	04/04/19 15:32	190403L06
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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Aroclor-1016	ND	49	1.00	
Aroclor-1221	ND	49	1.00	
Aroclor-1232	ND	49	1.00	
Aroclor-1242	ND	49	1.00	
Aroclor-1248	ND	49	1.00	
Aroclor-1254	ND	49	1.00	
Aroclor-1260	ND	49	1.00	
Aroclor-1262	ND	49	1.00	
Aroclor-1268	ND	49	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
Decachlorobiphenyl	80	24-168	
2,4,5,6-Tetrachloro-m-Xylene	81	25-145	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



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Analytical Report

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0223
Preparation: EPA 3545
Method: EPA 8082
Units: ug/kg

Project: Yucca / LA1301B

Page 2 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
PB-CENTER-040219	19-04-0223-4-A	04/02/19 10:40	Solid	GC 58	04/03/19	04/04/19 15:50	190403L06

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Aroclor-1016	ND	50	1.00	
Aroclor-1221	ND	50	1.00	
Aroclor-1232	ND	50	1.00	
Aroclor-1242	ND	50	1.00	
Aroclor-1248	ND	50	1.00	
Aroclor-1254	ND	50	1.00	
Aroclor-1260	ND	50	1.00	
Aroclor-1262	ND	50	1.00	
Aroclor-1268	ND	50	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
Decachlorobiphenyl	70	24-168	
2,4,5,6-Tetrachloro-m-Xylene	68	25-145	

Method Blank	099-12-535-5150	N/A	Solid	GC 58	04/03/19	04/04/19 06:34	190403L06
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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Aroclor-1016	ND	50	1.00	
Aroclor-1221	ND	50	1.00	
Aroclor-1232	ND	50	1.00	
Aroclor-1242	ND	50	1.00	
Aroclor-1248	ND	50	1.00	
Aroclor-1254	ND	50	1.00	
Aroclor-1260	ND	50	1.00	
Aroclor-1262	ND	50	1.00	
Aroclor-1268	ND	50	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
Decachlorobiphenyl	90	24-168	
2,4,5,6-Tetrachloro-m-Xylene	92	25-145	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



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Analytical Report

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0223
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

Project: Yucca / LA1301B

Page 1 of 4

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
TB040219	19-04-0223-1-A	04/02/19 07:00	Aqueous	GC/MS XX	04/03/19	04/03/19 19:12	190403L029

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Acetone	ND	20	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	50	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	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	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	5.0	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

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0223
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

Project: Yucca / LA1301B

Page 2 of 4

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
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	2.0	1.00	
1,1,2,2-Tetrachloroethane	ND	10	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	2.0	1.00	
o-Xylene	ND	1.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	1.0	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	89	77-120	
Dibromofluoromethane	105	80-128	
1,2-Dichloroethane-d4	111	80-129	
Toluene-d8	95	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



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Analytical Report

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0223
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

Project: Yucca / LA1301B

Page 3 of 4

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-14-001-28429	N/A	Aqueous	GC/MS XX	04/03/19	04/03/19 18:27	190403L029

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	20	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	50	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	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	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	5.0	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

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0223
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

Project: Yucca / LA1301B

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
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	2.0	1.00	
1,1,2,2-Tetrachloroethane	ND	10	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	2.0	1.00	
o-Xylene	ND	1.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	1.0	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	91	77-120	
Dibromofluoromethane	105	80-128	
1,2-Dichloroethane-d4	112	80-129	
Toluene-d8	96	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0223
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Project: Yucca / LA1301B

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SW-S-040219	19-04-0223-2-C	04/02/19 10:35	Solid	GC/MS R	04/02/19	04/03/19 20:40	190403L027

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	2.0	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.

Analytical Report

Group Delta Consultants, Inc.
 370 Amapola Avenue, Suite 212
 Torrance, CA 90501-7243

Date Received: 04/03/19
 Work Order: 19-04-0223
 Preparation: EPA 5035
 Method: EPA 8260B
 Units: ug/kg

Project: Yucca / LA1301B

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
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	23	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	9.3	1.9	1.00	
1,3,5-Trimethylbenzene	2.4	1.9	1.00	
Vinyl Acetate	ND	9.7	1.00	
Vinyl Chloride	ND	0.97	1.00	
p/m-Xylene	2.0	1.9	1.00	
o-Xylene	1.3	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	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	99	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0223
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Project: Yucca / LA1301B

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<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
Dibromofluoromethane	103	79-133	
1,2-Dichloroethane-d4	112	71-155	
Toluene-d8	99	80-120	

Analytical Report

Group Delta Consultants, Inc.
 370 Amapola Avenue, Suite 212
 Torrance, CA 90501-7243

Date Received: 04/03/19
 Work Order: 19-04-0223
 Preparation: EPA 5035
 Method: EPA 8260B
 Units: ug/kg

Project: Yucca / LA1301B

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SW-N-040219	19-04-0223-3-C	04/02/19 10:30	Solid	GC/MS R	04/02/19	04/03/19 21:07	190403L027

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.

Analytical Report

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0223
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Project: Yucca / LA1301B

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
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	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	98	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0223
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Project: Yucca / LA1301B

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<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
Dibromofluoromethane	104	79-133	
1,2-Dichloroethane-d4	113	71-155	
Toluene-d8	99	80-120	



Calscience

Analytical Report

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0223
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Project: Yucca / LA1301B

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
PB-CENTER-040219	19-04-0223-4-E	04/02/19 10:40	Solid	GC/MS R	04/02/19	04/04/19 22:11	190404L020

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Acetone	ND	5100	100	
Benzene	ND	100	100	
Bromobenzene	ND	100	100	
Bromochloromethane	ND	200	100	
Bromodichloromethane	ND	100	100	
Bromoform	ND	510	100	
Bromomethane	ND	2000	100	
2-Butanone	ND	2000	100	
n-Butylbenzene	1600	100	100	
sec-Butylbenzene	550	100	100	
tert-Butylbenzene	ND	100	100	
Carbon Disulfide	ND	1000	100	
Carbon Tetrachloride	ND	100	100	
Chlorobenzene	ND	100	100	
Chloroethane	ND	200	100	
Chloroform	ND	100	100	
Chloromethane	ND	2000	100	
2-Chlorotoluene	ND	100	100	
4-Chlorotoluene	ND	100	100	
Dibromochloromethane	ND	200	100	
1,2-Dibromo-3-Chloropropane	ND	510	100	
1,2-Dibromoethane	ND	100	100	
Dibromomethane	ND	100	100	
1,2-Dichlorobenzene	ND	100	100	
1,3-Dichlorobenzene	ND	100	100	
1,4-Dichlorobenzene	ND	100	100	
Dichlorodifluoromethane	ND	200	100	
1,1-Dichloroethane	ND	100	100	
1,2-Dichloroethane	ND	100	100	
1,1-Dichloroethene	ND	100	100	
c-1,2-Dichloroethene	ND	100	100	
t-1,2-Dichloroethene	ND	100	100	
1,2-Dichloropropane	ND	100	100	
1,3-Dichloropropane	ND	100	100	
2,2-Dichloropropane	ND	510	100	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

Group Delta Consultants, Inc.
 370 Amapola Avenue, Suite 212
 Torrance, CA 90501-7243

Date Received: 04/03/19
 Work Order: 19-04-0223
 Preparation: EPA 5035
 Method: EPA 8260B
 Units: ug/kg

Project: Yucca / LA1301B

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
1,1-Dichloropropene	ND	200	100	
c-1,3-Dichloropropene	ND	100	100	
t-1,3-Dichloropropene	ND	200	100	
Ethylbenzene	1600	100	100	
2-Hexanone	ND	2000	100	
Isopropylbenzene	430	100	100	
p-Isopropyltoluene	580	100	100	
Methylene Chloride	ND	1000	100	
4-Methyl-2-Pentanone	ND	2000	100	
Naphthalene	9700	1000	100	
n-Propylbenzene	1800	200	100	
Styrene	ND	100	100	
1,1,1,2-Tetrachloroethane	ND	100	100	
1,1,2,2-Tetrachloroethane	ND	200	100	
Tetrachloroethene	ND	100	100	
Toluene	1200	100	100	
1,2,3-Trichlorobenzene	ND	200	100	
1,2,4-Trichlorobenzene	ND	200	100	
1,1,1-Trichloroethane	ND	100	100	
1,1,2-Trichloroethane	ND	100	100	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	1000	100	
Trichloroethene	ND	200	100	
Trichlorofluoromethane	ND	1000	100	
1,2,3-Trichloropropane	ND	200	100	
1,2,4-Trimethylbenzene	19000	200	100	
1,3,5-Trimethylbenzene	7000	200	100	
Vinyl Acetate	ND	1000	100	
Vinyl Chloride	ND	100	100	
p/m-Xylene	7200	200	100	
o-Xylene	5800	100	100	
Methyl-t-Butyl Ether (MTBE)	ND	200	100	
Tert-Butyl Alcohol (TBA)	ND	2000	100	
Diisopropyl Ether (DIPE)	ND	100	100	
Ethyl-t-Butyl Ether (ETBE)	ND	100	100	
Tert-Amyl-Methyl Ether (TAME)	ND	100	100	
Ethanol	ND	51000	100	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	99	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0223
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Project: Yucca / LA1301B

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<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
Dibromofluoromethane	94	79-133	
1,2-Dichloroethane-d4	92	71-155	
Toluene-d8	100	80-120	



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Analytical Report

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0223
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Project: Yucca / LA1301B

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	095-01-025-30886	N/A	Solid	GC/MS R	04/03/19	04/03/19 11:47	190403L027

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

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0223
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Project: Yucca / LA1301B

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
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	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	94	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

Group Delta Consultants, Inc.	Date Received:	04/03/19
370 Amapola Avenue, Suite 212	Work Order:	19-04-0223
Torrance, CA 90501-7243	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: Yucca / LA1301B		Page 12 of 15

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
Dibromofluoromethane	96	79-133	
1,2-Dichloroethane-d4	94	71-155	
Toluene-d8	98	80-120	



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Analytical Report

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0223
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Project: Yucca / LA1301B

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	095-01-025-30890	N/A	Solid	GC/MS R	04/04/19	04/04/19 13:07	190404L020

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	5000	50.0	
Benzene	ND	100	50.0	
Bromobenzene	ND	100	50.0	
Bromochloromethane	ND	200	50.0	
Bromodichloromethane	ND	100	50.0	
Bromoform	ND	500	50.0	
Bromomethane	ND	2000	50.0	
2-Butanone	ND	2000	50.0	
n-Butylbenzene	ND	100	50.0	
sec-Butylbenzene	ND	100	50.0	
tert-Butylbenzene	ND	100	50.0	
Carbon Disulfide	ND	1000	50.0	
Carbon Tetrachloride	ND	100	50.0	
Chlorobenzene	ND	100	50.0	
Chloroethane	ND	200	50.0	
Chloroform	ND	100	50.0	
Chloromethane	ND	2000	50.0	
2-Chlorotoluene	ND	100	50.0	
4-Chlorotoluene	ND	100	50.0	
Dibromochloromethane	ND	200	50.0	
1,2-Dibromo-3-Chloropropane	ND	500	50.0	
1,2-Dibromoethane	ND	100	50.0	
Dibromomethane	ND	100	50.0	
1,2-Dichlorobenzene	ND	100	50.0	
1,3-Dichlorobenzene	ND	100	50.0	
1,4-Dichlorobenzene	ND	100	50.0	
Dichlorodifluoromethane	ND	200	50.0	
1,1-Dichloroethane	ND	100	50.0	
1,2-Dichloroethane	ND	100	50.0	
1,1-Dichloroethene	ND	100	50.0	
c-1,2-Dichloroethene	ND	100	50.0	
t-1,2-Dichloroethene	ND	100	50.0	
1,2-Dichloropropane	ND	100	50.0	
1,3-Dichloropropane	ND	100	50.0	
2,2-Dichloropropane	ND	500	50.0	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0223
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Project: Yucca / LA1301B

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
1,1-Dichloropropene	ND	200	50.0	
c-1,3-Dichloropropene	ND	100	50.0	
t-1,3-Dichloropropene	ND	200	50.0	
Ethylbenzene	ND	100	50.0	
2-Hexanone	ND	2000	50.0	
Isopropylbenzene	ND	100	50.0	
p-Isopropyltoluene	ND	100	50.0	
Methylene Chloride	ND	1000	50.0	
4-Methyl-2-Pentanone	ND	2000	50.0	
Naphthalene	ND	1000	50.0	
n-Propylbenzene	ND	200	50.0	
Styrene	ND	100	50.0	
1,1,1,2-Tetrachloroethane	ND	100	50.0	
1,1,2,2-Tetrachloroethane	ND	200	50.0	
Tetrachloroethene	ND	100	50.0	
Toluene	ND	100	50.0	
1,2,3-Trichlorobenzene	ND	200	50.0	
1,2,4-Trichlorobenzene	ND	200	50.0	
1,1,1-Trichloroethane	ND	100	50.0	
1,1,2-Trichloroethane	ND	100	50.0	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	1000	50.0	
Trichloroethene	ND	200	50.0	
Trichlorofluoromethane	ND	1000	50.0	
1,2,3-Trichloropropane	ND	200	50.0	
1,2,4-Trimethylbenzene	ND	200	50.0	
1,3,5-Trimethylbenzene	ND	200	50.0	
Vinyl Acetate	ND	1000	50.0	
Vinyl Chloride	ND	100	50.0	
p/m-Xylene	ND	200	50.0	
o-Xylene	ND	100	50.0	
Methyl-t-Butyl Ether (MTBE)	ND	200	50.0	
Tert-Butyl Alcohol (TBA)	ND	2000	50.0	
Diisopropyl Ether (DIPE)	ND	100	50.0	
Ethyl-t-Butyl Ether (ETBE)	ND	100	50.0	
Tert-Amyl-Methyl Ether (TAME)	ND	100	50.0	
Ethanol	ND	50000	50.0	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	94	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0223
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Project: Yucca / LA1301B

Page 15 of 15

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
Dibromofluoromethane	97	79-133	
1,2-Dichloroethane-d4	96	71-155	
Toluene-d8	99	80-120	

Analytical Report

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0223
Preparation: EPA 1311
Method: EPA 8260B
Units: ug/L

Project: Yucca / LA1301B

Page 1 of 8

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SW-S-040219	19-04-0223-2-A	04/02/19 10:35	Solid	GC/MS QQ	04/03/19	04/05/19 02:06	190404L038

Comment(s): - The analysis was performed on a TCLP extract of the sample.

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Acetone	ND	2000	1.00	
Benzene	ND	100	1.00	
Bromobenzene	ND	100	1.00	
Bromochloromethane	ND	200	1.00	
Bromodichloromethane	ND	100	1.00	
Bromoform	ND	500	1.00	
Bromomethane	ND	5000	1.00	
2-Butanone	ND	2000	1.00	
n-Butylbenzene	ND	100	1.00	
sec-Butylbenzene	ND	100	1.00	
tert-Butylbenzene	ND	100	1.00	
Carbon Disulfide	ND	1000	1.00	
Carbon Tetrachloride	ND	50	1.00	
Chlorobenzene	ND	100	1.00	
Chloroethane	ND	300	1.00	
Chloroform	ND	100	1.00	
Chloromethane	ND	1000	1.00	
2-Chlorotoluene	ND	100	1.00	
4-Chlorotoluene	ND	100	1.00	
Dibromochloromethane	ND	200	1.00	
1,2-Dibromo-3-Chloropropane	ND	500	1.00	
1,2-Dibromoethane	ND	100	1.00	
Dibromomethane	ND	100	1.00	
1,2-Dichlorobenzene	ND	100	1.00	
1,3-Dichlorobenzene	ND	100	1.00	
1,4-Dichlorobenzene	ND	100	1.00	
Dichlorodifluoromethane	ND	500	1.00	
1,1-Dichloroethane	ND	100	1.00	
1,2-Dichloroethane	ND	50	1.00	
1,1-Dichloroethene	ND	100	1.00	
c-1,2-Dichloroethene	ND	100	1.00	
t-1,2-Dichloroethene	ND	100	1.00	
1,2-Dichloropropane	ND	100	1.00	
1,3-Dichloropropane	ND	100	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

Group Delta Consultants, Inc.
 370 Amapola Avenue, Suite 212
 Torrance, CA 90501-7243

Date Received: 04/03/19
 Work Order: 19-04-0223
 Preparation: EPA 1311
 Method: EPA 8260B
 Units: ug/L

Project: Yucca / LA1301B

Page 2 of 8

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
2,2-Dichloropropane	ND	100	1.00	
1,1-Dichloropropene	ND	100	1.00	
c-1,3-Dichloropropene	ND	50	1.00	
t-1,3-Dichloropropene	ND	50	1.00	
Ethylbenzene	ND	100	1.00	
2-Hexanone	ND	1000	1.00	
Isopropylbenzene	ND	100	1.00	
p-Isopropyltoluene	ND	100	1.00	
Methylene Chloride	ND	1000	1.00	
4-Methyl-2-Pentanone	ND	1000	1.00	
Naphthalene	ND	1000	1.00	
n-Propylbenzene	ND	100	1.00	
Styrene	ND	100	1.00	
1,1,1,2-Tetrachloroethane	ND	200	1.00	
1,1,2,2-Tetrachloroethane	ND	100	1.00	
Tetrachloroethene	ND	100	1.00	
Toluene	ND	100	1.00	
1,2,3-Trichlorobenzene	ND	100	1.00	
1,2,4-Trichlorobenzene	ND	100	1.00	
1,1,1-Trichloroethane	ND	100	1.00	
1,1,2-Trichloroethane	ND	100	1.00	
Trichloroethene	ND	100	1.00	
Trichlorofluoromethane	ND	1000	1.00	
1,2,3-Trichloropropane	ND	500	1.00	
1,2,4-Trimethylbenzene	ND	100	1.00	
1,3,5-Trimethylbenzene	ND	100	1.00	
Vinyl Acetate	ND	1000	1.00	
Vinyl Chloride	ND	50	1.00	
p/m-Xylene	ND	200	1.00	
o-Xylene	ND	100	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	100	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	94	80-120	
Dibromofluoromethane	96	80-126	
1,2-Dichloroethane-d4	100	80-134	
Toluene-d8	103	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

Group Delta Consultants, Inc.
 370 Amapola Avenue, Suite 212
 Torrance, CA 90501-7243

Date Received: 04/03/19
 Work Order: 19-04-0223
 Preparation: EPA 1311
 Method: EPA 8260B
 Units: ug/L

Project: Yucca / LA1301B

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SW-N-040219	19-04-0223-3-A	04/02/19 10:30	Solid	GC/MS QQ	04/03/19	04/05/19 02:34	190404L038

Comment(s): - The analysis was performed on a TCLP extract of the sample.

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Acetone	ND	2000	1.00	
Benzene	ND	100	1.00	
Bromobenzene	ND	100	1.00	
Bromochloromethane	ND	200	1.00	
Bromodichloromethane	ND	100	1.00	
Bromoform	ND	500	1.00	
Bromomethane	ND	5000	1.00	
2-Butanone	ND	2000	1.00	
n-Butylbenzene	ND	100	1.00	
sec-Butylbenzene	ND	100	1.00	
tert-Butylbenzene	ND	100	1.00	
Carbon Disulfide	ND	1000	1.00	
Carbon Tetrachloride	ND	50	1.00	
Chlorobenzene	ND	100	1.00	
Chloroethane	ND	300	1.00	
Chloroform	ND	100	1.00	
Chloromethane	ND	1000	1.00	
2-Chlorotoluene	ND	100	1.00	
4-Chlorotoluene	ND	100	1.00	
Dibromochloromethane	ND	200	1.00	
1,2-Dibromo-3-Chloropropane	ND	500	1.00	
1,2-Dibromoethane	ND	100	1.00	
Dibromomethane	ND	100	1.00	
1,2-Dichlorobenzene	ND	100	1.00	
1,3-Dichlorobenzene	ND	100	1.00	
1,4-Dichlorobenzene	ND	100	1.00	
Dichlorodifluoromethane	ND	500	1.00	
1,1-Dichloroethane	ND	100	1.00	
1,2-Dichloroethane	ND	50	1.00	
1,1-Dichloroethene	ND	100	1.00	
c-1,2-Dichloroethene	ND	100	1.00	
t-1,2-Dichloroethene	ND	100	1.00	
1,2-Dichloropropane	ND	100	1.00	
1,3-Dichloropropane	ND	100	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

Group Delta Consultants, Inc.
 370 Amapola Avenue, Suite 212
 Torrance, CA 90501-7243

Date Received: 04/03/19
 Work Order: 19-04-0223
 Preparation: EPA 1311
 Method: EPA 8260B
 Units: ug/L

Project: Yucca / LA1301B

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
2,2-Dichloropropane	ND	100	1.00	
1,1-Dichloropropene	ND	100	1.00	
c-1,3-Dichloropropene	ND	50	1.00	
t-1,3-Dichloropropene	ND	50	1.00	
Ethylbenzene	ND	100	1.00	
2-Hexanone	ND	1000	1.00	
Isopropylbenzene	ND	100	1.00	
p-Isopropyltoluene	ND	100	1.00	
Methylene Chloride	ND	1000	1.00	
4-Methyl-2-Pentanone	ND	1000	1.00	
Naphthalene	ND	1000	1.00	
n-Propylbenzene	ND	100	1.00	
Styrene	ND	100	1.00	
1,1,1,2-Tetrachloroethane	ND	200	1.00	
1,1,2,2-Tetrachloroethane	ND	100	1.00	
Tetrachloroethene	ND	100	1.00	
Toluene	ND	100	1.00	
1,2,3-Trichlorobenzene	ND	100	1.00	
1,2,4-Trichlorobenzene	ND	100	1.00	
1,1,1-Trichloroethane	ND	100	1.00	
1,1,2-Trichloroethane	ND	100	1.00	
Trichloroethene	ND	100	1.00	
Trichlorofluoromethane	ND	1000	1.00	
1,2,3-Trichloropropane	ND	500	1.00	
1,2,4-Trimethylbenzene	ND	100	1.00	
1,3,5-Trimethylbenzene	ND	100	1.00	
Vinyl Acetate	ND	1000	1.00	
Vinyl Chloride	ND	50	1.00	
p/m-Xylene	ND	200	1.00	
o-Xylene	ND	100	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	100	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	94	80-120	
Dibromofluoromethane	96	80-126	
1,2-Dichloroethane-d4	101	80-134	
Toluene-d8	102	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0223
Preparation: EPA 1311
Method: EPA 8260B
Units: ug/L

Project: Yucca / LA1301B

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
PB-CENTER-040219	19-04-0223-4-A	04/02/19 10:40	Solid	GC/MS QQ	04/03/19	04/05/19 03:03	190404L038

Comment(s): - The analysis was performed on a TCLP extract of the sample.

