

March 27, 2017

Mr. Paul Cho, P.G.
California Regional Water Quality Control Board, Los Angeles Region
320 W. 4th Street, Suite 200
Los Angeles, CA 90013

Re: ***Revised Human Health Risk Assessment for No Further Action Determination for Shallow Soil at the Eastern 15-Acre Parcel.***
Defense Fuel Support Point Norwalk
15306 Norwalk Boulevard
Norwalk, California

Dear Mr. Cho,

On behalf of the DLA Installation Support for Energy (DLA) and SFPP, L.P. (SFPP), The Source Group, Inc., a division of Apex Companies, LLC (SGI), and CH2M have prepared this combined cover letter to present the findings of additional sampling and analysis and revised human health risk assessment (HHRA) for shallow soil present within the eastern 15-acre parcel of the Defense Fuel Supply Point Norwalk (the Site) located at 15306 Norwalk Boulevard in Norwalk, California. This submittal follows the California Regional Water Quality Control Board, Los Angeles Region (RWQCB) February 2, 2017 request for a revised HHRA, following earlier HHRA submittals by DLA and SFPP (see below for a list of cited documents and correspondence).

Background

The Site formerly operated as a DLA fuel storage and distribution facility.

DLA operational equipment previously included ten 80,000- and two 55,000-barrel aboveground storage tanks (ASTs) that were used to store and distribute various grades of jet propellants, including JP-4, JP-5 and JP-8. The site was placed into permanent closure in 1999 and the ASTs were drained, cleaned, and marine chemist certified. Within the tank farm, the individual tank lateral pipes were drained, disconnected, and individually cleaned. The ASTs, concrete pads, and connecting pipeline systems were demolished and removed in 2011 and 2012.

SFPP previously operated a pump station near the south-central area of the Site. The pump station was used to transfer fuel to and from the Site, and as an in-line pumping station for portions of the SFPP pipeline network. The pump station was decommissioned in 2001 and then removed in 2016 and 2017 as part of SFPP's pipeline relocation project. Three SFPP pipelines heading eastward along the southern boundary of the property (one of which bends at the southeastern corner of the Site and continues northward within the eastern easement) remain in service and continue to convey refined petroleum fuels including gasoline, diesel, and jet fuel.

In preparation for future re-use of the property, remedial action plans were developed by both SFPP and DLA and submitted and approved by the RWQCB. The remedial plans were developed assuming future industrial/commercial property use. Following U.S. Congressional action, it was determined that the approximately 15 eastern-most acres of the site would be conveyed to the City of Norwalk for recreational park

use. However, the eastern 15-acres has been zoned by the City of Norwalk as industrial/commercial as part of the land use and environmental restrictions for this portion of the Site. Figure 1 presents a site map and the location of the eastern 15-acre boundary.

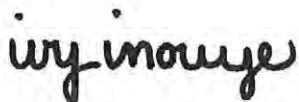
Human Health Risk Assessment

After completion of the requisite soil remediation activities, in August 2016, DLA and SFPP compiled site data and presented the findings of risk calculations in two separate documents with the objective of obtaining regulatory closure status of the shallow (0 to 10 feet) soils within the eastern 15 acres of the Site. Following receipt of a RWQCB and Office of Environmental Health Hazard Assessment (OEHHA) request for additional investigation and modified evaluation (in a letter dated February 2, 2017), additional sampling was conducted by DLA and SFPP immediately thereafter between February 14 and February 24, 2017. The attached submittals (Attachments A and B) present the results of these supplemental investigations and updated risk evaluations to support a No Further Action determination for shallow soil in the eastern 15-acre portion of the Site.

The attached revised HHRAs, based on additional data and modified evaluation requested by the RWQCB and OEHHA, document that granting No Further Action status for the shallow soil in the eastern 15-acre part of the Site is warranted.

Please contact the undersigned if you have any questions or comments.

Sincerely,
SGI



Ivy Inouye
Senior Toxicologist

CH2M



John Lowe, CIH
Vapor Intrusion Consultant



Neil F. Irish, P.G.
Principal Geologist



Dan Jablonski
Sr. Project Manager

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Attachment B *Results of Additional Soil and Soil Vapor Sampling and Revised Human Health Risk Assessment to Support Shallow Soil Closure for the Eastern 15-Acre Parcel, Defense Fuel Support Norwalk, Norwalk, California, CH2M, March 16, 2017.*

Documents Cited:

California Regional Water Quality Control Board, Los Angeles Region. 2017 *Requirement for Revised Human Health Risk Assessment for No Further Action Determination for Shallow Soil at the Eastern 15-Acre Parcel*. February 2.

California Regional Water Quality Control Board, Los Angeles Region (RWQCB). 2016. Letter to Ms. Carol Devier-Heeney and Mr. Steve Defibaugh. *Review of Human Health Risk Assessment for No Further Action Determination for Shallow Soil at the Eastern 15-Acre Parcel Shallow Soil*. Defense Fuel Support Point Norwalk, 15306 Norwalk Boulevard, Norwalk, California (SCP No. 0286A/B, Site ID No. 16638 and 204DM00). August 30.

CH2M. 2016. *Results of Additional Soil and Soil Vapor Sampling and Human Health Risk Assessment to Support Shallow Soil Closure for the Eastern 15-Acre Parcel, Defense Fuel Support Point, Norwalk, California*. June 28.

The Source Group, Inc. (SGI). 2016. *Human Health Risk Assessment DLA-Energy Responsible Area of the Eastern Portion, Defense Fuel Support Point Norwalk, 15306 Norwalk Boulevard, Norwalk, California*. May 31.

SGI and CH2M. 2016 *Response to the Office of Environmental Health Hazard Assessment (OEHHA) Comments on the: Human Health Risk Assessment, DLA-Energy Responsible Area of Eastern Portion, dated May 31, 2016, and Results of Additional Soil and Soil Vapor Sampling and Human Health Risk Assessment to Support Shallow Soil Closure for the Eastern 15-Acre Parcel, dated June 28, 2016*. October 12.

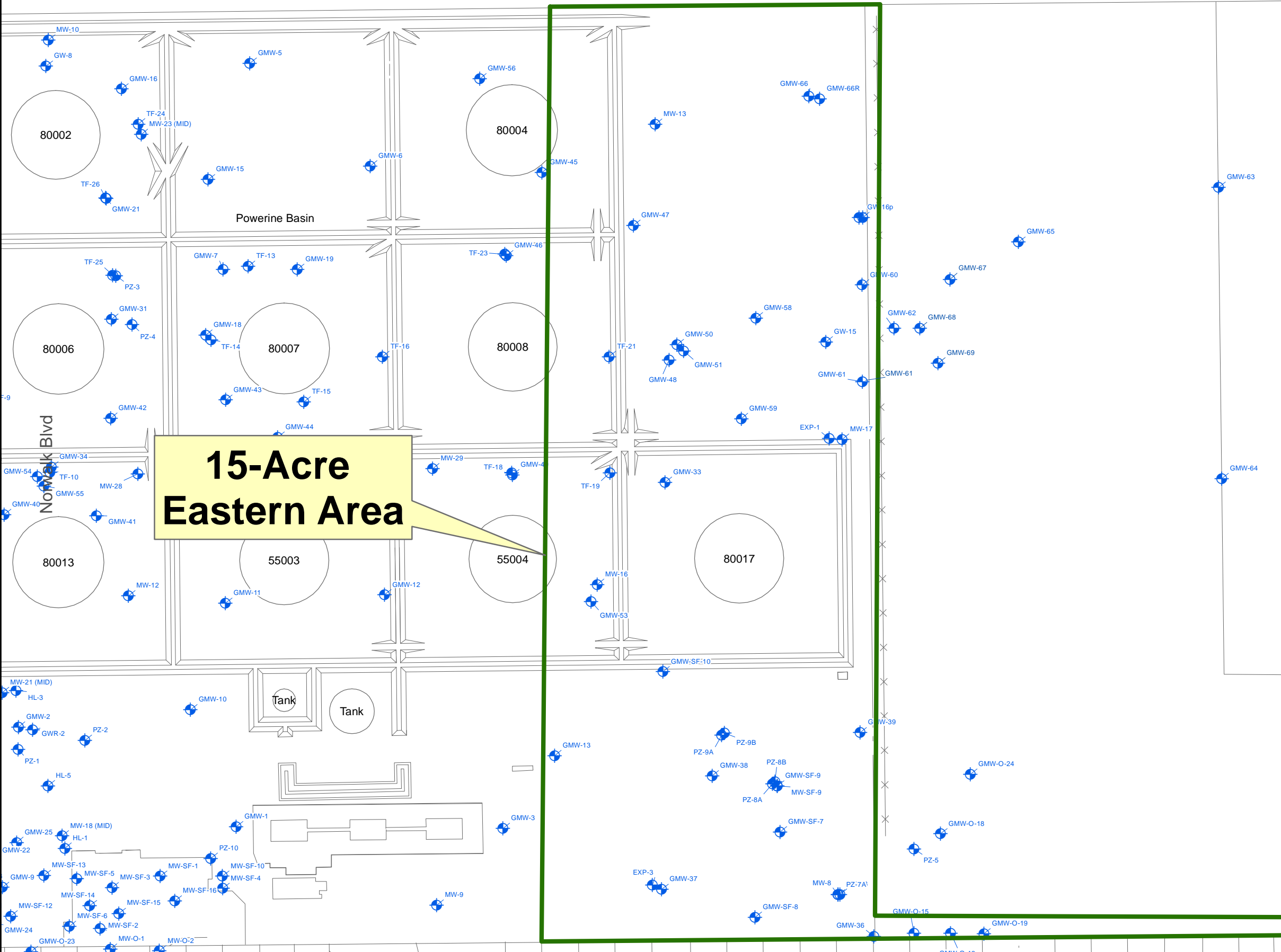
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FIGURES




Document Path: R:\DLA-Norwalk\GIS Maps\GWM Well Map\Fig-1_DFSPN_15_Acre_Eastern_Portion_101116.mxd

Excelsior Dr



15-Acre Eastern Area

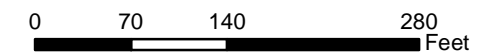
Legend

-  Former Above Ground Storage Tanks
-  Existing Groundwater Monitoring / Extraction Wells
-  15 Acre Expanded Holifield Park Area



DFSP Norwalk
15306 Norwalk Boulevard
Norwalk, California

Project Number:	Date:	Drawn By:	Approved By:
04-NDLA-007	10/11/2016	PW	PP



15-Acre Eastern Portion



1962 Freeman Avenue
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Figure
1

ATTACHMENT A

Revised Human Health Risk Assessment, DLA Responsible Area of the Eastern Portion of DFSP Norwalk, 15306 Norwalk Blvd., Norwalk, California, The Source Group, Inc., March 17, 2017.

**REVISED HUMAN HEALTH RISK ASSESSMENT
DLA-ENERGY RESPONSIBLE AREA OF THE
EASTERN PORTION**

**Defense Fuel Support Point Norwalk
15306 Norwalk Boulevard
Norwalk, California**

04-NDLA-007

Prepared For:

Defense Logistics Agency - Energy
8725 John J. Kingman Road
Fort Belvoir, Virginia 22060-6222

Prepared By:



1962 Freeman Avenue
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March 20, 2017

Prepared By:

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Ivy Inouye
Senior Toxicologist

Reviewed By:

A handwritten signature in blue ink that reads 'Neil F. Irish'.

Neil F. Irish, P.G.
Principal Geologist



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ACRONYMS

95UCL	95-percent upper confidence limit of the mean
mg/kg	milligram per kilogram
µg/L	microgram per liter
µg/m ³	microgram per cubic meter
ft/ft	foot/foot
ft/day	feet per day
AST	aboveground storage tank
bgs	below ground surface
BMP	best management practice
BTEX	benzene, toluene, ethylbenzene, and xylene
CalEPA	California Environmental Protection Agency
CAM	California Assessment Metal
CHHSL	California Human Health Screening Level
COPC	chemical of potential concern
CSM	conceptual site model
DFSP	Defense Fuel Support Point
DLA-Energy	Defense Logistics Agency-Energy
DTSC	Department of Toxic Substances Control
EPC	exposure point concentration
ESL	Environmental Screening Level
HASP	Health and Safety Plan
HHRA	human health risk assessment
KMEP	Kinder Morgan Energy Partner
K _{oc}	organic-carbon partition coefficient
LARWQCB	Los Angeles Regional Water Quality Control Board
MTBE	methyl tert-butyl ether
OEHHA	Office of Health Hazard Assessment
PAH	polyaromatic hydrocarbon
PCB	polychlorinated biphenyl
RAP	Remedial Action Plan
RME	reasonable maximum exposure
RSL	Regional Screening Level
SFRWQCB	San Francisco Bay Regional Water Quality Control Board
SGI	The Source Group, Inc.
SMP	Site Management Plan
SVE	soil vapor extraction
SVM	soil vapor monitoring
SVOC	semi-volatile organic compound
TBA	tert-butyl alcohol
TPH	total petroleum hydrocarbons
USAF	U.S. Air Force
USEPA	U.S. Environmental Protection Agency
VOC	volatile organic compound

1.0 INTRODUCTION

This report presents the Revised Human Health Risk Assessment (HHRA) conducted for the Eastern Portion of the former Defense Fuel Support Point (DFSP) Norwalk facility located at 15306 Norwalk Boulevard in Norwalk, California (Site; Figure 1). The Eastern Portion of the Site wherein the Defense Logistics Agency-Energy (DLA-Energy) is responsible for the restoration of shallow soils and the subject of this HHRA is depicted on Figure 2. This report is submitted on behalf of the DLA-Energy, lessee of the property currently owned by the United States Air Force (USAF). In support of closure for the 15 eastern acres of the Site, this HHRA focuses on shallow soil (0 to 10 feet below ground surface [bgs]) and soil gas collected in the Eastern Portion of the Site.