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Acetone	ND	2000	1.00	
Benzene	ND	100	1.00	
Bromobenzene	ND	100	1.00	
Bromochloromethane	ND	200	1.00	
Bromodichloromethane	ND	100	1.00	
Bromoform	ND	500	1.00	
Bromomethane	ND	5000	1.00	
2-Butanone	ND	2000	1.00	
n-Butylbenzene	ND	100	1.00	
sec-Butylbenzene	ND	100	1.00	
tert-Butylbenzene	ND	100	1.00	
Carbon Disulfide	ND	1000	1.00	
Carbon Tetrachloride	ND	50	1.00	
Chlorobenzene	ND	100	1.00	
Chloroethane	ND	300	1.00	
Chloroform	ND	100	1.00	
Chloromethane	ND	1000	1.00	
2-Chlorotoluene	ND	100	1.00	
4-Chlorotoluene	ND	100	1.00	
Dibromochloromethane	ND	200	1.00	
1,2-Dibromo-3-Chloropropane	ND	500	1.00	
1,2-Dibromoethane	ND	100	1.00	
Dibromomethane	ND	100	1.00	
1,2-Dichlorobenzene	ND	100	1.00	
1,3-Dichlorobenzene	ND	100	1.00	
1,4-Dichlorobenzene	ND	100	1.00	
Dichlorodifluoromethane	ND	500	1.00	
1,1-Dichloroethane	ND	100	1.00	
1,2-Dichloroethane	ND	50	1.00	
1,1-Dichloroethene	ND	100	1.00	
c-1,2-Dichloroethene	ND	100	1.00	
t-1,2-Dichloroethene	ND	100	1.00	
1,2-Dichloropropane	ND	100	1.00	
1,3-Dichloropropane	ND	100	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0223
Preparation: EPA 1311
Method: EPA 8260B
Units: ug/L

Project: Yucca / LA1301B

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
2,2-Dichloropropane	ND	100	1.00	
1,1-Dichloropropene	ND	100	1.00	
c-1,3-Dichloropropene	ND	50	1.00	
t-1,3-Dichloropropene	ND	50	1.00	
Ethylbenzene	ND	100	1.00	
2-Hexanone	ND	1000	1.00	
Isopropylbenzene	ND	100	1.00	
p-Isopropyltoluene	ND	100	1.00	
Methylene Chloride	ND	1000	1.00	
4-Methyl-2-Pentanone	ND	1000	1.00	
Naphthalene	ND	1000	1.00	
n-Propylbenzene	ND	100	1.00	
Styrene	ND	100	1.00	
1,1,1,2-Tetrachloroethane	ND	200	1.00	
1,1,2,2-Tetrachloroethane	ND	100	1.00	
Tetrachloroethene	ND	100	1.00	
Toluene	ND	100	1.00	
1,2,3-Trichlorobenzene	ND	100	1.00	
1,2,4-Trichlorobenzene	ND	100	1.00	
1,1,1-Trichloroethane	ND	100	1.00	
1,1,2-Trichloroethane	ND	100	1.00	
Trichloroethene	ND	100	1.00	
Trichlorofluoromethane	ND	1000	1.00	
1,2,3-Trichloropropane	ND	500	1.00	
1,2,4-Trimethylbenzene	ND	100	1.00	
1,3,5-Trimethylbenzene	ND	100	1.00	
Vinyl Acetate	ND	1000	1.00	
Vinyl Chloride	ND	50	1.00	
p/m-Xylene	ND	200	1.00	
o-Xylene	ND	100	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	100	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	94	80-120	
Dibromofluoromethane	96	80-126	
1,2-Dichloroethane-d4	102	80-134	
Toluene-d8	102	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



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Analytical Report

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0223
Preparation: EPA 1311
Method: EPA 8260B
Units: ug/L

Project: Yucca / LA1301B

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-14-519-1768	N/A	Aqueous	GC/MS QQ	04/03/19	04/04/19 23:13	190404L038

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	2000	1.00	
Benzene	ND	100	1.00	
Bromobenzene	ND	100	1.00	
Bromochloromethane	ND	200	1.00	
Bromodichloromethane	ND	100	1.00	
Bromoform	ND	500	1.00	
Bromomethane	ND	5000	1.00	
2-Butanone	ND	2000	1.00	
n-Butylbenzene	ND	100	1.00	
sec-Butylbenzene	ND	100	1.00	
tert-Butylbenzene	ND	100	1.00	
Carbon Disulfide	ND	1000	1.00	
Carbon Tetrachloride	ND	50	1.00	
Chlorobenzene	ND	100	1.00	
Chloroethane	ND	300	1.00	
Chloroform	ND	100	1.00	
Chloromethane	ND	1000	1.00	
2-Chlorotoluene	ND	100	1.00	
4-Chlorotoluene	ND	100	1.00	
Dibromochloromethane	ND	200	1.00	
1,2-Dibromo-3-Chloropropane	ND	500	1.00	
1,2-Dibromoethane	ND	100	1.00	
Dibromomethane	ND	100	1.00	
1,2-Dichlorobenzene	ND	100	1.00	
1,3-Dichlorobenzene	ND	100	1.00	
1,4-Dichlorobenzene	ND	100	1.00	
Dichlorodifluoromethane	ND	500	1.00	
1,1-Dichloroethane	ND	100	1.00	
1,2-Dichloroethane	ND	50	1.00	
1,1-Dichloroethene	ND	100	1.00	
c-1,2-Dichloroethene	ND	100	1.00	
t-1,2-Dichloroethene	ND	100	1.00	
1,2-Dichloropropane	ND	100	1.00	
1,3-Dichloropropane	ND	100	1.00	
2,2-Dichloropropane	ND	100	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0223
Preparation: EPA 1311
Method: EPA 8260B
Units: ug/L

Project: Yucca / LA1301B

Page 8 of 8

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
1,1-Dichloropropene	ND	100	1.00	
c-1,3-Dichloropropene	ND	50	1.00	
t-1,3-Dichloropropene	ND	50	1.00	
Ethylbenzene	ND	100	1.00	
2-Hexanone	ND	1000	1.00	
Isopropylbenzene	ND	100	1.00	
p-Isopropyltoluene	ND	100	1.00	
Methylene Chloride	ND	1000	1.00	
4-Methyl-2-Pentanone	ND	1000	1.00	
Naphthalene	ND	1000	1.00	
n-Propylbenzene	ND	100	1.00	
Styrene	ND	100	1.00	
1,1,1,2-Tetrachloroethane	ND	200	1.00	
1,1,2,2-Tetrachloroethane	ND	100	1.00	
Tetrachloroethene	ND	100	1.00	
Toluene	ND	100	1.00	
1,2,3-Trichlorobenzene	ND	100	1.00	
1,2,4-Trichlorobenzene	ND	100	1.00	
1,1,1-Trichloroethane	ND	100	1.00	
1,1,2-Trichloroethane	ND	100	1.00	
Trichloroethene	ND	100	1.00	
Trichlorofluoromethane	ND	1000	1.00	
1,2,3-Trichloropropane	ND	500	1.00	
1,2,4-Trimethylbenzene	ND	100	1.00	
1,3,5-Trimethylbenzene	ND	100	1.00	
Vinyl Acetate	ND	1000	1.00	
Vinyl Chloride	ND	50	1.00	
p/m-Xylene	ND	200	1.00	
o-Xylene	ND	100	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	100	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	95	80-120	
Dibromofluoromethane	95	80-126	
1,2-Dichloroethane-d4	100	80-134	
Toluene-d8	103	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Quality Control - Spike/Spike Duplicate

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0223
Preparation: EPA 3550B
Method: EPA 8015B (M)

Project: Yucca / LA1301B

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
19-03-2270-9	Sample	Solid	GC 50	04/03/19	04/03/19 23:18	190403S04
19-03-2270-9	Matrix Spike	Solid	GC 50	04/03/19	04/03/19 20:19	190403S04
19-03-2270-9	Matrix Spike Duplicate	Solid	GC 50	04/03/19	04/03/19 20:39	190403S04

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	463.7	116	457.6	114	64-130	1	0-15	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0223
Preparation: EPA 3050B
Method: EPA 6010B

Project: Yucca / LA1301B

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
19-04-0150-1	Sample	Solid	ICP 8300	04/02/19	04/03/19 14:48	190402S04
19-04-0150-1	Matrix Spike	Solid	ICP 8300	04/02/19	04/03/19 14:50	190402S04
19-04-0150-1	Matrix Spike Duplicate	Solid	ICP 8300	04/02/19	04/03/19 14:52	190402S04

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Antimony	ND	25.00	6.929	28	4.246	17	50-115	48	0-20	3,4
Arsenic	1.062	25.00	28.94	111	25.31	97	75-125	13	0-20	
Barium	56.96	25.00	95.08	152	93.45	146	75-125	2	0-20	3
Beryllium	0.7540	25.00	28.72	112	26.46	103	75-125	8	0-20	
Cadmium	ND	25.00	28.66	115	26.33	105	75-125	8	0-20	
Chromium	5.050	25.00	33.67	114	32.71	111	75-125	3	0-20	
Cobalt	3.417	25.00	29.99	106	27.79	97	75-125	8	0-20	
Copper	3.332	25.00	30.99	111	29.01	103	75-125	7	0-20	
Lead	14.64	25.00	38.97	97	35.54	84	75-125	9	0-20	
Molybdenum	ND	25.00	25.70	103	22.38	90	75-125	14	0-20	
Nickel	2.787	25.00	30.65	111	28.31	102	75-125	8	0-20	
Selenium	ND	25.00	25.53	102	23.05	92	75-125	10	0-20	
Silver	ND	12.50	13.79	110	12.74	102	75-125	8	0-20	
Thallium	ND	25.00	27.49	110	25.00	100	75-125	9	0-20	
Vanadium	17.20	25.00	43.60	106	45.10	112	75-125	3	0-20	
Zinc	16.03	25.00	45.63	118	42.00	104	75-125	8	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0223
Preparation: EPA 1311
Method: EPA 6010B

Project: Yucca / LA1301B

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
19-03-1306-17	Sample	Solid	ICP 8300	04/04/19	04/05/19 16:24	190405SA1
19-03-1306-17	Matrix Spike	Solid	ICP 8300	04/04/19	04/05/19 16:25	190405SA1
19-03-1306-17	Matrix Spike Duplicate	Solid	ICP 8300	04/04/19	04/05/19 16:27	190405SA1

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Lead	ND	5.000	4.908	98	5.188	104	84-120	6	0-7	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0223
Preparation: EPA 7471A Total
Method: EPA 7471A

Project: Yucca / LA1301B

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
19-04-0190-3	Sample	Solid	Mercury 07	04/04/19	04/04/19 12:01	190404S01
19-04-0190-3	Matrix Spike	Solid	Mercury 07	04/04/19	04/04/19 12:03	190404S01
19-04-0190-3	Matrix Spike Duplicate	Solid	Mercury 07	04/04/19	04/04/19 12:05	190404S01

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Mercury	ND	0.8350	0.7589	91	0.7848	94	71-137	3	0-14	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0223
Preparation: EPA 3545
Method: EPA 8082

Project: Yucca / LA1301B

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
19-04-0094-1	Sample	Solid	GC 58	04/03/19	04/04/19 07:46	190403S06
19-04-0094-1	Matrix Spike	Solid	GC 58	04/03/19	04/04/19 07:10	190403S06
19-04-0094-1	Matrix Spike Duplicate	Solid	GC 58	04/03/19	04/04/19 07:28	190403S06

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Aroclor-1016	ND	100.0	92.50	92	89.00	89	50-135	4	0-20	
Aroclor-1260	ND	100.0	91.00	91	92.00	92	50-135	1	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0223
Preparation: EPA 1311
Method: EPA 8260B

Project: Yucca / LA1301B

Page 6 of 6

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
19-04-0158-1	Sample	Solid	GC/MS QQ	04/03/19	04/04/19 23:42	190404S010
19-04-0158-1	Matrix Spike	Solid	GC/MS QQ	04/03/19	04/05/19 00:11	190404S010
19-04-0158-1	Matrix Spike Duplicate	Solid	GC/MS QQ	04/03/19	04/05/19 00:39	190404S010

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Benzene	ND	5000	4604	92	4635	93	78-120	1	0-20	
Carbon Tetrachloride	ND	5000	4174	83	4373	87	67-139	5	0-20	
Chlorobenzene	ND	5000	4665	93	4757	95	80-120	2	0-20	
1,2-Dibromoethane	ND	5000	4657	93	4794	96	80-123	3	0-20	
1,2-Dichlorobenzene	ND	5000	4563	91	4660	93	76-120	2	0-20	
1,2-Dichloroethane	ND	5000	4991	100	5135	103	76-130	3	0-20	
1,1-Dichloroethene	ND	5000	4522	90	4556	91	70-130	1	0-27	
Ethylbenzene	ND	5000	4691	94	4789	96	73-127	2	0-20	
Toluene	ND	5000	4908	98	4977	100	72-126	1	0-20	
Trichloroethene	ND	5000	4634	93	4663	93	74-122	1	0-20	
Vinyl Chloride	ND	5000	5219	104	5059	101	65-131	3	0-24	
p/m-Xylene	ND	10000	9529	95	9705	97	70-130	2	0-30	
o-Xylene	ND	5000	4786	96	4926	99	70-130	3	0-30	
Methyl-t-Butyl Ether (MTBE)	ND	5000	3615	72	3745	75	69-123	4	0-20	

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RPD: Relative Percent Difference. CL: Control Limits

Quality Control - LCS

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0223
Preparation: EPA 3550B
Method: EPA 8015B (M)

Project: Yucca / LA1301B

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-15-490-3548	LCS	Solid	GC 50	04/03/19	04/03/19 19:59	190403B04
<u>Parameter</u>		<u>Spike Added</u>	<u>Conc. Recovered</u>	<u>LCS %Rec.</u>	<u>%Rec. CL</u>	<u>Qualifiers</u>
TPH as Diesel		400.0	453.6	113	75-123	



Calscience

Quality Control - LCS/LCSD

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0223
Preparation: EPA 3050B
Method: EPA 6010B

Project: Yucca / LA1301B

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Quality Control Sample ID	Type	Matrix		Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
097-01-002-27722	LCS	Solid		ICP 8300	04/02/19	04/03/19 14:45	190402L04			
097-01-002-27722	LCSD	Solid		ICP 8300	04/02/19	04/03/19 14:46	190402L04			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Antimony	25.00	25.15	101	24.39	98	80-120	73-127	3	0-20	
Arsenic	25.00	24.40	98	24.40	98	80-120	73-127	0	0-20	
Barium	25.00	26.30	105	26.18	105	80-120	73-127	0	0-20	
Beryllium	25.00	23.42	94	23.33	93	80-120	73-127	0	0-20	
Cadmium	25.00	25.44	102	25.39	102	80-120	73-127	0	0-20	
Chromium	25.00	25.00	100	24.73	99	80-120	73-127	1	0-20	
Cobalt	25.00	25.75	103	25.60	102	80-120	73-127	1	0-20	
Copper	25.00	24.46	98	24.39	98	80-120	73-127	0	0-20	
Lead	25.00	26.43	106	25.86	103	80-120	73-127	2	0-20	
Molybdenum	25.00	24.72	99	24.24	97	80-120	73-127	2	0-20	
Nickel	25.00	25.83	103	25.70	103	80-120	73-127	1	0-20	
Selenium	25.00	24.13	97	23.44	94	80-120	73-127	3	0-20	
Silver	12.50	12.01	96	11.92	95	80-120	73-127	1	0-20	
Thallium	25.00	25.67	103	24.57	98	80-120	73-127	4	0-20	
Vanadium	25.00	23.72	95	23.56	94	80-120	73-127	1	0-20	
Zinc	25.00	25.47	102	24.98	100	80-120	73-127	2	0-20	

Total number of LCS compounds: 16

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0223
Preparation: EPA 1311
Method: EPA 6010B

Project: Yucca / LA1301B

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-14-021-2913	LCS	Aqueous	ICP 8300	04/03/19	04/05/19 16:21	190405LA1A
099-14-021-2913	LCSD	Aqueous	ICP 8300	04/03/19	04/05/19 16:22	190405LA1A

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Lead	5.000	4.956	99	5.019	100	80-120	1	0-20	

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RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0223
Preparation: EPA 7471A Total
Method: EPA 7471A

Project: Yucca / LA1301B

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-16-272-4519	LCS	Solid	Mercury 07	04/04/19	04/04/19 11:59	190404L01

<u>Parameter</u>	<u>Spike Added</u>	<u>Conc. Recovered</u>	<u>LCS %Rec.</u>	<u>%Rec. CL</u>	<u>Qualifiers</u>
Mercury	0.8350	0.7234	87	85-121	

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Quality Control - LCS

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0223
Preparation: EPA 3545
Method: EPA 8082

Project: Yucca / LA1301B

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-12-535-5150	LCS	Solid	GC 58	04/03/19	04/04/19 06:52	190403L06
<u>Parameter</u>		<u>Spike Added</u>	<u>Conc. Recovered</u>	<u>LCS %Rec.</u>	<u>%Rec. CL</u>	<u>Qualifiers</u>
Aroclor-1016		100.0	92.50	92	50-135	
Aroclor-1260		100.0	87.00	87	50-135	

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Calscience

Quality Control - LCS/LCSD

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0223
Preparation: EPA 5030C
Method: EPA 8260B

Project: Yucca / LA1301B

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-14-001-28429	LCS	Aqueous	GC/MS XX	04/03/19	04/03/19 16:34	190403L029
099-14-001-28429	LCSD	Aqueous	GC/MS XX	04/03/19	04/03/19 17:03	190403L029

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Acetone	50.00	42.89	86	43.45	87	53-137	39-151	1	0-21	
Benzene	50.00	48.75	98	49.95	100	79-121	72-128	2	0-20	
Bromobenzene	50.00	56.18	112	56.79	114	80-120	73-127	1	0-20	
Bromochloromethane	50.00	48.84	98	49.85	100	80-122	73-129	2	0-20	
Bromodichloromethane	50.00	56.17	112	56.24	112	80-124	73-131	0	0-20	
Bromoform	50.00	52.92	106	54.55	109	73-127	64-136	3	0-20	
Bromomethane	50.00	68.61	137	65.52	131	50-150	33-167	5	0-26	
2-Butanone	50.00	48.06	96	51.00	102	60-126	49-137	6	0-20	
n-Butylbenzene	50.00	59.10	118	56.48	113	72-138	61-149	5	0-20	
sec-Butylbenzene	50.00	57.13	114	56.19	112	77-131	68-140	2	0-20	
tert-Butylbenzene	50.00	60.82	122	60.81	122	80-125	72-132	0	0-20	
Carbon Disulfide	50.00	37.49	75	38.04	76	50-150	33-167	1	0-22	
Carbon Tetrachloride	50.00	53.25	107	54.07	108	65-143	52-156	2	0-20	
Chlorobenzene	50.00	51.87	104	51.74	103	80-120	73-127	0	0-20	
Chloroethane	50.00	51.34	103	54.62	109	62-128	51-139	6	0-20	
Chloroform	50.00	50.03	100	51.33	103	80-120	73-127	3	0-20	
Chloromethane	50.00	49.17	98	51.28	103	43-133	28-148	4	0-20	
2-Chlorotoluene	50.00	58.31	117	56.88	114	80-121	73-128	2	0-20	
4-Chlorotoluene	50.00	56.74	113	55.83	112	80-120	73-127	2	0-20	
Dibromochloromethane	50.00	55.78	112	55.50	111	80-123	73-130	1	0-20	
1,2-Dibromo-3-Chloropropane	50.00	55.25	110	60.82	122	66-126	56-136	10	0-20	
1,2-Dibromoethane	50.00	52.10	104	52.88	106	80-120	73-127	1	0-20	
Dibromomethane	50.00	52.16	104	52.30	105	80-120	73-127	0	0-20	
1,2-Dichlorobenzene	50.00	54.13	108	53.46	107	80-120	73-127	1	0-20	
1,3-Dichlorobenzene	50.00	55.12	110	53.89	108	80-120	73-127	2	0-20	
1,4-Dichlorobenzene	50.00	54.22	108	53.11	106	80-120	73-127	2	0-20	
Dichlorodifluoromethane	50.00	63.37	127	62.90	126	50-150	33-167	1	0-30	
1,1-Dichloroethane	50.00	41.09	82	42.60	85	72-126	63-135	4	0-20	
1,2-Dichloroethane	50.00	56.75	113	56.60	113	76-120	69-127	0	0-20	
1,1-Dichloroethene	50.00	42.66	85	43.79	88	66-132	55-143	3	0-20	
c-1,2-Dichloroethene	50.00	49.10	98	50.74	101	78-120	71-127	3	0-20	
t-1,2-Dichloroethene	50.00	44.70	89	46.09	92	66-132	55-143	3	0-20	
1,2-Dichloropropane	50.00	49.52	99	50.31	101	80-120	73-127	2	0-20	
1,3-Dichloropropane	50.00	50.06	100	50.81	102	80-120	73-127	1	0-20	
2,2-Dichloropropane	50.00	60.32	121	60.75	121	50-150	33-167	1	0-20	
1,1-Dichloropropene	50.00	50.06	100	50.75	102	75-123	67-131	1	0-20	

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0223
Preparation: EPA 5030C
Method: EPA 8260B

Project: Yucca / LA1301B

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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	56.32	113	56.56	113	77-131	68-140	0	0-20	
t-1,3-Dichloropropene	50.00	51.98	104	52.51	105	76-136	66-146	1	0-20	
Ethylbenzene	50.00	56.36	113	56.49	113	80-120	73-127	0	0-20	
2-Hexanone	50.00	49.03	98	55.25	111	63-123	53-133	12	0-20	
Isopropylbenzene	50.00	59.70	119	59.72	119	80-128	72-136	0	0-20	
p-Isopropyltoluene	50.00	59.28	119	58.11	116	73-133	63-143	2	0-20	
Methylene Chloride	50.00	44.43	89	44.94	90	61-133	49-145	1	0-27	
4-Methyl-2-Pentanone	50.00	52.31	105	55.45	111	65-125	55-135	6	0-20	
Naphthalene	50.00	58.06	116	59.22	118	69-129	59-139	2	0-20	
n-Propylbenzene	50.00	57.44	115	56.25	113	80-128	72-136	2	0-20	
Styrene	50.00	53.27	107	54.01	108	80-126	72-134	1	0-20	
1,1,1,2-Tetrachloroethane	50.00	55.86	112	56.56	113	80-129	72-137	1	0-20	
1,1,2,2-Tetrachloroethane	50.00	48.37	97	50.93	102	74-122	66-130	5	0-20	
Tetrachloroethene	50.00	38.00	76	39.10	78	55-139	41-153	3	0-23	
Toluene	50.00	51.53	103	53.28	107	80-120	73-127	3	0-20	
1,2,3-Trichlorobenzene	50.00	61.26	123	59.31	119	72-132	62-142	3	0-20	
1,2,4-Trichlorobenzene	50.00	65.34	131	63.06	126	74-134	64-144	4	0-20	
1,1,1-Trichloroethane	50.00	53.06	106	55.03	110	76-124	68-132	4	0-20	
1,1,2-Trichloro-1,2,2-Trifluoroethane	50.00	43.94	88	42.32	85	54-150	38-166	4	0-30	
1,1,2-Trichloroethane	50.00	49.28	99	49.78	100	80-120	73-127	1	0-20	
Trichloroethene	50.00	49.83	100	50.17	100	79-121	72-128	1	0-20	
Trichlorofluoromethane	50.00	58.80	118	59.00	118	72-132	62-142	0	0-20	
1,2,3-Trichloropropane	50.00	54.13	108	56.98	114	75-123	67-131	5	0-20	
1,2,4-Trimethylbenzene	50.00	58.01	116	57.44	115	74-128	65-137	1	0-20	
1,3,5-Trimethylbenzene	50.00	60.60	121	59.79	120	77-131	68-140	1	0-20	
Vinyl Acetate	50.00	70.88	142	72.51	145	50-150	33-167	2	0-20	
Vinyl Chloride	50.00	51.02	102	54.32	109	63-129	52-140	6	0-20	
p/m-Xylene	100.0	121.0	121	120.7	121	80-122	73-129	0	0-20	
o-Xylene	50.00	55.47	111	55.62	111	80-128	72-136	0	0-20	
Methyl-t-Butyl Ether (MTBE)	50.00	43.43	87	44.70	89	69-123	60-132	3	0-20	

Total number of LCS compounds: 66

Total number of ME compounds: 0

Total number of ME compounds allowed: 3

LCS ME CL validation result: Pass

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0223
Preparation: EPA 5035
Method: EPA 8260B

Project: Yucca / LA1301B

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Quality Control Sample ID	Type	Matrix		Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
095-01-025-30886	LCS	Solid		GC/MS R	04/03/19	04/03/19 10:28	190403L027			
095-01-025-30886	LCSD	Solid		GC/MS R	04/03/19	04/03/19 10:54	190403L027			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Benzene	50.00	46.03	92	48.94	98	80-120	73-127	6	0-20	
Carbon Tetrachloride	50.00	48.28	97	50.81	102	65-137	53-149	5	0-20	
Chlorobenzene	50.00	47.68	95	51.26	103	80-120	73-127	7	0-20	
1,2-Dibromoethane	50.00	48.33	97	51.64	103	80-120	73-127	7	0-20	
1,2-Dichlorobenzene	50.00	50.84	102	54.54	109	80-120	73-127	7	0-20	
1,2-Dichloroethane	50.00	43.41	87	47.20	94	80-120	73-127	8	0-20	
1,1-Dichloroethene	50.00	50.35	101	52.58	105	68-128	58-138	4	0-20	
Ethylbenzene	50.00	51.10	102	54.32	109	80-120	73-127	6	0-20	
Toluene	50.00	47.06	94	50.14	100	80-120	73-127	6	0-20	
Trichloroethene	50.00	46.18	92	48.32	97	80-120	73-127	5	0-20	
Vinyl Chloride	50.00	51.55	103	48.93	98	67-127	57-137	5	0-20	
p/m-Xylene	100.0	103.8	104	110.5	111	75-125	67-133	6	0-25	
o-Xylene	50.00	53.04	106	56.41	113	75-125	67-133	6	0-25	
Methyl-t-Butyl Ether (MTBE)	50.00	50.64	101	53.25	106	70-124	61-133	5	0-20	
Tert-Butyl Alcohol (TBA)	250.0	256.6	103	274.0	110	73-121	65-129	7	0-20	
Diisopropyl Ether (DIPE)	50.00	49.27	99	51.88	104	69-129	59-139	5	0-20	
Ethyl-t-Butyl Ether (ETBE)	50.00	55.14	110	57.34	115	70-124	61-133	4	0-20	
Tert-Amyl-Methyl Ether (TAME)	50.00	53.28	107	56.14	112	74-122	66-130	5	0-20	
Ethanol	500.0	455.7	91	492.9	99	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

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0223
Preparation: EPA 5035
Method: EPA 8260B

Project: Yucca / LA1301B

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Quality Control Sample ID	Type	Matrix		Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
095-01-025-30890	LCS	Solid		GC/MS R	04/04/19	04/04/19 11:20	190404L020			
095-01-025-30890	LCSD	Solid		GC/MS R	04/04/19	04/04/19 11:47	190404L020			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Benzene	50.00	51.28	103	51.42	103	80-120	73-127	0	0-20	
Carbon Tetrachloride	50.00	54.30	109	54.34	109	65-137	53-149	0	0-20	
Chlorobenzene	50.00	50.73	101	50.78	102	80-120	73-127	0	0-20	
1,2-Dibromoethane	50.00	50.87	102	51.37	103	80-120	73-127	1	0-20	
1,2-Dichlorobenzene	50.00	53.11	106	53.82	108	80-120	73-127	1	0-20	
1,2-Dichloroethane	50.00	47.28	95	47.71	95	80-120	73-127	1	0-20	
1,1-Dichloroethene	50.00	62.28	125	62.83	126	68-128	58-138	1	0-20	
Ethylbenzene	50.00	54.01	108	53.90	108	80-120	73-127	0	0-20	
Toluene	50.00	50.27	101	50.30	101	80-120	73-127	0	0-20	
Trichloroethene	50.00	49.83	100	50.17	100	80-120	73-127	1	0-20	
Vinyl Chloride	50.00	51.24	102	53.31	107	67-127	57-137	4	0-20	
p/m-Xylene	100.0	109.9	110	109.1	109	75-125	67-133	1	0-25	
o-Xylene	50.00	55.79	112	55.70	111	75-125	67-133	0	0-25	
Methyl-t-Butyl Ether (MTBE)	50.00	51.65	103	52.20	104	70-124	61-133	1	0-20	
Tert-Butyl Alcohol (TBA)	250.0	252.0	101	264.4	106	73-121	65-129	5	0-20	
Diisopropyl Ether (DIPE)	50.00	52.39	105	53.29	107	69-129	59-139	2	0-20	
Ethyl-t-Butyl Ether (ETBE)	50.00	54.96	110	55.52	111	70-124	61-133	1	0-20	
Tert-Amyl-Methyl Ether (TAME)	50.00	52.11	104	51.85	104	74-122	66-130	1	0-20	
Ethanol	500.0	487.5	97	545.1	109	51-135	37-149	11	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

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

Quality Control - LCS

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0223
Preparation: EPA 5030C
Method: EPA 8260B

Project: Yucca / LA1301B

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number	
099-14-519-1768	LCS	Aqueous	GC/MS QQ	04/04/19	04/04/19 21:47	190404L038	
Parameter		Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	ME CL	Qualifiers
Benzene		50.00	44.04	88	80-120	73-127	
Carbon Tetrachloride		50.00	40.98	82	66-138	54-150	
Chlorobenzene		50.00	44.71	89	80-120	73-127	
1,2-Dibromoethane		50.00	45.38	91	80-120	73-127	
1,2-Dichlorobenzene		50.00	43.88	88	80-120	73-127	
1,2-Dichloroethane		50.00	48.28	97	80-129	72-137	
1,1-Dichloroethene		50.00	44.45	89	71-131	61-141	
Ethylbenzene		50.00	44.97	90	80-123	73-130	
Toluene		50.00	46.78	94	79-121	72-128	
Trichloroethene		50.00	44.70	89	80-120	73-127	
Vinyl Chloride		50.00	52.69	105	70-136	59-147	
p/m-Xylene		100.0	91.53	92	75-125	67-133	
o-Xylene		50.00	46.06	92	75-125	67-133	
Methyl-t-Butyl Ether (MTBE)		50.00	37.10	74	72-126	63-135	

Total number of LCS compounds: 14

Total number of ME compounds: 0

Total number of ME compounds allowed: 1

LCS ME CL validation result: Pass

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Sample Analysis Summary Report

Work Order: 19-04-0223

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<u>Method</u>	<u>Extraction</u>	<u>Chemist ID</u>	<u>Instrument</u>	<u>Analytical Location</u>
EPA 6010B	EPA 3050B	1080	ICP 8300	1
EPA 6010B	EPA 1311	771	ICP 8300	1
EPA 7471A	EPA 7471A Total	868	Mercury 07	1
EPA 8015B (M)	EPA 3550B	972	GC 50	1
EPA 8082	EPA 3545	669	GC 58	1
EPA 8260B	EPA 5035	823	GC/MS R	2
EPA 8260B	EPA 1311	486	GC/MS QQ	2
EPA 8260B	EPA 5030C	1189	GC/MS XX	2

Location 1: 7440 Lincoln Way, Garden Grove, CA 92841

Location 2: 7445 Lampson Avenue, Garden Grove, CA 92841

Glossary of Terms and Qualifiers

Work Order: 19-04-0223

Page 1 of 1

<u>Qualifiers</u>	<u>Definition</u>
*	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.

SAMPLE RECEIPT CHECKLIST

COOLER 1 OF 1

CLIENT: GROUP DELTA

DATE: 04/03/2019

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)

Thermometer ID: SC6 (CF: -0.2°C); Temperature (w/o CF): 3.8 (w/ CF): 3.6°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: 671

CUSTODY SEAL:

Cooler ☐ Present and Intact ☐ Present but Not Intact ☒ Not Present ☐ N/A Checked by: 671

Sample(s) ☐ Present and Intact ☐ Present but Not Intact ☒ Not Present ☐ N/A Checked by: 826

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: 181012A)

Aqueous: ☐ VOA ☒ VOAh ☐ VOAna₂ ☐ 100PJ ☐ 100PJna₂ ☐ 125AGB ☐ 125AGBh ☐ 125AGBp ☐ 125PB ☐ 125PBz₂na (pH__9)

☐ 250AGB ☐ 250CGB ☐ 250CGBs (pH__2) ☐ 250PB ☐ 250PBn (pH__2) ☐ 500AGB ☐ 500AGJ ☐ 500AGJs (pH__2) ☐ 500PB

☐ 1AGB ☐ 1AGBna₂ ☐ 1AGBs (pH__2) ☐ 1AGBs (O&G) ☐ 1PB ☐ 1PBna (pH__12) ☐ _____ ☐ _____

Solid: ☐ 4ozCGJ ☒ 8ozCGJ ☐ 16ozCGJ ☐ Sleeve (____) ☐ EnCores® (____) ☒ TerraCores® (6) ☐ _____ ☐ _____

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** = HNO₃, **na** = NaOH, **na₂** = Na₂S₂O₃, **p** = H₃PO₄, Labeled/Checked by: 826

s = H₂SO₄, **u** = ultra-pure, **x** = Na₂SO₃+NaHSO₄.H₂O, **z₂na** = Zn (CH₃CO₂)₂ + NaOH Reviewed by: 300



Supplemental Report 1

The original report has been revised/corrected.

**WORK ORDER NUMBER: 19-04-2258***The difference is service*

AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For**Client:** Group Delta Consultants, Inc.**Client Project Name:** 6334 Yucca St. / LA1301B**Attention:** Alycia McCord
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243*Vikas Patel*Approved for release on 06/03/2019 by:
Vikas Patel
Project Manager

ResultLink ▶

Email your PM ▶

Eurofins Calscience (Calscience) certifies that the test results provided in this report meet all NELAC Institute requirements for parameters for which accreditation is required or available. Any exceptions to NELAC Institute requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

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 Work Order Number: 19-04-2258

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Work Order Narrative

Work Order: 19-04-2258

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Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 04/29/19. They were assigned to Work Order 19-04-2258.

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:	Group Delta Consultants, Inc.	Work Order:	19-04-2258
	370 Amapola Avenue, Suite 212	Project Name:	6334 Yucca St. / LA1301B
	Torrance, CA 90501-7243	PO Number:	LA1301B
		Date/Time Received:	04/29/19 11:25
		Number of Containers:	2

Attn: Alycia McCord

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
SW-S-042919	19-04-2258-1	04/29/19 08:10	1	Solid
PB-Center-042919	19-04-2258-2	04/29/19 08:15	1	Solid


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Detections Summary

Client: Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Work Order: 19-04-2258
Project Name: 6334 Yucca St. / LA1301B
Received: 04/29/19

Attn: Alycia McCord

Page 1 of 1

Client SampleID

Analyte	Result	Qualifiers	RL	Units	Method	Extraction
SW-S-042919 (19-04-2258-1)						
Barium	61.1		0.510	mg/kg	EPA 6010B	EPA 3050B
Beryllium	0.387		0.255	mg/kg	EPA 6010B	EPA 3050B
Chromium	7.43		0.255	mg/kg	EPA 6010B	EPA 3050B
Cobalt	5.92		0.255	mg/kg	EPA 6010B	EPA 3050B
Copper	3.67		0.510	mg/kg	EPA 6010B	EPA 3050B
Lead	0.544		0.510	mg/kg	EPA 6010B	EPA 3050B
Nickel	6.56		0.255	mg/kg	EPA 6010B	EPA 3050B
Vanadium	18.4		0.255	mg/kg	EPA 6010B	EPA 3050B
Zinc	16.9		1.02	mg/kg	EPA 6010B	EPA 3050B
Mercury	0.175		0.0794	mg/kg	EPA 7471A	EPA 7471A Total
C21-C22	1.6	J	1.3*	mg/kg	EPA 8015B (M)	EPA 3550B
C23-C24	3.5	J	1.3*	mg/kg	EPA 8015B (M)	EPA 3550B
C25-C28	8.3		5.0	mg/kg	EPA 8015B (M)	EPA 3550B
C29-C32	7.3		5.0	mg/kg	EPA 8015B (M)	EPA 3550B
C33-C36	4.3	J	1.3*	mg/kg	EPA 8015B (M)	EPA 3550B
C37-C40	4.2	J	1.3*	mg/kg	EPA 8015B (M)	EPA 3550B
C6-C44 Total	29		5.0	mg/kg	EPA 8015B (M)	EPA 3550B
PB-Center-042919 (19-04-2258-2)						
Barium	37.7		0.526	mg/kg	EPA 6010B	EPA 3050B
Beryllium	0.335		0.263	mg/kg	EPA 6010B	EPA 3050B
Chromium	7.85		0.263	mg/kg	EPA 6010B	EPA 3050B
Cobalt	5.64		0.263	mg/kg	EPA 6010B	EPA 3050B
Copper	4.81		0.526	mg/kg	EPA 6010B	EPA 3050B
Molybdenum	0.331		0.263	mg/kg	EPA 6010B	EPA 3050B
Nickel	6.35		0.263	mg/kg	EPA 6010B	EPA 3050B
Vanadium	20.3		0.263	mg/kg	EPA 6010B	EPA 3050B
Zinc	19.2		1.05	mg/kg	EPA 6010B	EPA 3050B

Subcontracted analyses, if any, are not included in this summary.

* MDL is shown



Calscience

Analytical Report

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/29/19
Work Order: 19-04-2258
Preparation: EPA 3550B
Method: EPA 8015B (M)
Units: mg/kg

Project: 6334 Yucca St. / LA1301B

Page 1 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SW-S-042919	19-04-2258-1-A	04/29/19 08:10	Solid	GC 49	04/29/19	04/30/19 05:10	190429B02

Comment(s): - Results were evaluated to the MDL (DL), concentrations $\geq$ to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
C6	ND	5.0	1.3	1.00	
C7	ND	5.0	1.3	1.00	
C8	ND	5.0	1.3	1.00	
C9-C10	ND	5.0	1.3	1.00	
C11-C12	ND	5.0	1.3	1.00	
C13-C14	ND	5.0	1.3	1.00	
C15-C16	ND	5.0	1.3	1.00	
C17-C18	ND	5.0	1.3	1.00	
C19-C20	ND	5.0	1.3	1.00	
C21-C22	1.6	5.0	1.3	1.00	J
C23-C24	3.5	5.0	1.3	1.00	J
C25-C28	8.3	5.0	1.3	1.00	
C29-C32	7.3	5.0	1.3	1.00	
C33-C36	4.3	5.0	1.3	1.00	J
C37-C40	4.2	5.0	1.3	1.00	J
C41-C44	ND	5.0	1.3	1.00	
C6-C44 Total	29	5.0	1.3	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.



Calscience

Analytical Report

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/29/19
Work Order: 19-04-2258
Preparation: EPA 3550B
Method: EPA 8015B (M)
Units: mg/kg

Project: 6334 Yucca St. / LA1301B

Page 2 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
PB-Center-042919	19-04-2258-2-A	04/29/19 08:15	Solid	GC 49	04/29/19	04/30/19 05:31	190429B02

Comment(s): - Results were evaluated to the MDL (DL), concentrations $\geq$ to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
C6	ND	4.9	1.2	1.00	
C7	ND	4.9	1.2	1.00	
C8	ND	4.9	1.2	1.00	
C9-C10	ND	4.9	1.2	1.00	
C11-C12	ND	4.9	1.2	1.00	
C13-C14	ND	4.9	1.2	1.00	
C15-C16	ND	4.9	1.2	1.00	
C17-C18	ND	4.9	1.2	1.00	
C19-C20	ND	4.9	1.2	1.00	
C21-C22	ND	4.9	1.2	1.00	
C23-C24	ND	4.9	1.2	1.00	
C25-C28	ND	4.9	1.2	1.00	
C29-C32	ND	4.9	1.2	1.00	
C33-C36	ND	4.9	1.2	1.00	
C37-C40	ND	4.9	1.2	1.00	
C41-C44	ND	4.9	1.2	1.00	
C6-C44 Total	ND	5.0	1.3	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
n-Octacosane	93	61-145	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/29/19
Work Order: 19-04-2258
Preparation: EPA 3550B
Method: EPA 8015B (M)
Units: mg/kg

Project: 6334 Yucca St. / LA1301B

Page 3 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-15-490-3583	N/A	Solid	GC 49	04/29/19	04/30/19 03:25	190429B02

Comment(s): - Results were evaluated to the MDL (DL), concentrations $\geq$ to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
C6	ND	5.0	1.3	1.00	
C7	ND	5.0	1.3	1.00	
C8	ND	5.0	1.3	1.00	
C9-C10	ND	5.0	1.3	1.00	
C11-C12	ND	5.0	1.3	1.00	
C13-C14	ND	5.0	1.3	1.00	
C15-C16	ND	5.0	1.3	1.00	
C17-C18	ND	5.0	1.3	1.00	
C19-C20	ND	5.0	1.3	1.00	
C21-C22	ND	5.0	1.3	1.00	
C23-C24	ND	5.0	1.3	1.00	
C25-C28	ND	5.0	1.3	1.00	
C29-C32	ND	5.0	1.3	1.00	
C33-C36	ND	5.0	1.3	1.00	
C37-C40	ND	5.0	1.3	1.00	
C41-C44	ND	5.0	1.3	1.00	
C6-C44 Total	ND	5.0	1.3	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	88	61-145	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/29/19
Work Order: 19-04-2258
Preparation: EPA 3050B
Method: EPA 6010B
Units: mg/kg

Project: 6334 Yucca St. / LA1301B

Page 1 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SW-S-042919	19-04-2258-1-A	04/29/19 08:10	Solid	ICP 8300	04/29/19	04/30/19 12:38	190429L01

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.765	1.02	
Arsenic	ND	0.765	1.02	
Barium	61.1	0.510	1.02	
Beryllium	0.387	0.255	1.02	
Cadmium	ND	0.510	1.02	
Chromium	7.43	0.255	1.02	
Cobalt	5.92	0.255	1.02	
Copper	3.67	0.510	1.02	
Lead	0.544	0.510	1.02	
Molybdenum	ND	0.255	1.02	
Nickel	6.56	0.255	1.02	
Selenium	ND	0.765	1.02	
Silver	ND	0.255	1.02	
Thallium	ND	0.765	1.02	
Vanadium	18.4	0.255	1.02	
Zinc	16.9	1.02	1.02	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/29/19
Work Order: 19-04-2258
Preparation: EPA 3050B
Method: EPA 6010B
Units: mg/kg

Project: 6334 Yucca St. / LA1301B

Page 2 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
PB-Center-042919	19-04-2258-2-A	04/29/19 08:15	Solid	ICP 8300	04/29/19	04/29/19 21:13	190429L01

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Antimony	ND	0.789	1.05	
Arsenic	ND	0.789	1.05	
Barium	37.7	0.526	1.05	
Beryllium	0.335	0.263	1.05	
Cadmium	ND	0.526	1.05	
Chromium	7.85	0.263	1.05	
Cobalt	5.64	0.263	1.05	
Copper	4.81	0.526	1.05	
Lead	ND	0.526	1.05	
Molybdenum	0.331	0.263	1.05	
Nickel	6.35	0.263	1.05	
Selenium	ND	0.789	1.05	
Silver	ND	0.263	1.05	
Thallium	ND	0.789	1.05	
Vanadium	20.3	0.263	1.05	
Zinc	19.2	1.05	1.05	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/29/19
Work Order: 19-04-2258
Preparation: EPA 3050B
Method: EPA 6010B
Units: mg/kg

Project: 6334 Yucca St. / LA1301B

Page 3 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	097-01-002-27807	N/A	Solid	ICP 8300	04/29/19	04/29/19 21:02	190429L01

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	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/29/19
Work Order: 19-04-2258
Preparation: EPA 7471A Total
Method: EPA 7471A
Units: mg/kg

Project: 6334 Yucca St. / LA1301B

Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SW-S-042919	19-04-2258-1-A	04/29/19 08:10	Solid	Mercury 07	04/29/19	04/29/19 20:02	190429L05
<u>Parameter</u>		<u>Result</u>		<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>
Mercury		0.175		0.0794		1.00	
PB-Center-042919	19-04-2258-2-A	04/29/19 08:15	Solid	Mercury 07	04/29/19	04/29/19 19:51	190429L05
<u>Parameter</u>		<u>Result</u>		<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>
Mercury		ND		0.0833		1.00	
Method Blank	099-16-272-4566	N/A	Solid	Mercury 07	04/29/19	04/29/19 19:46	190429L05
<u>Parameter</u>		<u>Result</u>		<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>
Mercury		ND		0.0820		1.00	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



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Analytical Report

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/29/19
Work Order: 19-04-2258
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/kg

Project: 6334 Yucca St. / LA1301B

Page 1 of 6

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SW-S-042919	19-04-2258-1-A	04/29/19 08:10	Solid	GC/MS CC	04/29/19	04/29/19 18:08	190429L041

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.