This Revised HHRA incorporates comments provided by Office of Environmental Human Health Assessment (OEHHA) in a letter dated August 2, 2016, and transmitted by the Los Angeles Regional Water Quality Control Board (LARWQCB) in a letter dated August 30, 2016. A letter response to OEHHA's comments was prepared and submitted to LARWQCB on October 12, 2016.

Between March 2015 and February 2016, soil remediation was performed to address contaminants detected in soil and soil gas, principally total petroleum hydrocarbons (TPH), and volatile organic carbons (VOCs). The remediation was performed under the regulatory oversight of the Los Angeles Regional Water Quality Control Board (LARWQCB) and in accordance with the *Soil Remedial Action Plan* (RAP), dated November 30, 2014, and the *Addendum to the Soil Remedial Action Plan* (Addendum), dated December 10, 2014. Authorization to proceed with the RAP was provided in the letter from the LARWQCB entitled *Review of Soil Remedial Action Plan and Soil Management Plan*, dated January 7, 2015. A *Shallow Soil Closure Report – Defense Logistics Agency- Energy (DLA-Energy) Responsible Area of the Eastern Portion* (Closure Report), dated April 18, 2016, was prepared and submitted to the LARWQCB to document the completion of shallow soil remediation activities on the Eastern Portion of the Site. Copies of other project-related work plans, documents, and communications from the LARWQCB are available on the Geotracker website for the Site.

At the request of the LARWQCB and OEHHA, DLA-Energy and Kinder Morgan Energy Partner (KMEP) conducted additional Site investigations in the southeastern corner of the 15-acre Eastern Portion of the Site. In February 2017, DLA-Energy installed and sampled four soil vapor monitoring (SVM) probes (SVM-24 through SVM-27) and KMEP installed and sampled four SVM probes (SVM-20 through SVM-23) in the KMEP operational area. KMEP's investigation results) in the KMEP operational area are provided in a separate report. DLA-Energy's additional Site investigation is included in this Revised HHRA.

As a requirement for soil closure by the LARWQCB, this HHRA was specifically prepared for the Eastern Portion of the Site for land conveyance to the City of Norwalk. This HHRA is based on the data presented in the Closure Report (SGI, 2016) and the February 2017 additional Site investigation (Appendix A). The purpose of the HHRA was to evaluate potential exposures to identify whether any residual soil and soil gas contamination poses a risk to human health. Initially, the soil and soil

gas data were screened with Site-specific cleanup goals and acceptable regulatory screening levels. Based on the results of the screening-level risk assessment, a Site-specific risk assessment may be necessary to further evaluate the need for additional remediation or engineering solutions to adequately protect human health.

The remainder of this report is presented as follows:

- Background (Section 2.0);
- Conceptual Site Model (Section 3.0);
- Human Health Screening-Level Risk Assessment (Section 4.0); and
- Summary and Conclusions (Section 5.0).

References and limitations are provided in Sections 6.0 and 7.0, respectively.

2.0 BACKGROUND

The Site previously contained ten 80,000 and two 55,000-barrel aboveground storage tanks (ASTs) that were used to store and distribute jet propellants 5 and 8 (JP-5 and JP-8). JP-4 was also historically stored at the Site. The former truck loading racks are located in the south-central portion of the Site and occupy approximately one acre (Figure 2). In the past, fuel was transferred from the facility via tanker trucks filled at the loading racks, but by the early 1990s, jet fuel was no longer being routinely transferred from the facility via tanker trucks. Subsequently, a 10-inch diameter, government owned multi-product pipeline, carried fuel from DFSP San Pedro to DFSP Norwalk and a 6-inch diameter pipeline carried fuel from DFSP Norwalk to the former El Toro Marine Corp Air Station. Investigations at the Site found that releases had occurred at several locations at the facility. The Site was placed into permanent closure in 1999 and the ASTs were drained, cleaned, and marine chemist certified. Within the tank farm, the individual tank lateral pipes were drained, disconnected, and individually cleaned. The ASTs, concrete pads, and connecting pipeline systems were demolished and removed in 2011 and 2012. Following removal of the tanks and pads, soil confirmation samples were collected from beneath the AST locations and included in the Concrete Demolition and Soil Confirmation Sampling Completion Report (Parsons, 2013).

In preparation for future re-use of the property, remedial action plans were developed, submitted, and approved by the LARWQCB. The remedial plans were developed assuming future industrial/commercial property re-use. However, following U.S. Congressional action, it was determined that the approximately 15 eastern-most acres of the Site would be conveyed to the City of Norwalk for recreational public park use. Therefore, the Closure Report and this HHRA were prepared specifically to address the 15 eastern acres of the Site to allow closure status of the shallow (0 to 10 feet bgs) soils to be granted.

An approximate 2-acre area leased by KMEP is operated as a pump station along the southern property line. Known releases of automotive gasoline and other fuels have occurred at the KMEP lease area and have been detailed in reports prepared by KMEP. Most recently (February 2003), the 24-inch pipeline running along the southern edge of the Site released hydrocarbons near a block valve located at the southeast corner of the Site. The leak was repaired, and the pipeline returned to operation. KMEP investigated this release and has since installed a soil vapor extraction (SVE) well to remediate the soil in this area. As depicted on Figure 2, KMEP is responsible for the remediation of shallow soil in this portion of the eastern side of the Site.

Figure 3 shows the multiple wells and borings installed at the Site during the numerous investigations and remediation activities conducted during the past 10 years (Section 2.3).

2.1 Regional Geology

DFSP Norwalk is located between the Montebello Forebay and the Downey Plain in the Central Basin pressure area. Approximately 50 to 60 feet of alluvium (primarily sand, gravel, silt, and clay)

cover the underlying Lakewood Formation in this area. The Lakewood Formation is composed of marine and continental gravel, sand, silt, and clay deposits. The San Pedro Formation underlies the area, approximately 300 feet below grade, and consists of marine and continental gravel, sandy silt, silt, and clay deposits¹.