Calscience

Analytical Report

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/29/19
Work Order: 19-04-2258
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/kg

Project: 6334 Yucca St. / LA1301B

Page 2 of 6

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
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	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	92	80-120	
Dibromofluoromethane	104	79-133	
1,2-Dichloroethane-d4	102	71-155	
Toluene-d8	104	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/29/19
Work Order: 19-04-2258
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/kg

Project: 6334 Yucca St. / LA1301B

Page 3 of 6

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
PB-Center-042919	19-04-2258-2-A	04/29/19 08:15	Solid	GC/MS CC	04/29/19	04/29/19 18:36	190429L041

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
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.



Calscience

Analytical Report

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/29/19
Work Order: 19-04-2258
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/kg

Project: 6334 Yucca St. / LA1301B

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
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	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	91	80-120	
Dibromofluoromethane	105	79-133	
1,2-Dichloroethane-d4	103	71-155	
Toluene-d8	106	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/29/19
Work Order: 19-04-2258
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/kg

Project: 6334 Yucca St. / LA1301B

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-12-796-15334	N/A	Solid	GC/MS CC	04/29/19	04/29/19 14:49	190429L041

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.



Calscience

Analytical Report

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/29/19
Work Order: 19-04-2258
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/kg

Project: 6334 Yucca St. / LA1301B

Page 6 of 6

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
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	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	93	80-120	
Dibromofluoromethane	103	79-133	
1,2-Dichloroethane-d4	102	71-155	
Toluene-d8	104	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Quality Control - Spike/Spike Duplicate

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/29/19
Work Order: 19-04-2258
Preparation: EPA 3550B
Method: EPA 8015B (M)

Project: 6334 Yucca St. / LA1301B

Page 1 of 4

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
19-04-2257-1	Sample	Solid	GC 49	04/29/19	04/30/19 04:48	190429S02
19-04-2257-1	Matrix Spike	Solid	GC 49	04/29/19	04/30/19 04:07	190429S02
19-04-2257-1	Matrix Spike Duplicate	Solid	GC 49	04/29/19	04/30/19 04:28	190429S02

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
TPH as Diesel	1528	400.0	1773	61	1684	39	64-130	5	0-15	3

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/29/19
Work Order: 19-04-2258
Preparation: EPA 3050B
Method: EPA 6010B

Project: 6334 Yucca St. / LA1301B

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number				
PB-Center-042919	Sample	Solid	ICP 8300	04/29/19	04/29/19 21:13	190429S01				
PB-Center-042919	Matrix Spike	Solid	ICP 8300	04/29/19	04/29/19 21:10	190429S01				
PB-Center-042919	Matrix Spike Duplicate	Solid	ICP 8300	04/29/19	04/29/19 21:11	190429S01				
Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Antimony	ND	25.00	12.82	51	13.81	55	50-115	7	0-20	
Arsenic	ND	25.00	25.82	103	26.20	105	75-125	1	0-20	
Barium	37.71	25.00	64.87	109	73.03	141	75-125	12	0-20	3
Beryllium	0.3351	25.00	26.62	105	27.28	108	75-125	2	0-20	
Cadmium	ND	25.00	26.87	107	27.19	109	75-125	1	0-20	
Chromium	7.853	25.00	33.32	102	35.86	112	75-125	7	0-20	
Cobalt	5.637	25.00	29.64	96	30.17	98	75-125	2	0-20	
Copper	4.813	25.00	30.34	102	31.88	108	75-125	5	0-20	
Lead	ND	25.00	24.88	100	25.00	100	75-125	0	0-20	
Molybdenum	0.3306	25.00	25.06	99	25.60	101	75-125	2	0-20	
Nickel	6.354	25.00	33.65	109	34.55	113	75-125	3	0-20	
Selenium	ND	25.00	23.69	95	23.60	94	75-125	0	0-20	
Silver	ND	12.50	12.42	99	12.80	102	75-125	3	0-20	
Thallium	ND	25.00	18.18	73	19.65	79	75-125	8	0-20	3
Vanadium	20.32	25.00	45.01	99	47.75	110	75-125	6	0-20	
Zinc	19.24	25.00	48.30	116	47.35	112	75-125	2	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/29/19
Work Order: 19-04-2258
Preparation: EPA 7471A Total
Method: EPA 7471A

Project: 6334 Yucca St. / LA1301B

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
PB-Center-042919	Sample	Solid	Mercury 07	04/29/19	04/29/19 19:51	190429S05
PB-Center-042919	Matrix Spike	Solid	Mercury 07	04/29/19	04/29/19 19:53	190429S05
PB-Center-042919	Matrix Spike Duplicate	Solid	Mercury 07	04/29/19	04/29/19 19:56	190429S05

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Mercury	ND	0.8350	0.7088	85	0.7191	86	71-137	1	0-14	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/29/19
Work Order: 19-04-2258
Preparation: EPA 5030C
Method: EPA 8260B

Project: 6334 Yucca St. / LA1301B

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
19-04-2257-1	Sample	Solid	GC/MS CC	04/29/19	04/29/19 15:46	190429S019
19-04-2257-1	Matrix Spike	Solid	GC/MS CC	04/29/19	04/29/19 17:11	190429S019
19-04-2257-1	Matrix Spike Duplicate	Solid	GC/MS CC	04/29/19	04/29/19 17:39	190429S019

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Benzene	ND	50.00	40.55	81	40.21	80	61-127	1	0-20	
Carbon Tetrachloride	ND	50.00	32.82	66	32.93	66	51-135	0	0-29	
Chlorobenzene	ND	50.00	23.74	47	24.53	49	57-123	3	0-20	3
1,2-Dibromoethane	ND	50.00	39.59	79	39.07	78	64-124	1	0-20	
1,2-Dichlorobenzene	ND	50.00	14.32	29	15.01	30	35-131	5	0-25	3
1,2-Dichloroethane	ND	50.00	41.65	83	41.04	82	80-120	1	0-20	
1,1-Dichloroethene	ND	50.00	42.07	84	42.18	84	47-143	0	0-25	
Ethylbenzene	ND	50.00	21.09	42	21.58	43	57-129	2	0-22	3
Toluene	ND	50.00	29.60	59	29.76	60	63-123	1	0-20	3
Trichloroethene	ND	50.00	29.79	60	29.18	58	44-158	2	0-20	
Vinyl Chloride	ND	50.00	37.04	74	40.93	82	49-139	10	0-47	
p/m-Xylene	ND	100.0	41.32	41	42.84	43	70-130	4	0-30	3
o-Xylene	ND	50.00	22.06	44	22.60	45	70-130	2	0-30	3
Methyl-t-Butyl Ether (MTBE)	ND	50.00	34.81	70	34.41	69	57-123	1	0-21	

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RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/29/19
Work Order: 19-04-2258
Preparation: EPA 3550B
Method: EPA 8015B (M)

Project: 6334 Yucca St. / LA1301B

Page 1 of 4

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-15-490-3583	LCS	Solid	GC 49	04/29/19	04/30/19 03:47	190429B02

<u>Parameter</u>	<u>Spike Added</u>	<u>Conc. Recovered</u>	<u>LCS %Rec.</u>	<u>%Rec. CL</u>	<u>Qualifiers</u>
TPH as Diesel	400.0	404.6	101	75-123	

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Calscience

Quality Control - LCS/LCSD

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/29/19
Work Order: 19-04-2258
Preparation: EPA 3050B
Method: EPA 6010B

Project: 6334 Yucca St. / LA1301B

Page 2 of 4

Quality Control Sample ID	Type	Matrix		Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
097-01-002-27807	LCS	Solid		ICP 8300	04/29/19	04/29/19 21:04	190429L01			
097-01-002-27807	LCSD	Solid		ICP 8300	04/29/19	04/29/19 21:06	190429L01			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Antimony	25.00	27.52	110	27.26	109	80-120	73-127	1	0-20	
Arsenic	25.00	25.79	103	25.90	104	80-120	73-127	0	0-20	
Barium	25.00	26.10	104	25.80	103	80-120	73-127	1	0-20	
Beryllium	25.00	24.33	97	23.96	96	80-120	73-127	2	0-20	
Cadmium	25.00	25.76	103	25.38	102	80-120	73-127	1	0-20	
Chromium	25.00	25.06	100	24.75	99	80-120	73-127	1	0-20	
Cobalt	25.00	24.94	100	24.69	99	80-120	73-127	1	0-20	
Copper	25.00	23.89	96	23.55	94	80-120	73-127	1	0-20	
Lead	25.00	25.27	101	24.97	100	80-120	73-127	1	0-20	
Molybdenum	25.00	24.62	98	24.40	98	80-120	73-127	1	0-20	
Nickel	25.00	26.70	107	26.44	106	80-120	73-127	1	0-20	
Selenium	25.00	23.23	93	23.53	94	80-120	73-127	1	0-20	
Silver	12.50	11.97	96	11.79	94	80-120	73-127	2	0-20	
Thallium	25.00	23.42	94	22.94	92	80-120	73-127	2	0-20	
Vanadium	25.00	23.94	96	23.57	94	80-120	73-127	2	0-20	
Zinc	25.00	26.71	107	26.38	106	80-120	73-127	1	0-20	

Total number of LCS compounds: 16

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/29/19
Work Order: 19-04-2258
Preparation: EPA 7471A Total
Method: EPA 7471A

Project: 6334 Yucca St. / LA1301B

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-16-272-4566	LCS	Solid	Mercury 07	04/29/19	04/29/19 19:49	190429L05

<u>Parameter</u>	<u>Spike Added</u>	<u>Conc. Recovered</u>	<u>LCS %Rec.</u>	<u>%Rec. CL</u>	<u>Qualifiers</u>
Mercury	0.8350	0.7371	88	85-121	

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Quality Control - LCS

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/29/19
Work Order: 19-04-2258
Preparation: EPA 5030C
Method: EPA 8260B

Project: 6334 Yucca St. / LA1301B

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number	
099-12-796-15334	LCS	Solid	GC/MS CC	04/29/19	04/29/19 16:42	190429L041	
Parameter		Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	ME CL	Qualifiers
Benzene		50.00	58.52	117	80-120	73-127	
Carbon Tetrachloride		50.00	57.34	115	65-137	53-149	
Chlorobenzene		50.00	50.95	102	80-120	73-127	
1,2-Dibromoethane		50.00	56.78	114	80-120	73-127	
1,2-Dichlorobenzene		50.00	52.26	105	80-120	73-127	
1,2-Dichloroethane		50.00	53.43	107	80-120	73-127	
1,1-Dichloroethene		50.00	58.91	118	68-128	58-138	
Ethylbenzene		50.00	51.75	103	80-120	73-127	
Toluene		50.00	54.08	108	80-120	73-127	
Trichloroethene		50.00	56.01	112	80-120	73-127	
Vinyl Chloride		50.00	50.83	102	67-127	57-137	
p/m-Xylene		100.0	104.9	105	75-125	67-133	
o-Xylene		50.00	52.34	105	75-125	67-133	
Methyl-t-Butyl Ether (MTBE)		50.00	45.40	91	70-124	61-133	

Total number of LCS compounds: 14

Total number of ME compounds: 0

Total number of ME compounds allowed: 1

LCS ME CL validation result: Pass

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Sample Analysis Summary Report

Work Order: 19-04-2258

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<u>Method</u>	<u>Extraction</u>	<u>Chemist ID</u>	<u>Instrument</u>	<u>Analytical Location</u>
EPA 6010B	EPA 3050B	1080	ICP 8300	1
EPA 7471A	EPA 7471A Total	868	Mercury 07	1
EPA 8015B (M)	EPA 3550B	1028	GC 49	1
EPA 8260B	EPA 5030C	823	GC/MS CC	2

Location 1: 7440 Lincoln Way, Garden Grove, CA 92841

Location 2: 7445 Lampson Avenue, Garden Grove, CA 92841

Glossary of Terms and Qualifiers

Work Order: 19-04-2258

Page 1 of 1

<u>Qualifiers</u>	<u>Definition</u>
*	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.

For courier service / sample drop off information, contact us26_sales@eurofinsus.com or call us.

LABORATORY CLIENT:

Group Delta Consultants
370 Anna Polia Ave, Suite 212
Torrance, CA 90501

TEL:	781-370-5100	E-MAIL:	alluciana@groupdelta.com
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TURNAROUND TIME (Rush surcharges may apply to any "AT" not "STANDARD")

☒ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAYS ☐ STANDARD

EDD ☒ COELT EDF ☐ OTHER

SPECIAL INSTRUCTIONS:

WO NO. / LAB USE ONLY

19-04-2258

CHAIN-OF-CUSTODY RECORD

Date:

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CLIENT PROJECT NAME / NO.:

ENT PROJECT NAME / NO.: 6334 WUCA ST.

PROJECT CONTACT:

PROJECT CONTACT: **Alycia McCord**

GLOBAL ID:

LOG CODE:

P.O. NO.:

P.O. NO.: LA1301B

LAB CONTACT OR QUOTE NO:

LAB CONTACT OR QUOTE NO: **Vik Patel**

SAMPLER(S): (PRINT)

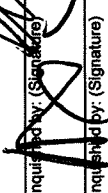
SAMPLER(S) (PRINT) *A McLeod*

REQUESTED ANALYSES

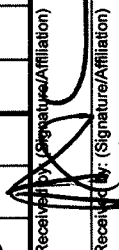
Please check box or fill in blank as needed.

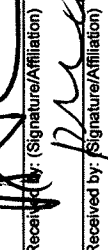
LAB USE ONLY	SAMPLE ID	SAMPLING		MATRIX	NO. OF CONT.	Unpreserved	Preserved	Field Filtered	TPH (g) □ GRO	TPH (g) □ DRO	TPH □ C6-C36 □ C6-C44	TPH	BTX / MTBE □ 8260 □	VOCs (8260)	Oxygenates (8260)	Prep (5035) □ En Core □ Terra Core	SVOCs (8270)	Pesticides (8081)	PCBs (8082)	PAHs □ 8270 □ 8270 SIM	T22 Metals ☒ 6010/747X □ 6020/747X	Cr(VI) □ 7196 □ 7199 □ 218.6	Time: 1040
		DATE	TIME																				
	9W-3-042919	4-29-19	810	SOIL	1	X					X			X									
	PB-Center-042919	4-29-19	815	SOIL	1	X					X			X									

Relinquished by: (Signature) 

Relinquished by: (Signature) 

Relinquished by: (Signature) 

Received by: (Signature/Affiliation) 

Received by: (Signature/Affiliation) 

Received by: (Signature/Affiliation) 

Date: 04/29/19

Date: 4/29/19

Date: 4/29/19

SAMPLE RECEIPT CHECKLIST

COOLER 1 OF 1CLIENT: GROUP DELTADATE: 04/29/2019**TEMPERATURE:** (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)Thermometer ID: SC6 (CF: -0.2°C); Temperature (w/o CF): 3.9°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 courierAmbient Temperature: ☐ Air ☐ FilterChecked by: 671**CUSTODY SEAL:**Cooler ☐ Present and Intact ☐ Present but Not Intact ☒ Not Present ☐ N/AChecked by: 671Sample(s) ☐ Present and Intact ☐ Present but Not Intact ☒ Not Present ☐ N/AChecked by: 876**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_{na2} ☐ 100PJ ☐ 100PJ_{na2} ☐ 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_{na2} ☒ 1AGB_s (pH__2) ☐ 1AGB_s (O&G) ☐ 1PB ☐ 1PB_{na} (pH__12) ☐ _____ ☐ _____ ☐ _____
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 = HNO₃, na = NaOH, na₂ = Na₂S₂O₃, p = H₃PO₄,
s = H₂SO₄, u = ultra-pure, x = Na₂SO₃+NaHSO₄.H₂O, znna = Zn (CH₃CO₂)₂ + NaOHLabeled/Checked by: 876Reviewed by: 300

APPENDIX G

**WASTE CHARACTERIZATION
ANALYTICAL REPORTS**



WORK ORDER NUMBER: 19-04-0221

The difference is service



AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: Group Delta Consultants, Inc.

Client Project Name: Yucca / LA1301B

Attention: Alycia McCord
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

A handwritten signature in black ink, appearing to read "Vikas Patel".

Approved for release on 04/05/2019 by:
Vikas Patel
Project Manager

ResultLink ▶

Email your PM ▶

Eurofins Calscience (Calscience) certifies that the test results provided in this report meet all NELAC Institute requirements for parameters for which accreditation is required or available. Any exceptions to NELAC Institute requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

Contents

Client Project Name: Yucca / LA1301B
Work Order Number: 19-04-0221

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Work Order: 19-04-0221

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Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 04/03/19. They were assigned to Work Order 19-04-0221.

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.

Sample Summary

Client:	Group Delta Consultants, Inc.	Work Order:	19-04-0221
	370 Amapola Avenue, Suite 212	Project Name:	Yucca / LA1301B
	Torrance, CA 90501-7243	PO Number:	LA1301B
		Date/Time Received:	04/03/19 11:45
		Number of Containers:	1

Attn: Alycia McCord

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
SS-UST-040219	19-04-0221-1	04/02/19 08:16	1	Solid



Calscience

Detections Summary

Client: Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Work Order: 19-04-0221
Project Name: Yucca / LA1301B
Received: 04/03/19

Attn: Alycia McCord

Page 1 of 1

Client SampleID

Analyte	Result	Qualifiers	RL	Units	Method	Extraction
SS-UST-040219 (19-04-0221-1)						
Barium	73.6		0.488	mg/kg	EPA 6010B	EPA 3050B
Beryllium	0.366		0.244	mg/kg	EPA 6010B	EPA 3050B
Chromium	8.72		0.244	mg/kg	EPA 6010B	EPA 3050B
Cobalt	4.78		0.244	mg/kg	EPA 6010B	EPA 3050B
Copper	9.11		0.488	mg/kg	EPA 6010B	EPA 3050B
Lead	38.3		0.488	mg/kg	EPA 6010B	EPA 3050B
Nickel	6.96		0.244	mg/kg	EPA 6010B	EPA 3050B
Vanadium	21.8		0.244	mg/kg	EPA 6010B	EPA 3050B
Zinc	67.0		0.976	mg/kg	EPA 6010B	EPA 3050B
C23-C24	310		240	mg/kg	EPA 8015B (M)	EPA 3550B
C25-C28	960		240	mg/kg	EPA 8015B (M)	EPA 3550B
C29-C32	1200		240	mg/kg	EPA 8015B (M)	EPA 3550B
C33-C36	900		240	mg/kg	EPA 8015B (M)	EPA 3550B
C37-C40	430		240	mg/kg	EPA 8015B (M)	EPA 3550B
C41-C44	250		240	mg/kg	EPA 8015B (M)	EPA 3550B
C6-C44 Total	4300		240	mg/kg	EPA 8015B (M)	EPA 3550B

Subcontracted analyses, if any, are not included in this summary.