Lithologic logs of borings drilled during previous investigations indicate that sediments beneath the Site consist of clayey silt, sandy silt, silty sand, medium to coarse-grained sand, and deeper coarse-grained sand with granitic cobbles. The top of a clay layer (preliminarily identified as the uppermost sediment layer of the Bellflower aquitard) was encountered at a depth of approximately 55 to 65 feet during previous investigations. Detailed cross-sections of the Site are available in the Closure Report (SGI, 2016).

2.2 Hydrogeology

A shallow, semi-perched aquifer, consisting of silts, fine to medium sands, and coarse sands, exists in the alluvial sediments underlying the Site. Groundwater from this semi-perched aquifer is found between 31 and 34 feet below grade. Off-site groundwater depth ranges from approximately 26 to 30 feet below grade. The shallow aquifer is approximately 30 to 35 feet thick, based on the inferred presence of the clay layer at approximately 55 to 65 feet below grade. The October 2016 Groundwater Equipotential and Gradient Map is included as Figure 4, and suggests that local groundwater flow within the semi-perched aquifer is to the northwest, with an estimated horizontal hydraulic gradient of approximately 0.012 foot per foot (ft/ft) in the south-central plume area to nearly flat in the truck loading and tank farm north-central areas. Hydraulic conductivity of the unconfined alluvial aquifer has been determined to range between 12 and 73 feet per day (ft/day) in the south-central area to 20 to 60 ft/day in the southeastern area.

The Bellflower Aquitard, composed of approximately 70 feet of interbedded silts and clays with minor gravel and sand, separates shallow groundwater from the deeper Exposition and Gage aquifers of the Lakewood Formation. Near the Site, the Exposition and Gage aquifers are found at 150 and 250 feet below grade, respectively². Due to low well yields, local water service companies do not make extensive use of aquifers in the Lakewood Formation. The deeper San Pedro Formation includes the following aquifers, listed from shallowest to deepest: Hollydale, Jefferson, Lynwood, and Silverado.

Groundwater flow in the underlying Exposition aquifer is generally to the east-southeastward with a horizontal hydraulic gradient of approximately 0.0003 ft/ft. This southeastward flow direction in the Exposition aquifer is roughly opposite the general groundwater flow direction of the uppermost groundwater zone. These distinctly different hydraulic conditions, consistently interpreted over time

¹ California Department of Water Resources, Planned Utilization of the Groundwater Basins of the Coastal Plains of Los Angeles County, Groundwater Geology, Appendix A, Bulletin 104, 1961.

² GTI, Assessment Report, Tank Farm Area, DFSP, October 21, 1994.

above and below the Bellflower aquitard, support the interpretation that the Bellflower aquitard in this area is laterally continuous and has a relatively low vertical hydraulic conductivity.

The Site is located within West Coast Subbasin of the Coastal Plain in Los Angeles County. Groundwater within this basin is designated for municipal, industrial service supply, industrial process supply, and agricultural. The nearest municipal supply well is Park Company Water Well #29K that is located approximately 0.5 miles northwest of the northwest corner of DFSP Norwalk. Water Well #29K is screened in the Silverado Aquifer with a screened production zone approximately between 684 and 718 feet below ground surface.

2.3 Previous Site Investigations and Distribution of Constituents of Concern

The lateral and vertical extent of hydrocarbon affected soil and groundwater at the Site was initially investigated by various consultants from 1985 to 1995. These investigations identified three principal areas that were impacted with hydrocarbons. The impacted areas consisted of two liquid hydrocarbon plumes in the northern portion of the facility; a dissolved-phase hydrocarbon plume beneath the central portion of the facility; and hydrocarbon impacts located in the unsaturated soil:

- The two liquid hydrocarbon plumes in the northern portion of the facility consisted of a larger plume and a smaller plume. The larger plume was located beneath tanks 80007 and 80008, southeast of tank 80002, and north and northeast of tank 55004. The smaller plume was located beneath tank 8006 and extended to the southwest of this tank (north central and northwestern plume).
- The northern and southern dissolved phase hydrocarbon plume and benzene plume commingled beneath the central portion of the facility to form one dissolved-phase plume. The benzene plume did not extend to the northern or western boundaries of the Site. But the dissolved phase hydrocarbon plume extended beyond Site boundaries. The off-site portion of this dissolved-phase hydrocarbon plume was not associated with the releases from the tank farm.
- Lastly, vadose zone hydrocarbon impacts were identified near tanks 80006, 80007, 80008, and 55004, and these impacts were located either in the deeper zone or in the shallower zone.

Based on these investigations, a final RAP was submitted in 1995, which identified the areas of concern, and proposed a remedial strategy. However, after the implementation of the RAP, additional areas of concern were identified, including several within the Eastern Portion of Site. A detailed summary of previous investigation and remediation activities specifically completed in the DLA-Energy responsible area of the Eastern Portion of the Site is provided in the Closure Report (SGI, 2016). Figures 5, 6, and 7 show excavation areas and backfill origins in the Eastern Portion of the Site. The following is a brief summary of the nature and extent of contaminants based on previous investigations:

- From 1994 to 2015, prior to soil remediation activities, two rounds of soil gas sampling and approximately 25 years of semi-annual groundwater monitoring and sampling indicated that prior operations at the Site resulted in the contamination of soil, groundwater, and soil gas in localized areas within the eastern 15 acres of the Site. The areas of soil impact within the 15 eastern acres included (1) the northeast corner suspected former settling ponds, (2), the eastern boundary and eastern boundary off-site area (within Holifield Park), (3) AST 80008, and (4) AST 55004. The constituents of concern included select fuel-related VOCs and TPH as gasoline and fuel product.
- From December 2010 through December 2011, prior to soil vapor remediation, soil gas monitoring was conducted for five consecutive quarters. The soil gas samples were collected from seven VMPs that border the northern site property boundary and three vapor monitoring locations in Holifield Park along the eastern park boundary, bordering Dolland Elementary School. The VOC detected at the highest concentration was isobutane at 0.45 µg/L at 15 feet bgs from the fourth quarter 2011. Benzene was not detected. The maximum concentrations of these detected soil gas VOCs were used in a *Human Health Risk Assessment Model* for the Site and found to pose no unacceptable health risks to potential residential, commercial or industrial Site receptors.
- In July 2014, a total of 82 soil samples were collected from 24 direct-push borings throughout the tank farm for California Assessment Metal (CAM) metals evaluation in July 2014. Metal analytical results were compared with California Human Health Screening Levels (CHHSLs) for industrial/commercial settings and in the case of arsenic, the California Environmental Protection Agency (CalEPA) Department of Toxic Substances Control (DTSC) screening level of 12 mg/kg. Either the 95-percent upper confidence limit of the mean (95UCL) or maximum detected concentration for metals did not exceed the commercial/industrial screening levels. Additional soil samples were collected from several soil stockpiles representing the eastern and western portions of the Site and submitted for analysis of polychlorinated biphenyls (PCBs) and semi-volatile organic compounds (SVOCs). PCBs and SVOCs were not detected at or above laboratory reporting limits in any of the analyzed soil samples, indicating that these compounds are not constituents of concern at this Site.
- Based on groundwater monitoring and sampling during previous investigations, the constituents of concern for groundwater beneath the Site include TPH and several VOCs including (benzene, toluene, ethylbenzene, and total xylenes [BTEX]) compounds, methyl tert-butyl ether (MTBE), and tert-butyl alcohol (TBA).
- During March 2016, soil gas data was collected from the Site at depths of 5 and 10 feet bgs. On the Eastern Portion of the Site, 29 soil gas samples were collected at 26 locations at 5 feet bgs and 27 soil gas samples were collected from 26 locations at 10 feet bgs, respectively. The constituents of concern for soil gas include BTEX compounds. The soil gas probe locations are shown on Figure 8.

2.4 February 2017 Additional Site Investigation

In February 2017, at the request of the LARWQCB and OEHHA, DLA-Energy and KMEP conducted additional Site investigations in the southeastern corner of the 15-acre Eastern Portion of the Site. As shown on Figure 8, DLA-Energy installed and sampled four SVM probes (SVM-24 through SVM-27) and KMEP installed and sampled four SVM probes (SVM-20 through SVM-23). On February 15, 2017, four soil borings (SB-24 through SB-27) were advanced using direct push technologies. The methods and procedures of the February 2017 additional Site investigation are described in Appendix A.

Soil samples were collected from each boring at 5 and 10 feet bgs and submitted to the laboratory for analysis for TPH by EPA method 8015 and VOCs by EPA Method 8260B. No TPH or VOC compounds were present at concentrations above the laboratory reporting limits in any soil sample (Appendix B, Tables B-3 and B-4.)

Four SVM probes were installed at a depth of 5 and 10 feet bgs at probe locations SVM-24 through SVM-27. On February 16, 2017, after allowing the subsurface to equilibrate the requisite 24 hours following installation of the probes, soil gas samples were collected from SVM probes SVM-24 through SVM-27 at 5 and 10 feet bgs. The samples were analyzed for VOCs by EPA Method TO-15. Laboratory analysis of the soil gas samples indicated that several VOCs, including BTEX, were present at concentrations above laboratory reporting limits. The analytical results are summarized in Appendix C, Table C-2.

3.0 CONCEPTUAL SITE MODEL

This section describes the conceptual site model (CSM) for the Eastern Portion of the DFSP Norwalk facility, based on the nature and extent of constituents of concern and current and future land uses. Based on the data collected during remediation activities in 2015/2016 and additional Site investigation in 2017 for the Eastern Portion of the DFSP Norwalk facility, a human health screening-level risk assessment was conducted for the Site. To develop a conceptual understanding of the Site, information regarding potential chemical source, chemical release and transport mechanisms, locations of potentially exposed human receptors, and potential exposure routes were assessed. This information is outlined schematically in a CSM shown on Figure 9. The CSM assists in quantifying potential impacts to human health by identifying potentially exposed hypothetical receptors and the most likely ways they might be exposed to chemicals at the Site.

As defined by the U.S. Environmental Protection Agency (USEPA, 1989), all of the following four components are necessary for a chemical exposure pathway to be considered complete and for chemical exposure to occur:

- A chemical source and a mechanism of chemical release to the environment;
- An environmental transport medium (e.g., soil) for the released chemical;
- A point of contact between the contaminated medium and the receptor (i.e., the exposure point); and
- An exposure route (e.g., dermal contact with chemically-impacted soils) at the exposure point.

The following sections describe these components and provide a basis for the CSM.

3.1 Potential Sources

The sources of potential contamination at a Site are related to exposure setting (site characteristics and past and current site operations) and land and groundwater uses at the Site and surrounding area. The primary sources for potential contamination at the Site are related to former Site operations (ASTs, a truck loading area, and associated piping and facilities) and subsequent releases to on-site soil. Following a release to soil, secondary sources may include ambient air, fugitive dust, groundwater, and surface water.

3.2 Exposure Setting and Land Use

The DFSP Norwalk facility is a 50-acre facility previously occupied by 12 aboveground fuel storage tanks, a truck loading area, and associated piping and facilities (Figure 2). The facility was decommissioned in 2001 and the aboveground fuel tanks, truck loading area, and associated piping have been removed. While the DFSP Norwalk facility is no longer operational, the KMEP leased area contains active fuel-transmission pipelines that traverse the southern and eastern boundaries of the Site. KMEP currently has workers maintaining their pipeline and remediation systems. In the future, the eastern 15 acres of DFSP Norwalk will be re-developed into a public park owned and

operated by the city of Norwalk. Proposed park may include the construction of restroom facilities and potentially support buildings (e.g., equipment storage, etc.).

Between March 2015 and February 2016, under the regulatory oversight of the LARWQCB, soil remediation was performed at the Site to address contaminants detected in soil and soil gas, principally TPH and VOCs. The remediation removed contaminants from the Eastern Portion of the DFSP Norwalk facility (i.e., future parkland) to a depth of 10 feet bgs. The results of historical (pre-soil remediation) and recent (post soil remediation) show that the residual concentrations of contaminants in Site soils are de minimis (SGI, 2016). In February 2017, additional soil and soil gas samples were collected and analyzed to further characterize the Eastern Portion of the Site (Appendix A).

3.3 Chemical Release Mechanisms and Identification of Transport Media

Chemical properties of the Site-related chemicals and the physical characteristics of the Site were reviewed to identify the factors that might allow the release of a chemical to the environment, and transport to or through soil, soil gas, and groundwater.

Currently, portions of the Site are unpaved and future development may or may not include paving. Future development plans for the Eastern Portion of the DFSP Norwalk facility include a public park. Therefore, both current and future visitors to the Site may be directly exposed to soil on-site. Release of chemicals can potentially occur through volatilization, wind and/or mechanical erosion (i.e., during construction), migration of chemicals into the groundwater, lateral migration of chemicals in groundwater, or migration of chemicals via stormwater runoff. These types of releases may result in chemical vapor or dust (with sorbed chemicals) emissions in air, or the movement of chemicals downward into groundwater with infiltrating rain water (i.e., leaching from soil) or stormwater runoff. These potential release mechanisms are discussed in more detail below.

3.3.1 Volatilization of Chemical Vapors

Some of the chemicals detected at the Site are VOCs. These chemicals typically have a low organic-carbon partition coefficient (K_{oc}), a low molecular weight, and a high Henry's Law constant, indicating that these chemicals may volatilize. Therefore, volatilization of VOCs was considered a potential release mechanism.