* MDL is shown

Analytical Report

Group Delta Consultants, Inc.
 370 Amapola Avenue, Suite 212
 Torrance, CA 90501-7243

Date Received: 04/03/19
 Work Order: 19-04-0221
 Preparation: EPA 3550B
 Method: EPA 8015B (M)
 Units: mg/kg

Project: Yucca / LA1301B

Page 1 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SS-UST-040219	19-04-0221-1-A	04/02/19 08:16	Solid	GC 50	04/03/19	04/04/19 12:08	190403B04

Parameter	Result	RL	DF	Qualifiers
C6	ND	240	10.0	
C7	ND	240	10.0	
C8	ND	240	10.0	
C9-C10	ND	240	10.0	
C11-C12	ND	240	10.0	
C13-C14	ND	240	10.0	
C15-C16	ND	240	10.0	
C17-C18	ND	240	10.0	
C19-C20	ND	240	10.0	
C21-C22	ND	240	10.0	
C23-C24	310	240	10.0	
C25-C28	960	240	10.0	
C29-C32	1200	240	10.0	
C33-C36	900	240	10.0	
C37-C40	430	240	10.0	
C41-C44	250	240	10.0	
C6-C44 Total	4300	240	10.0	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	63	61-145	



 Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0221
Preparation: EPA 3550B
Method: EPA 8015B (M)
Units: mg/kg

Project: Yucca / LA1301B

Page 2 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-15-490-3548	N/A	Solid	GC 50	04/03/19	04/03/19 19:39	190403B04

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	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0221
Preparation: EPA 3050B
Method: EPA 6010B
Units: mg/kg

Project: Yucca / LA1301B

Page 1 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SS-UST-040219	19-04-0221-1-A	04/02/19 08:16	Solid	ICP 8300	04/03/19	04/03/19 21:07	190402L04

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.732	0.976	
Arsenic	ND	0.732	0.976	
Barium	73.6	0.488	0.976	
Beryllium	0.366	0.244	0.976	
Cadmium	ND	0.488	0.976	
Chromium	8.72	0.244	0.976	
Cobalt	4.78	0.244	0.976	
Copper	9.11	0.488	0.976	
Lead	38.3	0.488	0.976	
Molybdenum	ND	0.244	0.976	
Nickel	6.96	0.244	0.976	
Selenium	ND	0.732	0.976	
Silver	ND	0.244	0.976	
Thallium	ND	0.732	0.976	
Vanadium	21.8	0.244	0.976	
Zinc	67.0	0.976	0.976	

[Return to Contents](#)

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

Group Delta Consultants, Inc.
 370 Amapola Avenue, Suite 212
 Torrance, CA 90501-7243

Date Received: 04/03/19
 Work Order: 19-04-0221
 Preparation: EPA 3050B
 Method: EPA 6010B
 Units: mg/kg

Project: Yucca / LA1301B

Page 2 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	097-01-002-27722	N/A	Solid	ICP 8300	04/02/19	04/03/19 14:42	190402L04

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	



 Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0221
Preparation: EPA 7471A Total
Method: EPA 7471A
Units: mg/kg

Project: Yucca / LA1301B

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SS-UST-040219	19-04-0221-1-A	04/02/19 08:16	Solid	Mercury 07	04/04/19	04/04/19 13:58	190404L01

Parameter	Result	RL	DF	Qualifiers
Mercury	ND	0.0833	1.00	

Method Blank	099-16-272-4519	N/A	Solid	Mercury 07	04/04/19	04/04/19 11:56	190404L01
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Parameter	Result	RL	DF	Qualifiers
Mercury	ND	0.0820	1.00	

[Return to Contents](#)

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0221
Preparation: EPA 3545
Method: EPA 8082
Units: ug/kg

Project: Yucca / LA1301B

Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SS-UST-040219	19-04-0221-1-A	04/02/19 08:16	Solid	GC 58	04/03/19	04/04/19 14:38	190403L06

Parameter	Result	RL	DF	Qualifiers
Aroclor-1016	ND	50	1.00	
Aroclor-1221	ND	50	1.00	
Aroclor-1232	ND	50	1.00	
Aroclor-1242	ND	50	1.00	
Aroclor-1248	ND	50	1.00	
Aroclor-1254	ND	50	1.00	
Aroclor-1260	ND	50	1.00	
Aroclor-1262	ND	50	1.00	
Aroclor-1268	ND	50	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Decachlorobiphenyl	106	24-168	
2,4,5,6-Tetrachloro-m-Xylene	100	25-145	

Method Blank	099-12-535-5150	N/A	Solid	GC 58	04/03/19	04/04/19 06:34	190403L06
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Parameter	Result	RL	DF	Qualifiers
Aroclor-1016	ND	50	1.00	
Aroclor-1221	ND	50	1.00	
Aroclor-1232	ND	50	1.00	
Aroclor-1242	ND	50	1.00	
Aroclor-1248	ND	50	1.00	
Aroclor-1254	ND	50	1.00	
Aroclor-1260	ND	50	1.00	
Aroclor-1262	ND	50	1.00	
Aroclor-1268	ND	50	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Decachlorobiphenyl	90	24-168	
2,4,5,6-Tetrachloro-m-Xylene	92	25-145	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

Group Delta Consultants, Inc.
 370 Amapola Avenue, Suite 212
 Torrance, CA 90501-7243

Date Received: 04/03/19
 Work Order: 19-04-0221
 Preparation: EPA 5030C
 Method: EPA 8260B
 Units: ug/kg

Project: Yucca / LA1301B

Page 1 of 6

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SS-UST-040219	19-04-0221-1-B	04/02/19 08:16	Solid	GC/MS CC	04/04/19	04/04/19 16:34	190404L030

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.

Analytical Report

Group Delta Consultants, Inc.
 370 Amapola Avenue, Suite 212
 Torrance, CA 90501-7243

Date Received: 04/03/19
 Work Order: 19-04-0221
 Preparation: EPA 5030C
 Method: EPA 8260B
 Units: ug/kg

Project: Yucca / LA1301B

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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	94	80-120		

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



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Analytical Report

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0221
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/kg

Project: Yucca / LA1301B

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<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
Dibromofluoromethane	113	79-133	
1,2-Dichloroethane-d4	110	71-155	
Toluene-d8	101	80-120	


Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0221
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/kg

Project: Yucca / LA1301B

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-12-796-15250	N/A	Solid	GC/MS CC	04/05/19	04/04/19 13:57	190404L030

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.

Analytical Report

Group Delta Consultants, Inc.
 370 Amapola Avenue, Suite 212
 Torrance, CA 90501-7243

Date Received: 04/03/19
 Work Order: 19-04-0221
 Preparation: EPA 5030C
 Method: EPA 8260B
 Units: ug/kg

Project: Yucca / LA1301B

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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	95	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0221
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/kg

Project: Yucca / LA1301B

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<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
Dibromofluoromethane	111	79-133	
1,2-Dichloroethane-d4	112	71-155	
Toluene-d8	99	80-120	


Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0221
Preparation: EPA 1311
Method: EPA 8260B
Units: ug/L

Project: Yucca / LA1301B

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SS-UST-040219	19-04-0221-1-A	04/02/19 08:16	Solid	GC/MS QQ	04/03/19	04/05/19 01:37	190404L038

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	2000	1.00	
Benzene	ND	100	1.00	
Bromobenzene	ND	100	1.00	
Bromochloromethane	ND	200	1.00	
Bromodichloromethane	ND	100	1.00	
Bromoform	ND	500	1.00	
Bromomethane	ND	5000	1.00	
2-Butanone	ND	2000	1.00	
n-Butylbenzene	ND	100	1.00	
sec-Butylbenzene	ND	100	1.00	
tert-Butylbenzene	ND	100	1.00	
Carbon Disulfide	ND	1000	1.00	
Carbon Tetrachloride	ND	50	1.00	
Chlorobenzene	ND	100	1.00	
Chloroethane	ND	300	1.00	
Chloroform	ND	100	1.00	
Chloromethane	ND	1000	1.00	
2-Chlorotoluene	ND	100	1.00	
4-Chlorotoluene	ND	100	1.00	
Dibromochloromethane	ND	200	1.00	
1,2-Dibromo-3-Chloropropane	ND	500	1.00	
1,2-Dibromoethane	ND	100	1.00	
Dibromomethane	ND	100	1.00	
1,2-Dichlorobenzene	ND	100	1.00	
1,3-Dichlorobenzene	ND	100	1.00	
1,4-Dichlorobenzene	ND	100	1.00	
Dichlorodifluoromethane	ND	500	1.00	
1,1-Dichloroethane	ND	100	1.00	
1,2-Dichloroethane	ND	50	1.00	
1,1-Dichloroethene	ND	100	1.00	
c-1,2-Dichloroethene	ND	100	1.00	
t-1,2-Dichloroethene	ND	100	1.00	
1,2-Dichloropropane	ND	100	1.00	
1,3-Dichloropropane	ND	100	1.00	
2,2-Dichloropropane	ND	100	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

Group Delta Consultants, Inc.
 370 Amapola Avenue, Suite 212
 Torrance, CA 90501-7243

Date Received: 04/03/19
 Work Order: 19-04-0221
 Preparation: EPA 1311
 Method: EPA 8260B
 Units: ug/L

Project: Yucca / LA1301B

Page 2 of 4

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	100	1.00	
c-1,3-Dichloropropene	ND	50	1.00	
t-1,3-Dichloropropene	ND	50	1.00	
Ethylbenzene	ND	100	1.00	
2-Hexanone	ND	1000	1.00	
Isopropylbenzene	ND	100	1.00	
p-Isopropyltoluene	ND	100	1.00	
Methylene Chloride	ND	1000	1.00	
4-Methyl-2-Pentanone	ND	1000	1.00	
Naphthalene	ND	1000	1.00	
n-Propylbenzene	ND	100	1.00	
Styrene	ND	100	1.00	
1,1,1,2-Tetrachloroethane	ND	200	1.00	
1,1,2,2-Tetrachloroethane	ND	100	1.00	
Tetrachloroethene	ND	100	1.00	
Toluene	ND	100	1.00	
1,2,3-Trichlorobenzene	ND	100	1.00	
1,2,4-Trichlorobenzene	ND	100	1.00	
1,1,1-Trichloroethane	ND	100	1.00	
1,1,2-Trichloroethane	ND	100	1.00	
Trichloroethene	ND	100	1.00	
Trichlorofluoromethane	ND	1000	1.00	
1,2,3-Trichloropropane	ND	500	1.00	
1,2,4-Trimethylbenzene	ND	100	1.00	
1,3,5-Trimethylbenzene	ND	100	1.00	
Vinyl Acetate	ND	1000	1.00	
Vinyl Chloride	ND	50	1.00	
p/m-Xylene	ND	200	1.00	
o-Xylene	ND	100	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	100	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	94	80-120	
Dibromofluoromethane	96	80-126	
1,2-Dichloroethane-d4	100	80-134	
Toluene-d8	103	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

Group Delta Consultants, Inc.
 370 Amapola Avenue, Suite 212
 Torrance, CA 90501-7243

Date Received: 04/03/19
 Work Order: 19-04-0221
 Preparation: EPA 1311
 Method: EPA 8260B
 Units: ug/L

Project: Yucca / LA1301B

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-14-519-1768	N/A	Aqueous	GC/MS QQ	04/03/19	04/04/19 23:13	190404L038

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	2000	1.00	
Benzene	ND	100	1.00	
Bromobenzene	ND	100	1.00	
Bromochloromethane	ND	200	1.00	
Bromodichloromethane	ND	100	1.00	
Bromoform	ND	500	1.00	
Bromomethane	ND	5000	1.00	
2-Butanone	ND	2000	1.00	
n-Butylbenzene	ND	100	1.00	
sec-Butylbenzene	ND	100	1.00	
tert-Butylbenzene	ND	100	1.00	
Carbon Disulfide	ND	1000	1.00	
Carbon Tetrachloride	ND	50	1.00	
Chlorobenzene	ND	100	1.00	
Chloroethane	ND	300	1.00	
Chloroform	ND	100	1.00	
Chloromethane	ND	1000	1.00	
2-Chlorotoluene	ND	100	1.00	
4-Chlorotoluene	ND	100	1.00	
Dibromochloromethane	ND	200	1.00	
1,2-Dibromo-3-Chloropropane	ND	500	1.00	
1,2-Dibromoethane	ND	100	1.00	
Dibromomethane	ND	100	1.00	
1,2-Dichlorobenzene	ND	100	1.00	
1,3-Dichlorobenzene	ND	100	1.00	
1,4-Dichlorobenzene	ND	100	1.00	
Dichlorodifluoromethane	ND	500	1.00	
1,1-Dichloroethane	ND	100	1.00	
1,2-Dichloroethane	ND	50	1.00	
1,1-Dichloroethene	ND	100	1.00	
c-1,2-Dichloroethene	ND	100	1.00	
t-1,2-Dichloroethene	ND	100	1.00	
1,2-Dichloropropane	ND	100	1.00	
1,3-Dichloropropane	ND	100	1.00	
2,2-Dichloropropane	ND	100	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

Group Delta Consultants, Inc.
 370 Amapola Avenue, Suite 212
 Torrance, CA 90501-7243

Date Received: 04/03/19
 Work Order: 19-04-0221
 Preparation: EPA 1311
 Method: EPA 8260B
 Units: ug/L

Project: Yucca / LA1301B

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Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	100	1.00	
c-1,3-Dichloropropene	ND	50	1.00	
t-1,3-Dichloropropene	ND	50	1.00	
Ethylbenzene	ND	100	1.00	
2-Hexanone	ND	1000	1.00	
Isopropylbenzene	ND	100	1.00	
p-Isopropyltoluene	ND	100	1.00	
Methylene Chloride	ND	1000	1.00	
4-Methyl-2-Pentanone	ND	1000	1.00	
Naphthalene	ND	1000	1.00	
n-Propylbenzene	ND	100	1.00	
Styrene	ND	100	1.00	
1,1,1,2-Tetrachloroethane	ND	200	1.00	
1,1,2,2-Tetrachloroethane	ND	100	1.00	
Tetrachloroethene	ND	100	1.00	
Toluene	ND	100	1.00	
1,2,3-Trichlorobenzene	ND	100	1.00	
1,2,4-Trichlorobenzene	ND	100	1.00	
1,1,1-Trichloroethane	ND	100	1.00	
1,1,2-Trichloroethane	ND	100	1.00	
Trichloroethene	ND	100	1.00	
Trichlorofluoromethane	ND	1000	1.00	
1,2,3-Trichloropropane	ND	500	1.00	
1,2,4-Trimethylbenzene	ND	100	1.00	
1,3,5-Trimethylbenzene	ND	100	1.00	
Vinyl Acetate	ND	1000	1.00	
Vinyl Chloride	ND	50	1.00	
p/m-Xylene	ND	200	1.00	
o-Xylene	ND	100	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	100	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	95	80-120	
Dibromofluoromethane	95	80-126	
1,2-Dichloroethane-d4	100	80-134	
Toluene-d8	103	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Quality Control - Spike/Spike Duplicate

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0221
Preparation: EPA 3550B
Method: EPA 8015B (M)

Project: Yucca / LA1301B

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
19-03-2270-9	Sample	Solid	GC 50	04/03/19	04/03/19 23:18	190403S04
19-03-2270-9	Matrix Spike	Solid	GC 50	04/03/19	04/03/19 20:19	190403S04
19-03-2270-9	Matrix Spike Duplicate	Solid	GC 50	04/03/19	04/03/19 20:39	190403S04

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	463.7	116	457.6	114	64-130	1	0-15	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0221
Preparation: EPA 3050B
Method: EPA 6010B

Project: Yucca / LA1301B

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
19-04-0150-1	Sample	Solid	ICP 8300	04/02/19	04/03/19 14:48	190402S04
19-04-0150-1	Matrix Spike	Solid	ICP 8300	04/02/19	04/03/19 14:50	190402S04
19-04-0150-1	Matrix Spike Duplicate	Solid	ICP 8300	04/02/19	04/03/19 14:52	190402S04

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Antimony	ND	25.00	6.929	28	4.246	17	50-115	48	0-20	3,4
Arsenic	1.062	25.00	28.94	111	25.31	97	75-125	13	0-20	
Barium	56.96	25.00	95.08	152	93.45	146	75-125	2	0-20	3
Beryllium	0.7540	25.00	28.72	112	26.46	103	75-125	8	0-20	
Cadmium	ND	25.00	28.66	115	26.33	105	75-125	8	0-20	
Chromium	5.050	25.00	33.67	114	32.71	111	75-125	3	0-20	
Cobalt	3.417	25.00	29.99	106	27.79	97	75-125	8	0-20	
Copper	3.332	25.00	30.99	111	29.01	103	75-125	7	0-20	
Lead	14.64	25.00	38.97	97	35.54	84	75-125	9	0-20	
Molybdenum	ND	25.00	25.70	103	22.38	90	75-125	14	0-20	
Nickel	2.787	25.00	30.65	111	28.31	102	75-125	8	0-20	
Selenium	ND	25.00	25.53	102	23.05	92	75-125	10	0-20	
Silver	ND	12.50	13.79	110	12.74	102	75-125	8	0-20	
Thallium	ND	25.00	27.49	110	25.00	100	75-125	9	0-20	
Vanadium	17.20	25.00	43.60	106	45.10	112	75-125	3	0-20	
Zinc	16.03	25.00	45.63	118	42.00	104	75-125	8	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



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Quality Control - Spike/Spike Duplicate

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0221
Preparation: EPA 7471A Total
Method: EPA 7471A

Project: Yucca / LA1301B

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
19-04-0190-3	Sample	Solid	Mercury 07	04/04/19	04/04/19 12:01	190404S01
19-04-0190-3	Matrix Spike	Solid	Mercury 07	04/04/19	04/04/19 12:03	190404S01
19-04-0190-3	Matrix Spike Duplicate	Solid	Mercury 07	04/04/19	04/04/19 12:05	190404S01

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Mercury	ND	0.8350	0.7589	91	0.7848	94	71-137	3	0-14	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0221
Preparation: EPA 3545
Method: EPA 8082

Project: Yucca / LA1301B

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
19-04-0094-1	Sample	Solid	GC 58	04/03/19	04/04/19 07:46	190403S06
19-04-0094-1	Matrix Spike	Solid	GC 58	04/03/19	04/04/19 07:10	190403S06
19-04-0094-1	Matrix Spike Duplicate	Solid	GC 58	04/03/19	04/04/19 07:28	190403S06

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Aroclor-1016	ND	100.0	92.50	92	89.00	89	50-135	4	0-20	
Aroclor-1260	ND	100.0	91.00	91	92.00	92	50-135	1	0-20	

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RPD: Relative Percent Difference. CL: Control Limits



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Quality Control - Spike/Spike Duplicate

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0221
Preparation: EPA 5030C
Method: EPA 8260B

Project: Yucca / LA1301B

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
19-04-0247-1	Sample	Solid	GC/MS CC	04/04/19	04/04/19 14:54	190404S008
19-04-0247-1	Matrix Spike	Solid	GC/MS CC	04/04/19	04/04/19 15:37	190404S008
19-04-0247-1	Matrix Spike Duplicate	Solid	GC/MS CC	04/04/19	04/04/19 16:06	190404S008

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Benzene	ND	50.00	59.58	119	46.91	94	61-127	24	0-20	4
Carbon Tetrachloride	ND	50.00	68.64	137	52.32	105	51-135	27	0-29	3
Chlorobenzene	ND	50.00	54.80	110	44.29	89	57-123	21	0-20	4
1,2-Dibromoethane	ND	50.00	52.62	105	46.05	92	64-124	13	0-20	
1,2-Dichlorobenzene	ND	50.00	55.24	110	44.02	88	35-131	23	0-25	
1,2-Dichloroethane	ND	50.00	56.72	113	48.38	97	80-120	16	0-20	
1,1-Dichloroethene	ND	50.00	64.87	130	50.29	101	47-143	25	0-25	
Ethylbenzene	ND	50.00	56.62	113	44.41	89	57-129	24	0-22	4
Toluene	ND	50.00	57.84	116	46.79	94	63-123	21	0-20	4
Trichloroethene	ND	50.00	56.41	113	44.44	89	44-158	24	0-20	4
Vinyl Chloride	ND	50.00	64.59	129	58.78	118	49-139	9	0-47	
p/m-Xylene	ND	100.0	116.1	116	91.74	92	70-130	23	0-30	
o-Xylene	ND	50.00	56.95	114	45.34	91	70-130	23	0-30	
Methyl-t-Butyl Ether (MTBE)	ND	50.00	44.83	90	37.90	76	57-123	17	0-21	
Tert-Butyl Alcohol (TBA)	ND	250.0	256.4	103	242.5	97	30-168	6	0-34	
Diisopropyl Ether (DIPE)	ND	50.00	57.11	114	47.42	95	57-129	19	0-20	
Ethyl-t-Butyl Ether (ETBE)	ND	50.00	48.01	96	39.78	80	55-127	19	0-20	
Tert-Amyl-Methyl Ether (TAME)	ND	50.00	52.75	106	45.25	91	58-124	15	0-20	
Ethanol	ND	500.0	563.6	113	537.1	107	17-167	5	0-47	

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RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0221
Preparation: EPA 1311
Method: EPA 8260B

Project: Yucca / LA1301B

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
19-04-0158-1	Sample	Solid	GC/MS QQ	04/03/19	04/04/19 23:42	190404S010
19-04-0158-1	Matrix Spike	Solid	GC/MS QQ	04/03/19	04/05/19 00:11	190404S010
19-04-0158-1	Matrix Spike Duplicate	Solid	GC/MS QQ	04/03/19	04/05/19 00:39	190404S010

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Benzene	ND	5000	4604	92	4635	93	78-120	1	0-20	
Carbon Tetrachloride	ND	5000	4174	83	4373	87	67-139	5	0-20	
Chlorobenzene	ND	5000	4665	93	4757	95	80-120	2	0-20	
1,2-Dibromoethane	ND	5000	4657	93	4794	96	80-123	3	0-20	
1,2-Dichlorobenzene	ND	5000	4563	91	4660	93	76-120	2	0-20	
1,2-Dichloroethane	ND	5000	4991	100	5135	103	76-130	3	0-20	
1,1-Dichloroethene	ND	5000	4522	90	4556	91	70-130	1	0-27	
Ethylbenzene	ND	5000	4691	94	4789	96	73-127	2	0-20	
Toluene	ND	5000	4908	98	4977	100	72-126	1	0-20	
Trichloroethene	ND	5000	4634	93	4663	93	74-122	1	0-20	
Vinyl Chloride	ND	5000	5219	104	5059	101	65-131	3	0-24	
p/m-Xylene	ND	10000	9529	95	9705	97	70-130	2	0-30	
o-Xylene	ND	5000	4786	96	4926	99	70-130	3	0-30	
Methyl-t-Butyl Ether (MTBE)	ND	5000	3615	72	3745	75	69-123	4	0-20	

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RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0221
Preparation: EPA 3550B
Method: EPA 8015B (M)

Project: Yucca / LA1301B

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-15-490-3548	LCS	Solid	GC 50	04/03/19	04/03/19 19:59	190403B04

Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	Qualifiers
TPH as Diesel	400.0	453.6	113	75-123	



Calscience

Quality Control - LCS/LCSD

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0221
Preparation: EPA 3050B
Method: EPA 6010B

Project: Yucca / LA1301B

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Quality Control Sample ID	Type	Matrix		Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
097-01-002-27722	LCS	Solid		ICP 8300	04/02/19	04/03/19 14:45	190402L04			
097-01-002-27722	LCSD	Solid		ICP 8300	04/02/19	04/03/19 14:46	190402L04			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Antimony	25.00	25.15	101	24.39	98	80-120	73-127	3	0-20	
Arsenic	25.00	24.40	98	24.40	98	80-120	73-127	0	0-20	
Barium	25.00	26.30	105	26.18	105	80-120	73-127	0	0-20	
Beryllium	25.00	23.42	94	23.33	93	80-120	73-127	0	0-20	
Cadmium	25.00	25.44	102	25.39	102	80-120	73-127	0	0-20	
Chromium	25.00	25.00	100	24.73	99	80-120	73-127	1	0-20	
Cobalt	25.00	25.75	103	25.60	102	80-120	73-127	1	0-20	
Copper	25.00	24.46	98	24.39	98	80-120	73-127	0	0-20	
Lead	25.00	26.43	106	25.86	103	80-120	73-127	2	0-20	
Molybdenum	25.00	24.72	99	24.24	97	80-120	73-127	2	0-20	
Nickel	25.00	25.83	103	25.70	103	80-120	73-127	1	0-20	
Selenium	25.00	24.13	97	23.44	94	80-120	73-127	3	0-20	
Silver	12.50	12.01	96	11.92	95	80-120	73-127	1	0-20	
Thallium	25.00	25.67	103	24.57	98	80-120	73-127	4	0-20	
Vanadium	25.00	23.72	95	23.56	94	80-120	73-127	1	0-20	
Zinc	25.00	25.47	102	24.98	100	80-120	73-127	2	0-20	

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

Quality Control - LCS

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0221
Preparation: EPA 7471A Total
Method: EPA 7471A

Project: Yucca / LA1301B

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-16-272-4519	LCS	Solid	Mercury 07	04/04/19	04/04/19 11:59	190404L01

<u>Parameter</u>	<u>Spike Added</u>	<u>Conc. Recovered</u>	<u>LCS %Rec.</u>	<u>%Rec. CL</u>	<u>Qualifiers</u>
Mercury	0.8350	0.7234	87	85-121	



Calscience

Quality Control - LCS

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0221
Preparation: EPA 3545
Method: EPA 8082

Project: Yucca / LA1301B

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-12-535-5150	LCS	Solid	GC 58	04/03/19	04/04/19 06:52	190403L06
<u>Parameter</u>		<u>Spike Added</u>	<u>Conc. Recovered</u>	<u>LCS %Rec.</u>	<u>%Rec. CL</u>	<u>Qualifiers</u>
Aroclor-1016		100.0	92.50	92	50-135	
Aroclor-1260		100.0	87.00	87	50-135	

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RPD: Relative Percent Difference. CL: Control Limits

Quality Control - LCS

Group Delta Consultants, Inc.
 370 Amapola Avenue, Suite 212
 Torrance, CA 90501-7243

Date Received: 04/03/19
 Work Order: 19-04-0221
 Preparation: EPA 5030C
 Method: EPA 8260B

Project: Yucca / LA1301B

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-12-796-15250	LCS	Solid	GC/MS CC	04/05/19	04/04/19 13:00	190404L030
Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	ME CL	Qualifiers
Benzene	50.00	56.24	112	80-120	73-127	
Carbon Tetrachloride	50.00	61.80	124	65-137	53-149	
Chlorobenzene	50.00	52.77	106	80-120	73-127	
1,2-Dibromoethane	50.00	52.90	106	80-120	73-127	
1,2-Dichlorobenzene	50.00	52.03	104	80-120	73-127	
1,2-Dichloroethane	50.00	54.52	109	80-120	73-127	
1,1-Dichloroethene	50.00	54.91	110	68-128	58-138	
Ethylbenzene	50.00	53.71	107	80-120	73-127	
Toluene	50.00	54.39	109	80-120	73-127	
Trichloroethene	50.00	54.65	109	80-120	73-127	
Vinyl Chloride	50.00	56.95	114	67-127	57-137	
p/m-Xylene	100.0	109.8	110	75-125	67-133	
o-Xylene	50.00	54.15	108	75-125	67-133	
Methyl-t-Butyl Ether (MTBE)	50.00	42.05	84	70-124	61-133	
Tert-Butyl Alcohol (TBA)	250.0	266.4	107	73-121	65-129	
Diisopropyl Ether (DIPE)	50.00	53.56	107	69-129	59-139	
Ethyl-t-Butyl Ether (ETBE)	50.00	45.09	90	70-124	61-133	
Tert-Amyl-Methyl Ether (TAME)	50.00	51.31	103	74-122	66-130	
Ethanol	500.0	612.4	122	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

Return to Contents

Quality Control - LCS

Group Delta Consultants, Inc.
 370 Amapola Avenue, Suite 212
 Torrance, CA 90501-7243

Date Received: 04/03/19
 Work Order: 19-04-0221
 Preparation: EPA 5030C
 Method: EPA 8260B

Project: Yucca / LA1301B

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-14-519-1768	LCS	Aqueous	GC/MS QQ	04/04/19	04/04/19 21:47	190404L038
Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	ME CL	Qualifiers
Benzene	50.00	44.04	88	80-120	73-127	
Carbon Tetrachloride	50.00	40.98	82	66-138	54-150	
Chlorobenzene	50.00	44.71	89	80-120	73-127	
1,2-Dibromoethane	50.00	45.38	91	80-120	73-127	
1,2-Dichlorobenzene	50.00	43.88	88	80-120	73-127	
1,2-Dichloroethane	50.00	48.28	97	80-129	72-137	
1,1-Dichloroethene	50.00	44.45	89	71-131	61-141	
Ethylbenzene	50.00	44.97	90	80-123	73-130	
Toluene	50.00	46.78	94	79-121	72-128	
Trichloroethene	50.00	44.70	89	80-120	73-127	
Vinyl Chloride	50.00	52.69	105	70-136	59-147	
p/m-Xylene	100.0	91.53	92	75-125	67-133	
o-Xylene	50.00	46.06	92	75-125	67-133	
Methyl-t-Butyl Ether (MTBE)	50.00	37.10	74	72-126	63-135	

Total number of LCS compounds: 14

Total number of ME compounds: 0

Total number of ME compounds allowed: 1

LCS ME CL validation result: Pass

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Sample Analysis Summary Report

Work Order: 19-04-0221

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<u>Method</u>	<u>Extraction</u>	<u>Chemist ID</u>	<u>Instrument</u>	<u>Analytical Location</u>
EPA 6010B	EPA 3050B	1080	ICP 8300	1
EPA 7471A	EPA 7471A Total	868	Mercury 07	1
EPA 8015B (M)	EPA 3550B	972	GC 50	1
EPA 8082	EPA 3545	669	GC 58	1
EPA 8260B	EPA 1311	486	GC/MS QQ	2
EPA 8260B	EPA 5030C	823	GC/MS CC	2

Glossary of Terms and Qualifiers

Work Order: 19-04-0221

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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.

SAMPLE RECEIPT CHECKLIST

 COOLER 1 OF 1

 CLIENT: GROUP DELTA

 DATE: 04/03/2019
TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)

 Thermometer ID: SC6 (CF: -0.2°C); Temperature (w/o CF): 3.8°C (w/ CF): 3.6°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: 671
CUSTODY SEAL:

 Cooler ☐ Present and Intact ☐ Present but Not Intact ☒ Not Present ☐ N/A

 Checked by: 671

 Sample(s) ☐ Present and Intact ☐ Present but Not Intact ☒ Not Present ☐ N/A

 Checked by: 876
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 ☐ VOAh ☐ VOAna₂ ☐ 100PJ ☐ 100PJna₂ ☐ 125AGB ☐ 125AGBh ☐ 125AGBp ☐ 125PB ☐ 125PBz₂na (pH__9)

☐ 250AGB ☐ 250CGB ☐ 250CGBs (pH__2) ☐ 250PB ☐ 250PBn (pH__2) ☐ 500AGB ☐ 500AGJ ☐ 500AGJs (pH__2) ☐ 500PB

☐ 1AGB ☐ 1AGBna₂ ☐ 1AGBs (pH__2) ☐ 1AGBs (O&G) ☐ 1PB ☐ 1PBna (pH__12) ☐ _____ ☐ _____

 Solid: ☐ 4ozCGJ ☒ 8ozCGJ ☐ 16ozCGJ ☐ Sleeve (____) ☐ EnCores® (____) ☐ TeraCores® (____) ☐ _____ ☐ _____

 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 = HNO₃, na = NaOH, na₂ = Na₂S₂O₃, p = H₃PO₄, Labeled/Checked by: 876

 s = H₂SO₄, u = ultra-pure, x = Na₂SO₃+NaHSO₄·H₂O, z₂na = Zn (CH₃CO₂)₂ + NaOH

 Reviewed by: 360



WORK ORDER NUMBER: 19-04-0222

The difference is service



AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: Group Delta Consultants, Inc.

Client Project Name: Yucca / LA1301B

Attention: Alycia McCord
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Vikas Patel

Approved for release on 04/08/2019 by:
Vikas Patel
Project Manager

ResultLink ▶

Email your PM ▶

Eurofins Calscience (Calscience) certifies that the test results provided in this report meet all NELAC Institute requirements for parameters for which accreditation is required or available. Any exceptions to NELAC Institute requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

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Work Order Number: 19-04-0222

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Work Order: 19-04-0222Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 04/03/19. They were assigned to Work Order 19-04-0222.

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.



Calscience

Sample Summary

Client:	Group Delta Consultants, Inc.	Work Order:	19-04-0222
	370 Amapola Avenue, Suite 212	Project Name:	Yucca / LA1301B
	Torrance, CA 90501-7243	PO Number:	LA1301B
		Date/Time Received:	04/03/19 11:45
		Number of Containers:	1

Attn: Alycia McCord

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
Sludge-03-TB	19-04-0222-1	04/02/19 09:30	1	Sludge


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Calscience

Detections Summary

Client: Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Work Order: 19-04-0222
Project Name: Yucca / LA1301B
Received: 04/03/19

Attn: Alycia McCord

Page 1 of 2

Client SampleID

Analyte	Result	Qualifiers	RL	Units	Method	Extraction
Sludge-03-TB (19-04-0222-1)						
Antimony	6.46		0.746	mg/kg	EPA 6010B	EPA 3050B
Arsenic	19.3		0.746	mg/kg	EPA 6010B	EPA 3050B
Barium	238		0.498	mg/kg	EPA 6010B	EPA 3050B
Cadmium	14.6		0.498	mg/kg	EPA 6010B	EPA 3050B
Chromium	17.4		0.249	mg/kg	EPA 6010B	EPA 3050B
Cobalt	2.74		0.249	mg/kg	EPA 6010B	EPA 3050B
Copper	93.6		0.498	mg/kg	EPA 6010B	EPA 3050B
Lead	10000		4.98	mg/kg	EPA 6010B	EPA 3050B
Molybdenum	0.616		0.249	mg/kg	EPA 6010B	EPA 3050B
Nickel	4.03		0.249	mg/kg	EPA 6010B	EPA 3050B
Vanadium	0.815		0.249	mg/kg	EPA 6010B	EPA 3050B
Zinc	2230		0.995	mg/kg	EPA 6010B	EPA 3050B
Cadmium	0.419		0.100	mg/L	EPA 6010B	EPA 1311
Lead	619		0.500	mg/L	EPA 6010B	EPA 1311
C9-C10	8100		4900	mg/kg	EPA 8015B (M)	EPA 3550B
C19-C20	7100		4900	mg/kg	EPA 8015B (M)	EPA 3550B
C21-C22	21000		4900	mg/kg	EPA 8015B (M)	EPA 3550B
C23-C24	37000		4900	mg/kg	EPA 8015B (M)	EPA 3550B
C25-C28	73000		4900	mg/kg	EPA 8015B (M)	EPA 3550B
C29-C32	59000		4900	mg/kg	EPA 8015B (M)	EPA 3550B
C33-C36	31000		4900	mg/kg	EPA 8015B (M)	EPA 3550B
C37-C40	8900		4900	mg/kg	EPA 8015B (M)	EPA 3550B
C6-C44 Total	260000		4900	mg/kg	EPA 8015B (M)	EPA 3550B
Benzene	110		100	ug/L	EPA 8260B	EPA 1311
Toluene	780		100	ug/L	EPA 8260B	EPA 1311
1,2,4-Trimethylbenzene	170		100	ug/L	EPA 8260B	EPA 1311
p/m-Xylene	400		200	ug/L	EPA 8260B	EPA 1311
o-Xylene	200		100	ug/L	EPA 8260B	EPA 1311
Benzene	6100		5000	ug/kg	EPA 8260B	EPA 5030C
n-Butylbenzene	26000		5000	ug/kg	EPA 8260B	EPA 5030C
sec-Butylbenzene	5200		5000	ug/kg	EPA 8260B	EPA 5030C
Ethylbenzene	40000		5000	ug/kg	EPA 8260B	EPA 5030C
Isopropylbenzene	6100		5000	ug/kg	EPA 8260B	EPA 5030C
Naphthalene	150000		50000	ug/kg	EPA 8260B	EPA 5030C
n-Propylbenzene	25000		5000	ug/kg	EPA 8260B	EPA 5030C
Toluene	110000		5000	ug/kg	EPA 8260B	EPA 5030C
1,2,4-Trimethylbenzene	200000		5000	ug/kg	EPA 8260B	EPA 5030C
1,3,5-Trimethylbenzene	59000		5000	ug/kg	EPA 8260B	EPA 5030C

* MDL is shown



Calscience

Detections Summary

Client: Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Work Order: 19-04-0222
Project Name: Yucca / LA1301B
Received: 04/03/19

Attn: Alycia McCord

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Client SampleID

<u>Analyte</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>Units</u>	<u>Method</u>	<u>Extraction</u>
p/m-Xylene	190000		5000	ug/kg	EPA 8260B	EPA 5030C
o-Xylene	84000		5000	ug/kg	EPA 8260B	EPA 5030C

Subcontracted analyses, if any, are not included in this summary.


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* MDL is shown

Analytical Report

Group Delta Consultants, Inc.
 370 Amapola Avenue, Suite 212
 Torrance, CA 90501-7243

Date Received: 04/03/19
 Work Order: 19-04-0222
 Preparation: EPA 3550B
 Method: EPA 8015B (M)
 Units: mg/kg

Project: Yucca / LA1301B

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Sludge-03-TB	19-04-0222-1-A	04/02/19 09:30	Sludge	GC 50	04/03/19	04/04/19 02:18	190403B04

Parameter	Result	RL	DF	Qualifiers
C6	ND	4900	200	
C7	ND	4900	200	
C8	ND	4900	200	
C9-C10	8100	4900	200	
C11-C12	ND	4900	200	
C13-C14	ND	4900	200	
C15-C16	ND	4900	200	
C17-C18	ND	4900	200	
C19-C20	7100	4900	200	
C21-C22	21000	4900	200	
C23-C24	37000	4900	200	
C25-C28	73000	4900	200	
C29-C32	59000	4900	200	
C33-C36	31000	4900	200	
C37-C40	8900	4900	200	
C41-C44	ND	4900	200	
C6-C44 Total	260000	4900	200	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	104	61-145	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0222
Preparation: EPA 3550B
Method: EPA 8015B (M)
Units: mg/kg

Project: Yucca / LA1301B

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-15-490-3548	N/A	Solid	GC 50	04/03/19	04/03/19 19:39	190403B04

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	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0222
Preparation: EPA 3050B
Method: EPA 6010B
Units: mg/kg

Project: Yucca / LA1301B

Page 1 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Sludge-03-TB	19-04-0222-1-A	04/02/19 09:30	Sludge	ICP 8300	04/03/19	04/03/19 21:09	190402L04

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Antimony	6.46	0.746	0.995	
Arsenic	19.3	0.746	0.995	
Barium	238	0.498	0.995	
Beryllium	ND	0.249	0.995	
Cadmium	14.6	0.498	0.995	
Chromium	17.4	0.249	0.995	
Cobalt	2.74	0.249	0.995	
Copper	93.6	0.498	0.995	
Molybdenum	0.616	0.249	0.995	
Nickel	4.03	0.249	0.995	
Selenium	ND	0.746	0.995	
Silver	ND	0.249	0.995	
Thallium	ND	0.746	0.995	
Vanadium	0.815	0.249	0.995	
Zinc	2230	0.995	0.995	

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Lead	10000	4.98	9.95	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

Group Delta Consultants, Inc.
 370 Amapola Avenue, Suite 212
 Torrance, CA 90501-7243

Date Received: 04/03/19
 Work Order: 19-04-0222
 Preparation: EPA 3050B
 Method: EPA 6010B
 Units: mg/kg

Project: Yucca / LA1301B

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	097-01-002-27722	N/A	Solid	ICP 8300	04/02/19	04/03/19 14:42	190402L04

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.

Analytical Report

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0222
Preparation: EPA 1311
Method: EPA 6010B
Units: mg/L

Project: Yucca / LA1301B

Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Sludge-03-TB	19-04-0222-1-A	04/02/19 09:30	Sludge	ICP 8300	04/03/19	04/05/19 16:29	190405LA1A

Comment(s): - The analysis was performed on a TCLP extract of the sample.

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Cadmium	0.419	0.100	1.00	
Lead	619	0.500	1.00	

Method Blank	099-14-021-2913	N/A	Aqueous	ICP 8300	04/03/19	04/05/19 16:19	190405LA1A
---------------------	------------------------	------------	----------------	-----------------	-----------------	-----------------------	-------------------

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Cadmium	ND	0.100	1.00	
Lead	ND	0.500	1.00	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

Group Delta Consultants, Inc.
 370 Amapola Avenue, Suite 212
 Torrance, CA 90501-7243

Date Received: 04/03/19
 Work Order: 19-04-0222
 Preparation: EPA 7471A Total
 Method: EPA 7471A
 Units: mg/kg

Project: Yucca / LA1301B

Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Sludge-03-TB	19-04-0222-1-A	04/02/19 09:30	Sludge	Mercury 07	04/04/19	04/04/19 13:56	190404L01

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Mercury	ND	0.0820	1.00	

Method Blank	099-16-272-4519	N/A	Solid	Mercury 07	04/04/19	04/04/19 11:56	190404L01
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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Mercury	ND	0.0820	1.00	



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Analytical Report

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0222
Preparation: EPA 3545
Method: EPA 8082
Units: ug/kg

Project: Yucca / LA1301B

Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Sludge-03-TB	19-04-0222-1-A	04/02/19 09:30	Sludge	GC 58	04/03/19	04/04/19 16:43	190403L06

Comment(s): - The reporting limit is elevated resulting from matrix interference.

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Aroclor-1016	ND	250	5.00	
Aroclor-1221	ND	250	5.00	
Aroclor-1232	ND	250	5.00	
Aroclor-1242	ND	250	5.00	
Aroclor-1248	ND	250	5.00	
Aroclor-1254	ND	250	5.00	
Aroclor-1260	ND	250	5.00	
Aroclor-1262	ND	250	5.00	
Aroclor-1268	ND	250	5.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
Decachlorobiphenyl	64	24-168	
2,4,5,6-Tetrachloro-m-Xylene	120	25-145	

Method Blank	099-12-535-5150	N/A	Solid	GC 58	04/03/19	04/04/19 06:34	190403L06
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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Aroclor-1016	ND	50	1.00	
Aroclor-1221	ND	50	1.00	
Aroclor-1232	ND	50	1.00	
Aroclor-1242	ND	50	1.00	
Aroclor-1248	ND	50	1.00	
Aroclor-1254	ND	50	1.00	
Aroclor-1260	ND	50	1.00	
Aroclor-1262	ND	50	1.00	
Aroclor-1268	ND	50	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
Decachlorobiphenyl	90	24-168	
2,4,5,6-Tetrachloro-m-Xylene	92	25-145	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0222
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/kg

Project: Yucca / LA1301B

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Sludge-03-TB	19-04-0222-1-A	04/02/19 09:30	Sludge	GC/MS CC	04/03/19	04/04/19 20:50	190404L031

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Acetone	ND	130000	500	
Benzene	6100	5000	500	
Bromobenzene	ND	5000	500	
Bromochloromethane	ND	5000	500	
Bromodichloromethane	ND	5000	500	
Bromoform	ND	5000	500	
Bromomethane	ND	25000	500	
2-Butanone	ND	50000	500	
n-Butylbenzene	26000	5000	500	
sec-Butylbenzene	5200	5000	500	
tert-Butylbenzene	ND	5000	500	
Carbon Disulfide	ND	50000	500	
Carbon Tetrachloride	ND	5000	500	
Chlorobenzene	ND	5000	500	
Chloroethane	ND	5000	500	
Chloroform	ND	5000	500	
Chloromethane	ND	25000	500	
2-Chlorotoluene	ND	5000	500	
4-Chlorotoluene	ND	5000	500	
Dibromochloromethane	ND	5000	500	
1,2-Dibromo-3-Chloropropane	ND	10000	500	
1,2-Dibromoethane	ND	5000	500	
Dibromomethane	ND	5000	500	
1,2-Dichlorobenzene	ND	5000	500	
1,3-Dichlorobenzene	ND	5000	500	
1,4-Dichlorobenzene	ND	5000	500	
Dichlorodifluoromethane	ND	5000	500	
1,1-Dichloroethane	ND	5000	500	
1,2-Dichloroethane	ND	5000	500	
1,1-Dichloroethene	ND	5000	500	
c-1,2-Dichloroethene	ND	5000	500	
t-1,2-Dichloroethene	ND	5000	500	
1,2-Dichloropropane	ND	5000	500	
1,3-Dichloropropane	ND	5000	500	
2,2-Dichloropropane	ND	5000	500	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0222
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/kg

Project: Yucca / LA1301B

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
1,1-Dichloropropene	ND	5000	500	
c-1,3-Dichloropropene	ND	5000	500	
t-1,3-Dichloropropene	ND	5000	500	
Ethylbenzene	40000	5000	500	
2-Hexanone	ND	50000	500	
Isopropylbenzene	6100	5000	500	
p-Isopropyltoluene	ND	5000	500	
Methylene Chloride	ND	50000	500	
4-Methyl-2-Pentanone	ND	50000	500	
Naphthalene	150000	50000	500	
n-Propylbenzene	25000	5000	500	
Styrene	ND	5000	500	
1,1,1,2-Tetrachloroethane	ND	5000	500	
1,1,2,2-Tetrachloroethane	ND	5000	500	
Tetrachloroethene	ND	5000	500	
Toluene	110000	5000	500	
1,2,3-Trichlorobenzene	ND	10000	500	
1,2,4-Trichlorobenzene	ND	5000	500	
1,1,1-Trichloroethane	ND	5000	500	
1,1,2-Trichloroethane	ND	5000	500	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	50000	500	
Trichloroethene	ND	5000	500	
1,2,3-Trichloropropane	ND	5000	500	
1,2,4-Trimethylbenzene	200000	5000	500	
Trichlorofluoromethane	ND	50000	500	
1,3,5-Trimethylbenzene	59000	5000	500	
Vinyl Acetate	ND	50000	500	
Vinyl Chloride	ND	5000	500	
p/m-Xylene	190000	5000	500	
o-Xylene	84000	5000	500	
Methyl-t-Butyl Ether (MTBE)	ND	5000	500	
Tert-Butyl Alcohol (TBA)	ND	50000	500	
Diisopropyl Ether (DIPE)	ND	10000	500	
Ethyl-t-Butyl Ether (ETBE)	ND	10000	500	
Tert-Amyl-Methyl Ether (TAME)	ND	10000	500	
Ethanol	ND	250000	500	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	109	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0222
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/kg

Project: Yucca / LA1301B

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<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
Dibromofluoromethane	111	79-133	
1,2-Dichloroethane-d4	107	71-155	
Toluene-d8	104	80-120	

Analytical Report

Group Delta Consultants, Inc.
 370 Amapola Avenue, Suite 212
 Torrance, CA 90501-7243

Date Received: 04/03/19
 Work Order: 19-04-0222
 Preparation: EPA 5030C
 Method: EPA 8260B
 Units: ug/kg