3.3.2 Emission of Fugitive Dust

Some chemicals (e.g., metals in soil) adsorb readily to dust particles. Chemicals adsorbed to soil particles can be blown into the air by wind and/or mechanical erosion. This is referred to as fugitive dust. The predominant Site-related contaminants include TPH and VOCs, which typically volatilize. Therefore, exposure to chemicals in soil via fugitive dust emissions was not considered a significant release mechanism for Site-related contaminants.

3.3.3 Leaching

The potential for chemicals to leach from soil depends on the physical and chemical properties of the chemicals, soil type, pH (for metals), and other site-specific conditions. For example, chemicals with high water solubility tend to leach more readily than chemicals with lower solubility. In addition, a chemical's K_{oc} is important for assessing the degree of chemical sorption to soil particles; chemicals with a high sorption potential do not tend to leach as readily (i.e., metals). Site-specific conditions are also important for assessing whether leaching may occur, such as soil type (leaching occurs more readily in sandy soils than in clayey or silty soils), amount of rainfall, gradient, etc. In addition, other competing migration pathways can affect the tendency of a chemical to leach.

The evaluation of chemical concentrations in soil for groundwater protection (soil leaching) is designed to address the potential leaching of chemicals from vadose zone soils and their subsequent impact on groundwater. Because non-volatile compounds are expected to sorb strongly to soil and sediment particles, and because VOCs are expected to volatilize, leaching is not expected to occur at the Site to any significant extent. In addition, because groundwater is recognized as historically impacted, it is assumed that equilibrium with soil has already been established. Regardless, the leaching potential of Site-related contaminants from vadose zone soil into groundwater may be a potential chemical release mechanism. Therefore, exposure to chemicals in groundwater via leaching, which is then secondarily released to the environment via lateral migration/discharge into surface water was considered a potential release mechanism.

3.3.4 Lateral Migration of Groundwater into Offsite Surface Water

The nearest surface water bodies to the Site are the San Gabriel River, located approximately 2 miles west of the Site, and the North Fork Coyote Creek, located approximately 3 miles to the east of the Site. Based on these distances from the Site, lateral migration of groundwater from Site into off-site surface water bodies was not considered a potential release mechanism.

3.3.5 Stormwater Runoff

Stormwater runoff from areas of contaminated soil has the potential to transport contaminants bound to soil particles. However, re-development at the Site will include engineering controls to control stormwater runoff from the Site. Additionally, Site-related contaminants are more likely to volatilize and less likely to be adsorbed to any surface soil runoff. Although the potential chemical release via stormwater runoff is possible, it was not considered a significant release mechanism.

3.4 Potential Human Receptors

The third component necessary for an exposure pathway to be complete is identification of potential receptors at the Site. Hypothetical human receptors were identified based on proximity to the Site, proposed activities that could possibly result in direct or indirect contact with Site-related chemicals, and anticipated Site use. The following hypothetical on-site receptors were evaluated in this risk assessment:

- Construction Worker Receptor;
- Commercial/Industrial Worker Receptor; and
- Park Visitor Receptor.

These potential receptors are described further in Section 3.6. Trespassers may occasionally visit the Site. However, it should be noted that trespasser exposures are considerably lower than industrial workers; therefore, trespasser exposures are not evaluated.

3.5 Potential Exposure Points

The other portion of the third component necessary for an exposure pathway to be complete is a point of contact between the contaminated medium and the receptor (i.e., the exposure point). This risk assessment evaluates potential exposure of receptors assuming that access to the Site is unrestricted and that on-site receptors are exposed directly to contaminated soil and indirectly to soil gas and groundwater. For soil and soil gas, the exposure point is assumed to be the area within the Eastern Portion of the DFSP Norwalk facility.

Depth to shallow groundwater is approximately 30 feet bgs. In general, utility trenching or excavations do not exceed 10 feet bgs; therefore, it is unlikely a hypothetical on-site construction worker receptor would contact groundwater during re-development of the Site. In the event groundwater is encountered during re-development, any hypothetical construction worker receptor will be performing activities consistent with a Site Management Plan (SMP) and a Site Health and Safety Plan (HASP). The SMP, HASP, and best management practices (BMPs) will protect construction worker receptors from exposure to site-related contaminants. The SMP, HASP, and BMP will require dewatering to preclude any direct contact with groundwater for workers at the Site. Therefore, direct contact with groundwater for on-site workers was not considered in this assessment.

Volatile compounds can be released from the subsurface into indoor and outdoor air resulting in an indirect exposure to contaminants in soil gas. Inhalation of volatile compounds in outdoor air is generally negligible due to dispersion in ambient air. As recommended by the DTSC (2011), for the vapor intrusion pathway into indoor air, exposure to subsurface contamination is best characterized through the collection of soil gas samples. Therefore, concentrations detected in soil gas were used in the evaluation of potential indoor air impacts.

3.6 Exposure Pathways Considered Potentially Complete and Significant

The fourth and final component, a complete exposure pathway (i.e., route of exposure) is discussed in combination with the third component (i.e., presence of receptors at an exposure point) to define those exposure pathways considered to be complete and significant. The following sections summarize those pathways considered complete and significant for each receptor.

3.6.1 Hypothetical On-Site Construction Worker Receptor

The hypothetical on-site construction worker receptor is included in the event any construction or re-development occurs at the Site. This receptor spends the workday outdoors performing construction-related tasks. This receptor is expected to come in direct contact with soil. Inhalation of chemical vapors while indoors was not considered a complete and significant exposure pathway because this receptor is not expected to be working inside buildings. The exposure pathways assumed to be complete and significant for the hypothetical on-site construction worker receptor include:

- Incidental ingestion of soil;
- Dermal contact with soil; and
- Inhalation of vapors in outdoor air generated from the subsurface.

3.6.2 Hypothetical On-Site Commercial/Industrial Worker Receptor

The hypothetical on-site commercial/industrial worker receptor is included based on current and expected future land use. Currently, there are workers maintaining the KMEP pipeline and remediation systems. In the future as a public park, there will be workers maintaining the park facilities. This receptor is a long-term receptor (i.e., greater than 7 years [USEPA, 1989]). This receptor is a full-time employee that is assumed to spend 250 days per year at work for 25 years. This receptor primarily spends the workday conducting outdoor activities, which may include moderate soil invasive activities in surface or near surface soils. This receptor may spend part of the workday inside park facility buildings (i.e., maintaining restroom facilities). The exposure pathways assumed to be complete and significant for the hypothetical on-site commercial/industrial worker receptor include:

- Incidental ingestion of soil;
- Dermal contact with soil;
- Inhalation of vapors in outdoor air generated from the subsurface; and
- Inhalation of vapors in indoor air generated from the subsurface.