Project: Yucca / LA1301B

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-12-796-15251	N/A	Solid	GC/MS CC	04/04/19	04/04/19 14:26	190404L031

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	12000	50.0	
Benzene	ND	500	50.0	
Bromobenzene	ND	500	50.0	
Bromochloromethane	ND	500	50.0	
Bromodichloromethane	ND	500	50.0	
Bromoform	ND	500	50.0	
Bromomethane	ND	2500	50.0	
2-Butanone	ND	5000	50.0	
n-Butylbenzene	ND	500	50.0	
sec-Butylbenzene	ND	500	50.0	
tert-Butylbenzene	ND	500	50.0	
Carbon Disulfide	ND	5000	50.0	
Carbon Tetrachloride	ND	500	50.0	
Chlorobenzene	ND	500	50.0	
Chloroethane	ND	500	50.0	
Chloroform	ND	500	50.0	
Chloromethane	ND	2500	50.0	
2-Chlorotoluene	ND	500	50.0	
4-Chlorotoluene	ND	500	50.0	
Dibromochloromethane	ND	500	50.0	
1,2-Dibromo-3-Chloropropane	ND	1000	50.0	
1,2-Dibromoethane	ND	500	50.0	
Dibromomethane	ND	500	50.0	
1,2-Dichlorobenzene	ND	500	50.0	
1,3-Dichlorobenzene	ND	500	50.0	
1,4-Dichlorobenzene	ND	500	50.0	
Dichlorodifluoromethane	ND	500	50.0	
1,1-Dichloroethane	ND	500	50.0	
1,2-Dichloroethane	ND	500	50.0	
1,1-Dichloroethene	ND	500	50.0	
c-1,2-Dichloroethene	ND	500	50.0	
t-1,2-Dichloroethene	ND	500	50.0	
1,2-Dichloropropane	ND	500	50.0	
1,3-Dichloropropane	ND	500	50.0	
2,2-Dichloropropane	ND	500	50.0	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0222
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/kg

Project: Yucca / LA1301B

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
1,1-Dichloropropene	ND	500	50.0	
c-1,3-Dichloropropene	ND	500	50.0	
t-1,3-Dichloropropene	ND	500	50.0	
Ethylbenzene	ND	500	50.0	
2-Hexanone	ND	5000	50.0	
Isopropylbenzene	ND	500	50.0	
p-Isopropyltoluene	ND	500	50.0	
Methylene Chloride	ND	5000	50.0	
4-Methyl-2-Pentanone	ND	5000	50.0	
Naphthalene	ND	5000	50.0	
n-Propylbenzene	ND	500	50.0	
Styrene	ND	500	50.0	
1,1,1,2-Tetrachloroethane	ND	500	50.0	
1,1,2,2-Tetrachloroethane	ND	500	50.0	
Tetrachloroethene	ND	500	50.0	
Toluene	ND	500	50.0	
1,2,3-Trichlorobenzene	ND	1000	50.0	
1,2,4-Trichlorobenzene	ND	500	50.0	
1,1,1-Trichloroethane	ND	500	50.0	
1,1,2-Trichloroethane	ND	500	50.0	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	5000	50.0	
Trichloroethene	ND	500	50.0	
1,2,3-Trichloropropane	ND	500	50.0	
1,2,4-Trimethylbenzene	ND	500	50.0	
Trichlorofluoromethane	ND	5000	50.0	
1,3,5-Trimethylbenzene	ND	500	50.0	
Vinyl Acetate	ND	5000	50.0	
Vinyl Chloride	ND	500	50.0	
p/m-Xylene	ND	500	50.0	
o-Xylene	ND	500	50.0	
Methyl-t-Butyl Ether (MTBE)	ND	500	50.0	
Tert-Butyl Alcohol (TBA)	ND	5000	50.0	
Diisopropyl Ether (DIPE)	ND	1000	50.0	
Ethyl-t-Butyl Ether (ETBE)	ND	1000	50.0	
Tert-Amyl-Methyl Ether (TAME)	ND	1000	50.0	
Ethanol	ND	25000	50.0	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	100	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0222
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/kg

Project: Yucca / LA1301B

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<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
Dibromofluoromethane	106	79-133	
1,2-Dichloroethane-d4	105	71-155	
Toluene-d8	101	80-120	

Analytical Report

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0222
Preparation: EPA 1311
Method: EPA 8260B
Units: ug/L

Project: Yucca / LA1301B

Page 1 of 4

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Sludge-03-TB	19-04-0222-1-A	04/02/19 09:30	Sludge	GC/MS QQ	04/03/19	04/05/19 03:32	190404L038

Comment(s): - The analysis was performed on a TCLP extract of the sample.

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Acetone	ND	2000	1.00	
Benzene	110	100	1.00	
Bromobenzene	ND	100	1.00	
Bromochloromethane	ND	200	1.00	
Bromodichloromethane	ND	100	1.00	
Bromoform	ND	500	1.00	
Bromomethane	ND	5000	1.00	
2-Butanone	ND	2000	1.00	
n-Butylbenzene	ND	100	1.00	
sec-Butylbenzene	ND	100	1.00	
tert-Butylbenzene	ND	100	1.00	
Carbon Disulfide	ND	1000	1.00	
Carbon Tetrachloride	ND	50	1.00	
Chlorobenzene	ND	100	1.00	
Chloroethane	ND	300	1.00	
Chloroform	ND	100	1.00	
Chloromethane	ND	1000	1.00	
2-Chlorotoluene	ND	100	1.00	
4-Chlorotoluene	ND	100	1.00	
Dibromochloromethane	ND	200	1.00	
1,2-Dibromo-3-Chloropropane	ND	500	1.00	
1,2-Dibromoethane	ND	100	1.00	
Dibromomethane	ND	100	1.00	
1,2-Dichlorobenzene	ND	100	1.00	
1,3-Dichlorobenzene	ND	100	1.00	
1,4-Dichlorobenzene	ND	100	1.00	
Dichlorodifluoromethane	ND	500	1.00	
1,1-Dichloroethane	ND	100	1.00	
1,2-Dichloroethane	ND	50	1.00	
1,1-Dichloroethene	ND	100	1.00	
c-1,2-Dichloroethene	ND	100	1.00	
t-1,2-Dichloroethene	ND	100	1.00	
1,2-Dichloropropane	ND	100	1.00	
1,3-Dichloropropane	ND	100	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

Group Delta Consultants, Inc.
 370 Amapola Avenue, Suite 212
 Torrance, CA 90501-7243

Date Received: 04/03/19
 Work Order: 19-04-0222
 Preparation: EPA 1311
 Method: EPA 8260B
 Units: ug/L

Project: Yucca / LA1301B

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
2,2-Dichloropropane	ND	100	1.00	
1,1-Dichloropropene	ND	100	1.00	
c-1,3-Dichloropropene	ND	50	1.00	
t-1,3-Dichloropropene	ND	50	1.00	
Ethylbenzene	ND	100	1.00	
2-Hexanone	ND	1000	1.00	
Isopropylbenzene	ND	100	1.00	
p-Isopropyltoluene	ND	100	1.00	
Methylene Chloride	ND	1000	1.00	
4-Methyl-2-Pentanone	ND	1000	1.00	
Naphthalene	ND	1000	1.00	
n-Propylbenzene	ND	100	1.00	
Styrene	ND	100	1.00	
1,1,1,2-Tetrachloroethane	ND	200	1.00	
1,1,2,2-Tetrachloroethane	ND	100	1.00	
Tetrachloroethene	ND	100	1.00	
Toluene	780	100	1.00	
1,2,3-Trichlorobenzene	ND	100	1.00	
1,2,4-Trichlorobenzene	ND	100	1.00	
1,1,1-Trichloroethane	ND	100	1.00	
1,1,2-Trichloroethane	ND	100	1.00	
Trichloroethene	ND	100	1.00	
Trichlorofluoromethane	ND	1000	1.00	
1,2,3-Trichloropropane	ND	500	1.00	
1,2,4-Trimethylbenzene	170	100	1.00	
1,3,5-Trimethylbenzene	ND	100	1.00	
Vinyl Acetate	ND	1000	1.00	
Vinyl Chloride	ND	50	1.00	
p/m-Xylene	400	200	1.00	
o-Xylene	200	100	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	100	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	94	80-120	
Dibromofluoromethane	95	80-126	
1,2-Dichloroethane-d4	101	80-134	
Toluene-d8	102	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

Group Delta Consultants, Inc.
 370 Amapola Avenue, Suite 212
 Torrance, CA 90501-7243

Date Received: 04/03/19
 Work Order: 19-04-0222
 Preparation: EPA 1311
 Method: EPA 8260B
 Units: ug/L

Project: Yucca / LA1301B

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-14-519-1768	N/A	Aqueous	GC/MS QQ	04/03/19	04/04/19 23:13	190404L038

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	2000	1.00	
Benzene	ND	100	1.00	
Bromobenzene	ND	100	1.00	
Bromochloromethane	ND	200	1.00	
Bromodichloromethane	ND	100	1.00	
Bromoform	ND	500	1.00	
Bromomethane	ND	5000	1.00	
2-Butanone	ND	2000	1.00	
n-Butylbenzene	ND	100	1.00	
sec-Butylbenzene	ND	100	1.00	
tert-Butylbenzene	ND	100	1.00	
Carbon Disulfide	ND	1000	1.00	
Carbon Tetrachloride	ND	50	1.00	
Chlorobenzene	ND	100	1.00	
Chloroethane	ND	300	1.00	
Chloroform	ND	100	1.00	
Chloromethane	ND	1000	1.00	
2-Chlorotoluene	ND	100	1.00	
4-Chlorotoluene	ND	100	1.00	
Dibromochloromethane	ND	200	1.00	
1,2-Dibromo-3-Chloropropane	ND	500	1.00	
1,2-Dibromoethane	ND	100	1.00	
Dibromomethane	ND	100	1.00	
1,2-Dichlorobenzene	ND	100	1.00	
1,3-Dichlorobenzene	ND	100	1.00	
1,4-Dichlorobenzene	ND	100	1.00	
Dichlorodifluoromethane	ND	500	1.00	
1,1-Dichloroethane	ND	100	1.00	
1,2-Dichloroethane	ND	50	1.00	
1,1-Dichloroethene	ND	100	1.00	
c-1,2-Dichloroethene	ND	100	1.00	
t-1,2-Dichloroethene	ND	100	1.00	
1,2-Dichloropropane	ND	100	1.00	
1,3-Dichloropropane	ND	100	1.00	
2,2-Dichloropropane	ND	100	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

Group Delta Consultants, Inc.
 370 Amapola Avenue, Suite 212
 Torrance, CA 90501-7243

Date Received: 04/03/19
 Work Order: 19-04-0222
 Preparation: EPA 1311
 Method: EPA 8260B
 Units: ug/L

Project: Yucca / LA1301B

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
1,1-Dichloropropene	ND	100	1.00	
c-1,3-Dichloropropene	ND	50	1.00	
t-1,3-Dichloropropene	ND	50	1.00	
Ethylbenzene	ND	100	1.00	
2-Hexanone	ND	1000	1.00	
Isopropylbenzene	ND	100	1.00	
p-Isopropyltoluene	ND	100	1.00	
Methylene Chloride	ND	1000	1.00	
4-Methyl-2-Pentanone	ND	1000	1.00	
Naphthalene	ND	1000	1.00	
n-Propylbenzene	ND	100	1.00	
Styrene	ND	100	1.00	
1,1,1,2-Tetrachloroethane	ND	200	1.00	
1,1,2,2-Tetrachloroethane	ND	100	1.00	
Tetrachloroethene	ND	100	1.00	
Toluene	ND	100	1.00	
1,2,3-Trichlorobenzene	ND	100	1.00	
1,2,4-Trichlorobenzene	ND	100	1.00	
1,1,1-Trichloroethane	ND	100	1.00	
1,1,2-Trichloroethane	ND	100	1.00	
Trichloroethene	ND	100	1.00	
Trichlorofluoromethane	ND	1000	1.00	
1,2,3-Trichloropropane	ND	500	1.00	
1,2,4-Trimethylbenzene	ND	100	1.00	
1,3,5-Trimethylbenzene	ND	100	1.00	
Vinyl Acetate	ND	1000	1.00	
Vinyl Chloride	ND	50	1.00	
p/m-Xylene	ND	200	1.00	
o-Xylene	ND	100	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	100	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	95	80-120	
Dibromofluoromethane	95	80-126	
1,2-Dichloroethane-d4	100	80-134	
Toluene-d8	103	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Quality Control - Spike/Spike Duplicate

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0222
Preparation: EPA 3550B
Method: EPA 8015B (M)

Project: Yucca / LA1301B

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
19-03-2270-9	Sample	Solid	GC 50	04/03/19	04/03/19 23:18	190403S04
19-03-2270-9	Matrix Spike	Solid	GC 50	04/03/19	04/03/19 20:19	190403S04
19-03-2270-9	Matrix Spike Duplicate	Solid	GC 50	04/03/19	04/03/19 20:39	190403S04

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	463.7	116	457.6	114	64-130	1	0-15	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0222
Preparation: EPA 3050B
Method: EPA 6010B

Project: Yucca / LA1301B

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
19-04-0150-1	Sample	Solid	ICP 8300	04/02/19	04/03/19 14:48	190402S04
19-04-0150-1	Matrix Spike	Solid	ICP 8300	04/02/19	04/03/19 14:50	190402S04
19-04-0150-1	Matrix Spike Duplicate	Solid	ICP 8300	04/02/19	04/03/19 14:52	190402S04

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Antimony	ND	25.00	6.929	28	4.246	17	50-115	48	0-20	3,4
Arsenic	1.062	25.00	28.94	111	25.31	97	75-125	13	0-20	
Barium	56.96	25.00	95.08	152	93.45	146	75-125	2	0-20	3
Beryllium	0.7540	25.00	28.72	112	26.46	103	75-125	8	0-20	
Cadmium	ND	25.00	28.66	115	26.33	105	75-125	8	0-20	
Chromium	5.050	25.00	33.67	114	32.71	111	75-125	3	0-20	
Cobalt	3.417	25.00	29.99	106	27.79	97	75-125	8	0-20	
Copper	3.332	25.00	30.99	111	29.01	103	75-125	7	0-20	
Lead	14.64	25.00	38.97	97	35.54	84	75-125	9	0-20	
Molybdenum	ND	25.00	25.70	103	22.38	90	75-125	14	0-20	
Nickel	2.787	25.00	30.65	111	28.31	102	75-125	8	0-20	
Selenium	ND	25.00	25.53	102	23.05	92	75-125	10	0-20	
Silver	ND	12.50	13.79	110	12.74	102	75-125	8	0-20	
Thallium	ND	25.00	27.49	110	25.00	100	75-125	9	0-20	
Vanadium	17.20	25.00	43.60	106	45.10	112	75-125	3	0-20	
Zinc	16.03	25.00	45.63	118	42.00	104	75-125	8	0-20	

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RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0222
Preparation: EPA 1311
Method: EPA 6010B

Project: Yucca / LA1301B

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
19-03-1306-17	Sample	Solid	ICP 8300	04/04/19	04/05/19 16:24	190405SA1
19-03-1306-17	Matrix Spike	Solid	ICP 8300	04/04/19	04/05/19 16:25	190405SA1
19-03-1306-17	Matrix Spike Duplicate	Solid	ICP 8300	04/04/19	04/05/19 16:27	190405SA1

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Cadmium	ND	5.000	5.045	101	5.198	104	82-124	3	0-7	
Lead	ND	5.000	4.908	98	5.188	104	84-120	6	0-7	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



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Quality Control - Spike/Spike Duplicate

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0222
Preparation: EPA 7471A Total
Method: EPA 7471A

Project: Yucca / LA1301B

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
19-04-0190-3	Sample	Solid	Mercury 07	04/04/19	04/04/19 12:01	190404S01
19-04-0190-3	Matrix Spike	Solid	Mercury 07	04/04/19	04/04/19 12:03	190404S01
19-04-0190-3	Matrix Spike Duplicate	Solid	Mercury 07	04/04/19	04/04/19 12:05	190404S01

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Mercury	ND	0.8350	0.7589	91	0.7848	94	71-137	3	0-14	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



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Quality Control - Spike/Spike Duplicate

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0222
Preparation: EPA 3545
Method: EPA 8082

Project: Yucca / LA1301B

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
19-04-0094-1	Sample	Solid	GC 58	04/03/19	04/04/19 07:46	190403S06
19-04-0094-1	Matrix Spike	Solid	GC 58	04/03/19	04/04/19 07:10	190403S06
19-04-0094-1	Matrix Spike Duplicate	Solid	GC 58	04/03/19	04/04/19 07:28	190403S06

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Aroclor-1016	ND	100.0	92.50	92	89.00	89	50-135	4	0-20	
Aroclor-1260	ND	100.0	91.00	91	92.00	92	50-135	1	0-20	

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RPD: Relative Percent Difference. CL: Control Limits



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Quality Control - Spike/Spike Duplicate

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0222
Preparation: EPA 5030C
Method: EPA 8260B

Project: Yucca / LA1301B

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
19-04-0247-1	Sample	Solid	GC/MS CC	04/04/19	04/04/19 14:54	190404S008
19-04-0247-1	Matrix Spike	Solid	GC/MS CC	04/04/19	04/04/19 15:37	190404S008
19-04-0247-1	Matrix Spike Duplicate	Solid	GC/MS CC	04/04/19	04/04/19 16:06	190404S008

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Benzene	ND	50.00	59.58	119	46.91	94	61-127	24	0-20	4
Carbon Tetrachloride	ND	50.00	68.64	137	52.32	105	51-135	27	0-29	3
Chlorobenzene	ND	50.00	54.80	110	44.29	89	57-123	21	0-20	4
1,2-Dibromoethane	ND	50.00	52.62	105	46.05	92	64-124	13	0-20	
1,2-Dichlorobenzene	ND	50.00	55.24	110	44.02	88	35-131	23	0-25	
1,2-Dichloroethane	ND	50.00	56.72	113	48.38	97	80-120	16	0-20	
1,1-Dichloroethene	ND	50.00	64.87	130	50.29	101	47-143	25	0-25	
Ethylbenzene	ND	50.00	56.62	113	44.41	89	57-129	24	0-22	4
Toluene	ND	50.00	57.84	116	46.79	94	63-123	21	0-20	4
Trichloroethene	ND	50.00	56.41	113	44.44	89	44-158	24	0-20	4
Vinyl Chloride	ND	50.00	64.59	129	58.78	118	49-139	9	0-47	
p/m-Xylene	ND	100.0	116.1	116	91.74	92	70-130	23	0-30	
o-Xylene	ND	50.00	56.95	114	45.34	91	70-130	23	0-30	
Methyl-t-Butyl Ether (MTBE)	ND	50.00	44.83	90	37.90	76	57-123	17	0-21	
Tert-Butyl Alcohol (TBA)	ND	250.0	256.4	103	242.5	97	30-168	6	0-34	
Diisopropyl Ether (DIPE)	ND	50.00	57.11	114	47.42	95	57-129	19	0-20	
Ethyl-t-Butyl Ether (ETBE)	ND	50.00	48.01	96	39.78	80	55-127	19	0-20	
Tert-Amyl-Methyl Ether (TAME)	ND	50.00	52.75	106	45.25	91	58-124	15	0-20	
Ethanol	ND	500.0	563.6	113	537.1	107	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

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0222
Preparation: EPA 1311
Method: EPA 8260B

Project: Yucca / LA1301B

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
19-04-0158-1	Sample	Solid	GC/MS QQ	04/03/19	04/04/19 23:42	190404S010
19-04-0158-1	Matrix Spike	Solid	GC/MS QQ	04/03/19	04/05/19 00:11	190404S010
19-04-0158-1	Matrix Spike Duplicate	Solid	GC/MS QQ	04/03/19	04/05/19 00:39	190404S010

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Benzene	ND	5000	4604	92	4635	93	78-120	1	0-20	
Carbon Tetrachloride	ND	5000	4174	83	4373	87	67-139	5	0-20	
Chlorobenzene	ND	5000	4665	93	4757	95	80-120	2	0-20	
1,2-Dibromoethane	ND	5000	4657	93	4794	96	80-123	3	0-20	
1,2-Dichlorobenzene	ND	5000	4563	91	4660	93	76-120	2	0-20	
1,2-Dichloroethane	ND	5000	4991	100	5135	103	76-130	3	0-20	
1,1-Dichloroethene	ND	5000	4522	90	4556	91	70-130	1	0-27	
Ethylbenzene	ND	5000	4691	94	4789	96	73-127	2	0-20	
Toluene	ND	5000	4908	98	4977	100	72-126	1	0-20	
Trichloroethene	ND	5000	4634	93	4663	93	74-122	1	0-20	
Vinyl Chloride	ND	5000	5219	104	5059	101	65-131	3	0-24	
p/m-Xylene	ND	10000	9529	95	9705	97	70-130	2	0-30	
o-Xylene	ND	5000	4786	96	4926	99	70-130	3	0-30	
Methyl-t-Butyl Ether (MTBE)	ND	5000	3615	72	3745	75	69-123	4	0-20	

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RPD: Relative Percent Difference. CL: Control Limits

Quality Control - LCS

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0222
Preparation: EPA 3550B
Method: EPA 8015B (M)

Project: Yucca / LA1301B

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-15-490-3548	LCS	Solid	GC 50	04/03/19	04/03/19 19:59	190403B04
<u>Parameter</u>		<u>Spike Added</u>	<u>Conc. Recovered</u>	<u>LCS %Rec.</u>	<u>%Rec. CL</u>	<u>Qualifiers</u>
TPH as Diesel		400.0	453.6	113	75-123	



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Quality Control - LCS/LCSD

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0222
Preparation: EPA 3050B
Method: EPA 6010B

Project: Yucca / LA1301B

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Quality Control Sample ID	Type	Matrix		Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
097-01-002-27722	LCS	Solid		ICP 8300	04/02/19	04/03/19 14:45	190402L04			
097-01-002-27722	LCSD	Solid		ICP 8300	04/02/19	04/03/19 14:46	190402L04			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Antimony	25.00	25.15	101	24.39	98	80-120	73-127	3	0-20	
Arsenic	25.00	24.40	98	24.40	98	80-120	73-127	0	0-20	
Barium	25.00	26.30	105	26.18	105	80-120	73-127	0	0-20	
Beryllium	25.00	23.42	94	23.33	93	80-120	73-127	0	0-20	
Cadmium	25.00	25.44	102	25.39	102	80-120	73-127	0	0-20	
Chromium	25.00	25.00	100	24.73	99	80-120	73-127	1	0-20	
Cobalt	25.00	25.75	103	25.60	102	80-120	73-127	1	0-20	
Copper	25.00	24.46	98	24.39	98	80-120	73-127	0	0-20	
Lead	25.00	26.43	106	25.86	103	80-120	73-127	2	0-20	
Molybdenum	25.00	24.72	99	24.24	97	80-120	73-127	2	0-20	
Nickel	25.00	25.83	103	25.70	103	80-120	73-127	1	0-20	
Selenium	25.00	24.13	97	23.44	94	80-120	73-127	3	0-20	
Silver	12.50	12.01	96	11.92	95	80-120	73-127	1	0-20	
Thallium	25.00	25.67	103	24.57	98	80-120	73-127	4	0-20	
Vanadium	25.00	23.72	95	23.56	94	80-120	73-127	1	0-20	
Zinc	25.00	25.47	102	24.98	100	80-120	73-127	2	0-20	

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

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0222
Preparation: EPA 1311
Method: EPA 6010B

Project: Yucca / LA1301B

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Quality Control Sample ID	Type	Matrix		Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number		
099-14-021-2913	LCS	Aqueous		ICP 8300	04/03/19	04/05/19 16:21	190405LA1A		
099-14-021-2913	LCSD	Aqueous		ICP 8300	04/03/19	04/05/19 16:22	190405LA1A		
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Cadmium	5.000	5.057	101	5.122	102	80-120	1	0-20	
Lead	5.000	4.956	99	5.019	100	80-120	1	0-20	

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RPD: Relative Percent Difference. CL: Control Limits

Quality Control - LCS

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0222
Preparation: EPA 7471A Total
Method: EPA 7471A

Project: Yucca / LA1301B

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-16-272-4519	LCS	Solid	Mercury 07	04/04/19	04/04/19 11:59	190404L01
<u>Parameter</u>		<u>Spike Added</u>	<u>Conc. Recovered</u>	<u>LCS %Rec.</u>	<u>%Rec. CL</u>	<u>Qualifiers</u>
Mercury		0.8350	0.7234	87	85-121	



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Quality Control - LCS

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0222
Preparation: EPA 3545
Method: EPA 8082

Project: Yucca / LA1301B

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-12-535-5150	LCS	Solid	GC 58	04/03/19	04/04/19 06:52	190403L06
<u>Parameter</u>		<u>Spike Added</u>	<u>Conc. Recovered</u>	<u>LCS %Rec.</u>	<u>%Rec. CL</u>	<u>Qualifiers</u>
Aroclor-1016		100.0	92.50	92	50-135	
Aroclor-1260		100.0	87.00	87	50-135	

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Quality Control - LCS

Group Delta Consultants, Inc.
 370 Amapola Avenue, Suite 212
 Torrance, CA 90501-7243

Date Received: 04/03/19
 Work Order: 19-04-0222
 Preparation: EPA 5030C
 Method: EPA 8260B

Project: Yucca / LA1301B

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-12-796-15251	LCS	Solid	GC/MS CC	04/04/19	04/04/19 13:00	190404L031
Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	ME CL	Qualifiers
Benzene	50.00	56.24	112	80-120	73-127	
Carbon Tetrachloride	50.00	61.80	124	65-137	53-149	
Chlorobenzene	50.00	52.77	106	80-120	73-127	
1,2-Dibromoethane	50.00	52.90	106	80-120	73-127	
1,2-Dichlorobenzene	50.00	52.03	104	80-120	73-127	
1,2-Dichloroethane	50.00	54.52	109	80-120	73-127	
1,1-Dichloroethene	50.00	54.91	110	68-128	58-138	
Ethylbenzene	50.00	53.71	107	80-120	73-127	
Toluene	50.00	54.39	109	80-120	73-127	
Trichloroethene	50.00	54.65	109	80-120	73-127	
Vinyl Chloride	50.00	56.95	114	67-127	57-137	
p/m-Xylene	100.0	109.8	110	75-125	67-133	
o-Xylene	50.00	54.15	108	75-125	67-133	
Methyl-t-Butyl Ether (MTBE)	50.00	42.05	84	70-124	61-133	
Tert-Butyl Alcohol (TBA)	250.0	266.4	107	73-121	65-129	
Diisopropyl Ether (DIPE)	50.00	53.56	107	69-129	59-139	
Ethyl-t-Butyl Ether (ETBE)	50.00	45.09	90	70-124	61-133	
Tert-Amyl-Methyl Ether (TAME)	50.00	51.31	103	74-122	66-130	
Ethanol	500.0	612.4	122	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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Quality Control - LCS

Group Delta Consultants, Inc.
370 Amapola Avenue, Suite 212
Torrance, CA 90501-7243

Date Received: 04/03/19
Work Order: 19-04-0222
Preparation: EPA 5030C
Method: EPA 8260B

Project: Yucca / LA1301B

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-14-519-1768	LCS	Aqueous	GC/MS QQ	04/04/19	04/04/19 21:47	190404L038
<u>Parameter</u>	<u>Spike Added</u>	<u>Conc. Recovered</u>	<u>LCS %Rec.</u>	<u>%Rec. CL</u>	<u>ME CL</u>	<u>Qualifiers</u>
Benzene	50.00	44.04	88	80-120	73-127	
Carbon Tetrachloride	50.00	40.98	82	66-138	54-150	
Chlorobenzene	50.00	44.71	89	80-120	73-127	
1,2-Dibromoethane	50.00	45.38	91	80-120	73-127	
1,2-Dichlorobenzene	50.00	43.88	88	80-120	73-127	
1,2-Dichloroethane	50.00	48.28	97	80-129	72-137	
1,1-Dichloroethene	50.00	44.45	89	71-131	61-141	
Ethylbenzene	50.00	44.97	90	80-123	73-130	
Toluene	50.00	46.78	94	79-121	72-128	
Trichloroethene	50.00	44.70	89	80-120	73-127	
Vinyl Chloride	50.00	52.69	105	70-136	59-147	
p/m-Xylene	100.0	91.53	92	75-125	67-133	
o-Xylene	50.00	46.06	92	75-125	67-133	
Methyl-t-Butyl Ether (MTBE)	50.00	37.10	74	72-126	63-135	

Total number of LCS compounds: 14

Total number of ME compounds: 0

Total number of ME compounds allowed: 1

LCS ME CL validation result: Pass



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Sample Analysis Summary Report

Work Order: 19-04-0222

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<u>Method</u>	<u>Extraction</u>	<u>Chemist ID</u>	<u>Instrument</u>	<u>Analytical Location</u>
EPA 6010B	EPA 3050B	771	ICP 8300	1
EPA 6010B	EPA 3050B	1080	ICP 8300	1
EPA 6010B	EPA 1311	771	ICP 8300	1
EPA 7471A	EPA 7471A Total	868	Mercury 07	1
EPA 8015B (M)	EPA 3550B	972	GC 50	1
EPA 8082	EPA 3545	669	GC 58	1
EPA 8260B	EPA 1311	486	GC/MS QQ	2
EPA 8260B	EPA 5030C	823	GC/MS CC	2

Glossary of Terms and Qualifiers

Work Order: 19-04-0222

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<u>Qualifiers</u>	<u>Definition</u>
*	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.

Date APR: 1, 2019
Page 1 of 1

WO NO. / LAB USE ONLY

19-04-0222

LABORATORY CLIENT: Group Delta Consultants

ADDRESS: 370 Anna Polk Ave, Suite 212

CITY: Durham STATE: NC ZIP: 27601

TEL: (919) 370-5100 E-MAIL: groupdelta.com

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.:	Cyca / 1A1010			P.O. NO.:	1A1010
PROJECT CONTACT:	Alma Mored			LAB CONTACT OR QUOTE NO.:	Vik Patel
GLOBAL ID:	LOG CODE:			SAMPLER(S) / PRINT:	A Mored
REQUESTED ANALYSES Please check box or fill in blank as needed.					

[illegible][illegible]

SAMPLE RECEIPT CHECKLIST

COOLER 1 OF 1

CLIENT: GROUP DELTA

DATE: 04/03/2019

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)

Thermometer ID: SC6 (CF: -0.2°C); Temperature (w/o CF): 3.8°C (w/ CF): 3.6°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: 671

CUSTODY SEAL:

Cooler ☐ Present and Intact ☐ Present but Not Intact ☒ Not Present ☐ N/A

Checked by: 671

Sample(s) ☐ Present and Intact ☐ Present but Not Intact ☒ Not Present ☐ N/A

Checked by: 876

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 ☐ VOAh ☐ VOAna₂ ☐ 100PJ ☐ 100PJna₂ ☐ 125AGB ☐ 125AGBh ☐ 125AGBp ☐ 125PB ☐ 125PBznna (pH__9)

☐ 250AGB ☐ 250CGB ☐ 250CGBs (pH__2) ☐ 250PB ☐ 250PBn (pH__2) ☐ 500AGB ☐ 500AGJ ☐ 500AGJs (pH__2) ☐ 500PB

☐ 1AGB ☐ 1AGBna₂ ☐ 1AGBs (pH__2) ☐ 1AGBs (O&G) ☐ 1PB ☐ 1PBna (pH__12) ☐ _____ ☐ _____ ☐ _____

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 = HNO₃, na = NaOH, na₂ = Na₂S₂O₃, p = H₃PO₄, Labeled/Checked by: 876

s = H₂SO₄, u = ultra-pure, x = Na₂SO₃+NaHSO₄.H₂O, znna = Zn (CH₃CO₂)₂ + NaOH Reviewed by: 360

APPENDIX H

SOIL DISPOSAL MANIFESTS

Manifest

SOIL SAFE OF CA - TPST

Non-Hazardous Soils

↓ Manifest # ↓

Date of Shipment: 1/1 Responsible for Payment: Transport Truck #: Facility #: A07 Approval Number: A5-0283 Load #: 10011

Generator's Name and Billing Address: 1770 IVAR, LLC
1895 BROADWAY, 3RD FLOOR
NEW YORK, NY 10023

Generator's Phone #: 212-876-4800

Person to Contact:

FAX#:

Customer Account Number:

Consultant's Name and Billing Address:

Consultant's Phone #:

Person to Contact:

FAX#:

Customer Account Number:

Generation Site (Transport from): (name & address)
1770 IVAR ST., LLC
6334 YUCCA STREET
LOS ANGELES, CA 90028

Site Phone #:

Person to Contact:

FAX#:

Designated Facility (Transport to): (name & address)
SOIL SAFE
12328 HIBISCUS AVENUE
ADELANTO, CA 92301

Facility Phone #: (800) 882-8001

Person to Contact: JOE PROVANSAL

FAX#:

(760) 248-8004

Transporter Name and Mailing Address:
BELSHIRE
25971 TOWNE CENTRE DRIVE
FOOTHILL RANCH, CA 92610
BESI: 305728

Transporter's Phone #: 949-460-5200

Person to Contact: LARRY MOOTHART

FAX#:

949-460-5210

CAR000183913

450647

Customer Account Number:

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐	7 DM	SOIL	45800	111420	4380
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐					2.19

List any exception to items listed above:

Scale Ticket #

151630

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name: Generator ☐ Consultant ☐ Signature and date: Month Day Year
MILA TAYLOR WAKEMI 4 11 19

Transporter's certification: I/We acknowledge receipt of the soil referenced above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that the soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name: Brandon Rogers Signature and date: Month Day Year
4 11 19

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name: J. PROVANSAL / BILL BISHOP / BARRY MEEK Signature and date: 4-23-19

Manifest

SOIL SAFE OF CA - TPST Non-Hazardous Soils

↓ Manifest # ↓

Date of Shipment: 1/1 Responsible for Payment: 1 Transport Truck #: A07 Facility #: A5-0283 Approval Number: 1003 Load #

Generator's Name and Billing Address: 1770 IVAR, LLC
1995 BROADWAY, 3RD FLOOR
NEW YORK, NY 10023

Generator's Phone #: 212-875-4900

Person to Contact:

FAX#:

Customer Account Number

Consultant's Name and Billing Address:

Consultant's Phone #:

Person to Contact:

FAX#:

Customer Account Number

Generation Site (Transport from): (name & address)
1770 IVAR ST., LLC
6334 YUCCA STREET
LOS ANGELES, CA 90028

Site Phone #:

Person to Contact:

FAX#:

Designated Facility (Transport to): (name & address)
SOIL SAFE
12328 HIBISCUS AVENUE
ADELANTO, CA 92301

Facility Phone #:
(800) 862-8001

Person to Contact:
JOE PROVANSAL

FAX#:
(760) 246-8004

Transporter Name and Mailing Address:
BELSHIRE
25971 TOWNE CENTRE DRIVE
FOOTHILL RANCH, CA 92610
BESI: 305728

Transporter's Phone #:
949-460-5200

Person to Contact:
LARRY MOOTHART

FAX#:
949-460-5210

Customer Account Number
CAR000183813
450647

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0-10% ☐ 10-20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐	<u>6 DM</u>	<u>Soil</u>	<u>45150</u>	<u>41460</u>	<u>3760</u>
Sand ☐ Organic ☐ Clay ☐ Other ☐	0-10% ☐ 10-20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐					<u>1.88</u>

List any exception to items listed above:

Scale Ticket # 151632

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name: Generator ☒ Consultant ☐
MIA JOSEPH MARIANI

Signature and date: [Signature] Month 4 Day 11 Year 2019

Transporter's certification: I/We acknowledge receipt of the soil referenced above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that the soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name: Brandon Rogers

Signature and date: [Signature] Month 4 Day 11 Year 19

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name: J. PROVANSAL / BILL BISHOP / BARRY MEEK

Signature and date: [Signature] 4-23-19

Please print or type.

TRANSPORTER COPY

Manifest

SOIL SAFE OF CA - TPST Non-Hazardous Soils

↓ Manifest # ↓

Date of Shipment: 1 / 1	Responsible for Payment:	Transport Truck #: 184929	Facility #: A07	Approval Number: A5-0283	Load #: 13
----------------------------	--------------------------	------------------------------	--------------------	-----------------------------	---------------

Generator's Name and Billing Address: 1770 IVAR, LLC 1895 BROADWAY, 3RD FLOOR NEW YORK, NY 10023	Generator's Phone #: 212-875-4900	
	Person to Contact:	
	FAX#:	Customer Account Number

Consultant's Name and Billing Address:	Consultant's Phone #:	
	Person to Contact:	
	FAX#:	Customer Account Number

Generation Site (Transport from): (name & address) 1770 IVAR ST., LLC 6334 YUCCA STREET LOS ANGELES, CA 90028	Site Phone #:	
	Person to Contact:	
	FAX#:	

Designated Facility (Transport to): (name & address) SOIL SAFE 12328 HIBISCUS AVENUE ADELANTO, CA 92301	Facility Phone #: (800) 862-8001	
	Person to Contact: JOE PROVANSAL	
	FAX#: (760) 246-8004	

Transporter Name and Mailing Address: BELSHIRE 25971 TOWNE CENTRE DRIVE FOOTHILL RANCH, CA 92610 Bin # 128944 PL BESI: 306494	Transporter's Phone #: 949-460-5200	CAR000183913
	Person to Contact: LARRY MOOTHART	450647
	FAX#: 949-460-5210	Customer Account Number

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐	10 yds	Soil	50080	37600	12480
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐					10.13

List any exception to items listed above: Scale Ticket # 152064

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name: Generator ☐ Consultant ☐ Total PM 12/1/19	Signature and date: 	Month: 5 Day: 8 Year: 19
--	-------------------------	--------------------------

Transporter's certification: I/We acknowledge receipt of the soil referenced above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that the soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name: Joe/Sale John	Signature and date: 	Month: 5 Day: 8 Year: 19
--------------------------------------	-------------------------	--------------------------

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:		
Print or Type Name: J. PROVANSAL / BILL BISHOP / BARRY MEEK	Signature and date: 	5-8-19

Please print or type.

TRANSPORTER COPY

Soil Safe of California, Inc.

12328 Hibiscus Ave. Adelanto, CA 92301

ADE 152066**WEIGHMASTER CERTIFICATE**

THIS IS TO CERTIFY that the following described commodity was weighed, measured, or counted by a weighmaster, whose signature is on this certificate, who is a recognized authority of accuracy, as prescribed by Chapter 7 (commencing with Section 12700) of Division 5 of the California Business and Professional Code, administered by the Division of Measurement Standards of the California Department of Food and Agriculture.

Manifest Number: A5-0283 Load #: 3

5/8/2019

Generator Site Information:

1770 Ivar Street., LLC

6334 Yucca Street

Los Angeles, Ca 90028

Weighmaster Weighed at:

SOIL SAFE OF CALIFORNIA, INC..

12328 HIBISCUS AVE

ADELANTO, CA 92301

			<u>Lbs</u>	<u>Tons</u>
Joe Provansal	Time In: 9:03:57 AM	Gross Weight:	50080	25.04 Manual Wt
Joe Provansal	Time out: 9:21:11 AM	Tare Weight:	37820	18.91 Manual Wt
		Net Weight:	12260	6.13

Truck Number: 929**Trailer Number:** 732**Commodity:** Non Haz - Solids**Driver on Gross and Tare Transporter:** Besi - Jayson

APPENDIX I

TANK RINSATE DISPOSAL MANIFESTS

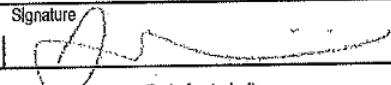
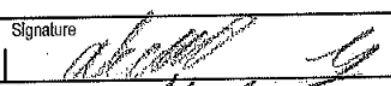
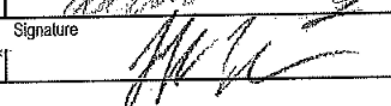
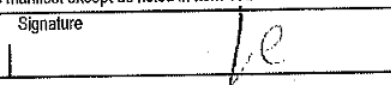
Please print or type.

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number CAP000295071	2. Page 1 of 1	3. Emergency Response Phone (212) 675-4900	4. Manifest Tracking Number 013711595 FLE		
5. Generator's Name and Mailing Address 1770 Ivar, LLC 1995 Broadway, 3rd Floor New York, NY 10023		Generator's Site Address (if different than mailing address) 1770 Ivar St., LLC 6334 Yucca Street Los Angeles, CA 90028					
Generator's Phone: (212) 675-4900		U.S. EPA ID Number CARD000183913					
6. Transporter 1 Company Name BELSHIRE		U.S. EPA ID Number CAT080016116					
7. Transporter 2 Company Name Nieto Anderson Trucking, Inc.		U.S. EPA ID Number CAT080013352					
8. Designated Facility Name and Site Address DeMenno Kerdoon 2000 N. Alameda St. Compton, CA 90222		Facility's Phone: (310) 537-7100					
9a. HM	9b. U.S. DOT Description (Including Proper Shipping Name; Hazard Class, ID Number, and Packing Group (if any))		10. Containers No.	Type	11. Total Quantity	12. Unit Wt/Vol	13. Waste Codes
-X	1. RQ, UN1993, Waste Flammable Liquid, n.o.s. (Lead), 3, PG II		1	DM	30	G	D001 D008 724
	2.						
	3.						
	4.						
14. Special Handling Instructions and Additional Information ERG# 128 Flammable Liquid (motor oil) with lead WEAR ALL APPROPRIATE PROTECTIVE CLOTHING BESI: 307294 1X55							
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.							
Generator's/Officer's Printed/Typed Name JOSEPH MARIANI JR			Signature 			Month Day Year 5 24 19	
16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit: Date leaving U.S.:							
17. Transporter Acknowledgment of Receipt of Materials Transporter 1 Printed/Typed Name: Abelino Garcia Signature: Month Day Year: 5 24 19 Transporter 2 Printed/Typed Name: Jeff Wyrick Signature: Month Day Year: 5 30 19							
18. Discrepancy 18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection Manifest Reference Number: 18b. Alternate Facility (or Generator) U.S. EPA ID Number: Facility's Phone: 18c. Signature of Alternate Facility (or Generator) Month Day Year:							
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems) 1. H039 2. 3. 4.							
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a Printed/Typed Name: Emilio Morales Signature: Month Day Year: 10 5 30 19							

Please print or type.

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number CAP000295071		2. Page 1 of 1	3. Emergency Response Phone (212) 675-4900		4. Manifest Tracking Number 013711594 FLE	
5. Generator's Name and Mailing Address 1770 Ivar, LLC 1995 Broadway, 3rd Floor New York, NY 10023				Generator's Site Address (if different than mailing address) 1770 Ivar St., LLC 6334 Yucca Street Los Angeles, CA 90028				
Generator's Phone: (212) 675-4900				U.S. EPA ID Number CAR000183913				
6. Transporter 1 Company Name BELSHIRE				U.S. EPA ID Number CAT080016116				
7. Transporter 2 Company Name Nieto and Sons Trucking, Inc				U.S. EPA ID Number CAT080013352				
8. Designated Facility Name and Site Address DeMenno Kardon 2000 N. Alameda St. Compton, CA 90222				Facility's Phone: (310) 537-7100				
9a. U.S. DOT Description (Including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))				10. Containers		11. Total Quantity		12. Unit
				No. Type		Wt/Vol.		13. Waste Codes
1. RQ, UN1993, Waste Flammable Liquid, n.e.c.s., (Lead), 3, PG II				2 DM		110		D001 D006 724
2.								
3.								
4.								
14. Special Handling Instructions and Additional Information ERG#126 Flammable liquid (motor oil) with Lead				WEAR ALL APPROPRIATE PROTECTIVE CLOTHING BESI: 307294 2XSS				
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.								
Generator's/Officer's Printed/Typed Name JOSEPH MARINIAU				Signature 		Month Day Year 5 24 19		
16. International Shipments ☐ Import to U.S. ☐ Export from U.S.				Port of entry/exit: Date leaving U.S.:				
17. Transporter Acknowledgment of Receipt of Materials								
Transporter 1 Printed/Typed Name Abelino Garcia				Signature 		Month Day Year 5 24 19		
Transporter 2 Printed/Typed Name Jeff Wyrick				Signature 		Month Day Year 5 30 19		
18. Discrepancy								
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection								
Manifest Reference Number:								
18b. Alternate Facility (or Generator) U.S. EPA ID Number								
Facility's Phone:								
18c. Signature of Alternate Facility (or Generator) Month Day Year								
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)								
1. H039			2.			3.		
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a								
Printed/Typed Name Emilio Morales				Signature 		Month Day Year 10 5 19		