3.6.3 Hypothetical On-Site Park Visitor Receptor

The hypothetical on-site park visitor receptor is included based on expected future land use as a public park. This receptor is a long-term receptor. This receptor is assumed to visit the park every weekend (104 days per year) for a period of 30 years (as both a child [6 years] and an adult [24 years]). This receptor spends the day (8 hours per day) outdoors. Potential exposures for this receptor are expected to occur from time spent outdoors only. Although this receptor may occasionally use indoor restroom facilities, indoor exposure will be infrequent and for short durations resulting in insignificant exposures. The exposure pathway assumed to be complete and significant for the hypothetical on-site park visitor receptor includes:

- Incidental ingestion of soil;
- Dermal contact with soil;
- Inhalation of vapors in outdoor air generated from the subsurface.

4.0 HUMAN HEALTH SCREENING-LEVEL RISK ASSESSMENT

4.1 Data Evaluation and Exposure Point Concentrations

Typically, only the most toxic, persistent, and prevalent site-related chemicals detected at a site are fully evaluated in a risk assessment. In this way, the assessment can focus solely on those chemicals that are expected to account for most of the estimated health impacts at the Site. These selected chemicals are known as chemicals of potential concern (COPCs). The nature and extent of constituents of concern were discussed in Section 2.0. The CSM, including potentially exposed hypothetical receptors and the most likely ways they might be exposed to chemicals was discussed in Section 3.0. This section evaluates which chemical concentrations exceed applicable screening levels by media. Data Evaluation and Exposure Point Concentrations

This human health screening-level risk assessment focuses on the shallow soil (0 to 10 feet bgs) and soil gas data collected during the 2015/2016 remediation activities and 2017 additional Site investigation. From March 2015 and February 2016, the remediation of shallow soils (0 to 10 feet bgs) and in selected areas deeper soil (from 10 feet bgs to 25 feet bgs) was conducted at the facility. This work was conducted under the oversight of the LARWQCB and entailed the excavation, on-site treatment, and re-use of soil. The originally proposed excavations, as provided in the RAP, are shown on Figure 5; Excavations #3, #4, #5, #14, #19, #35, #37 were completed on the 15 eastern-most acres of the Site. Soil samples were collected to ensure that Site-specific soil cleanup goals had been achieved in excavation sidewalls and in the treated soil. The 2015/2016 data were provided to the LARWQCB in summary reports and are available on the Geotracker website and the 2017 data are provided in this Revised HHRA. The soil and soil gas data used in this screening-level risk assessment are provided in Appendices B and C, respectively.

The exposure point concentration (EPC) represents the amount of a chemical to which a hypothetical receptor is assumed exposed. The EPC is a conservative estimate of the chemical concentration in an environmental medium. The EPC may represent the lesser of the maximum detected concentration and the 95 percent upper confidence limit (95UCL) of the average concentration for each COPC, depending on the nature of exposure, the number of samples, and chemical distribution. The EPCs were used to compare with soil and soil gas screening levels. Under the screening-level risk assessment, a chemical was identified as a COPC if the EPC exceeded applicable screening levels. The EPCs for soil and soil gas are described in the following sections.

4.1.1 Exposure Point Concentrations in Soil

It is unlikely that a potential receptor will spend the entire exposure duration residing over maximum detected concentrations in soil. Therefore, it is relevant and appropriate to statistically evaluate the soil data on an area-wide basis. A USEPA software package, ProUCL Version 5.1 (USEPA, 2015), was used to estimate the upper confidence limit of the mean concentration (UCL; [typically the 95UCL, but sometimes the 97.5 or 99UCL, depending on the data set]). ProUCL software makes

recommendations for estimating UCLs and was developed as a tool to support risk assessment. Non-detect results were input into ProUCL as the detection limit value. Due to limitations of certain data sets (i.e., limited number of samples or low detection frequency), ProUCL was not used to estimate a UCL. UCLs were not estimated for analytes with fewer than five detected concentrations. For those analytes with adequate data sets, the ProUCL output spreadsheets are presented in Appendix D. Consistent with USEPA (1989) procedures, the lesser of the maximum detected concentration and the 95UCL was selected as the soil EPC. Soil EPCs were used for evaluating the direct contact with soil exposure pathway. For the 2015/2016 soil data, summary of the maximum detected concentrations, recommended UCL concentrations, when estimated, and soil EPCs are presented in Table 1. No TPH or VOCs were detected at concentrations above laboratory reporting limits in soil samples collected during the 2017 additional Site investigation.

4.1.2 Exposure Point Concentrations in Soil Gas

The only complete exposure pathway associated with soil gas is inhalation of vapors in indoor air volatilizing from the subsurface. Based on the assumption that a building may be located anywhere on-site, it is assumed that hypothetical indoor receptors reside over maximum detected concentrations. For the 2015/2016 soil gas data, a summary of the EPCs for soil gas at 5 feet bgs and 10 feet bgs are presented in Tables 2 and 3, respectively. For the 2017 soil gas data, a summary of the EPCs for soil gas at 5 feet bgs and 10 feet bgs are presented in Tables 4 and 5, respectively.

4.2 Site-Specific Cleanup Goals and Screening Levels

Regulatory oversight is provided by the LARWQCB; therefore, the Site-specific soil cleanup goals that were approved by the LARWQCB and San Francisco San Francisco Bay Regional Water Quality Control Board (SFRWQCB) Environmental Screening Levels (ESLs) for soil and soil gas are assumed to be appropriate for the Site. The soil data were screened with the Site-specific soil cleanup goals that were approved by the LARWQCB in their letter entitled *Approval of Modification to Cleanup Goals*, July 16, 2015. In the absence of a Site-specific soil cleanup goals, SFRWQCB ESLs (SFRWQCB, 2016) were used. The soil gas data were screened with the SFRWQCB ESLs (SFRWQCB, 2016), DTSC modified screening levels (DTSC-SLs; DTSC, 2016), and USEPA Regional Screening Levels (RSLs; USEPA, 2016). For comparison purposes, the SFRWQCB, DTSC, USEPA, and OEHHA screening levels for the chemicals detected at the Site in soil and soil gas are provided in Tables E-1 and E-2 of Appendix E, respectively. For most COPCs, the SFRWQCB ESLs were generally equal to or less than available screening levels from DTSC and USEPA. OEHHA CHHSLs are presented in Appendix E, but CHHSLs have not been updated since 2010 and were not used in this screening-level risk assessment.

The results of the screening-level risk assessment were used to determine if further evaluation of potential exposures associated with proposed re-development was necessary. Although the hypothetical on-site park visitor receptor is a potential future receptor with potentially complete exposure pathways, there are no known published regulatory screening levels to evaluate this

specific receptor. The potentially complete exposure pathways for this receptor are associated with direct contact with soil. The Site-specific soil cleanup goals have been approved by the LARWQCB for the Site and should be protective of the occasional park visitor receptor. For comparison, the conservative SFRWQCB Tier 1 ESLs, are essentially the same as the Site-specific soil cleanup goals and in some cases, slightly higher. The Tier 1 ESLs are designed as conservative values for unrestricted land use. For the purposed of this screening-level risk assessment, both the Site-specific cleanup goals and the SFRWQCB Tier 1 ESLs should be appropriate screening levels to use for the evaluation of the hypothetical on-site park visitor receptor.

The soil and soil gas screening levels are described in more detail in the following sections.

4.2.1 Soil Cleanup Goals and Screening Levels

In order of priority, soil screening levels were selected from the following:

- Site-specific soil cleanup goals, as approved by LARWQCB; and
- SFRWQCB ESLs (SFRWQCB, 2016).

Site-specific soil cleanup goals were calculated using the procedures proscribed in the Regional Water Quality Control Board, Los Angeles Region (LARWQCB), *Interim Site Assessment & Cleanup Guidebook* (Guidebook; LARWQCB, 1996). Cleanup goals were calculated in compliance with Table 4-1 of the Guidebook. Depth to groundwater at the Site was found to be between 25 and 30 feet bgs based on historical and recent groundwater gauging data. Site-specific soil parameters including thickness of the clay, sand, and silt layers were used when calculating attenuation factors - values calculated for the DFSP Norwalk cleanup Site were adopted when more conservative (lower). The Site-specific soil cleanup goals were approved by the LARWQCB in their letter entitled *Approval of Modification to Cleanup Goals*, July 16, 2015. The soil cleanup goals were determined for 3 soil profiles: 0 to 5 feet bgs, 5 to 10 feet bgs, and 11 to 30 feet bgs. The Site-specific soil cleanup goals are summarized on the data tables provided in Appendix B. In this screening-level risk assessment, the lesser of the soil cleanup goals for 0 to 5 feet bgs and 5 to 10 feet bgs were used (Table 1).

For TPH carbon range C₃₃-C₄₄ and TPH carbon range C₂₃-C₄₄, o-xylene, and m,p-xylene, Site-specific soil cleanup goals were not available. Therefore, for the purposes of this screening-level risk assessment, the SFRWQCB ESLs for soil were used. The SFRWQCB ESLs include a broad scope of screening levels, some of which are not strictly risk-based. The risk-based ESLs correspond to an excess cancer risk of 1×10^{-6} or a hazard quotient of 1, based on standardized equations (SFRWQCB, 2016) that combine exposure assumptions with agency-derived toxicity data. The risk-based ESLs are developed for direct contact with soil exposure scenarios (i.e., ingestion, dermal contact, and inhalation of dust/vapor in outdoor air). The Tier 1 ESLs represent the most conservative ESLs and are designed for use at most sites for protection of sites with unrestricted land and water use, shallow soil contamination, shallow groundwater, and permeable soil. Although the groundwater at the Site is not shallow (i.e., approximately 30 feet bgs), the Tier 1 ESLs represent

the most conservative values and were used for this screening-level risk assessment. The SFRWQCB Tier 1 ESLs are summarized in Table E-1 of Appendix E.

4.2.2 Soil Gas Screening Levels

In order of priority, soil gas screening levels were selected from the following acceptable regulatory screening levels:

- SFRWQCB ESLs (SFRWQCB, 2016); and
- DTSC-SLs (DTSC, 2016); and
- USEPA RSLs (USEPA, 2016).

SFRWQCB ESLs have been developed for soil gas. The SFRWQCB ESLs for vapor intrusion of soil gas into indoor air correspond to an excess cancer risk of 1×10^{-6} or a hazard quotient of 1, based on standardized equations (SFRWQCB, 2016) that combine exposure assumptions with agency-derived toxicity data. The risk-based ESLs are developed for soil gas under residential and commercial/industrial exposure scenarios.

SFRWQCB soil gas ESLs were not available for carbon disulfide, 1,3-dichlorobenzene, isopropanol, 1,2,4-trimethylbenzene, and 1,3,5-trimethylbenzene, so the DTSC-SLs or USEPA RSLs were used. DTSC-SLs and USEPA RSLs have been developed for indoor air, but not soil gas. The residential and commercial/industrial soil gas screening levels are based on applying a DTSC default attenuation factor to the lowest of DTSC and USEPA air SLs. The resident air SLs and industrial air SLs were divided by DTSC default attenuation factors of 0.002 for residential and 0.001 for commercial, respectively (DTSC, 2011). The resulting values represent the soil gas screening levels. The lesser of the USEPA RSL or DTSC-SL was used. The soil gas screening levels are summarized on in Table E-2 of Appendix E.

4.3 Soil Results

Based on a comparison of 2015/2016 soil data and the Site-specific soil cleanup goals, no COPCs were identified in soil at the Site. For compounds detected in one or more soil samples, Table 1 provides a summary of the soil data and applicable screening levels. The soil EPCs for all TPH and VOCs were below the soil screening levels for commercial land use. In addition, except for two TPH carbon ranges (C_{13} - C_{22} and C_{23} - C_{32}), the maximum detected concentrations for TPH and VOCs were below the soil screening levels for commercial land use.

For TPH carbon ranges (C_{13} - C_{22} and C_{23} - C_{32}), the individual soil samples with detected concentrations that were above the soil screening levels were located within the upper shallow soil zone (0 to 5 feet bgs). This upper shallow soil zone (0 to 5 feet bgs) was further evaluated statistically to ensure that if the soil dataset were limited to the upper 5 feet, that the resulting soil EPC would remain below the soil screening level. The results of the evaluation of the upper shallow soil zone (0 to 5 feet bgs) indicated the following:

- For TPH carbon range C₁₃-C₂₂ the maximum detected concentration was 604 mg/kg and the 95UCL was 8.8 mg/kg; and
- For TPH carbon range C₂₃-C₃₂ the maximum detected concentration was 1,200 mg/kg and the 95UCL was 72 mg/kg.

This evaluation indicates that both soil EPCs from shallow soil (0 to 10 feet bgs) and upper shallow soil (0 to 5 feet bgs) are well below the soil screening levels for TPH carbon ranges (C₁₃-C₂₂ and C₂₃-C₃₂) of 100 mg/kg and 1,000 mg/kg, respectively.

4.4 Soil Gas Results

Based on a comparison of 2016 and 2017 soil gas data at 5 and 10 feet bgs and the soil gas screening levels, only benzene concentrations at 10 feet bgs exceeded residential screening levels. No VOCs were detected in soil gas at concentrations exceeding the commercial screening levels. For compounds detected in one or more soil samples, Tables 2 through 5 provide a summary of the soil gas data and applicable screening levels.

Based on the 2016 soil gas data, benzene was detected at concentrations above the residential screening level of 48 µg/m³ in 5 of 26 soil gas samples collected at 10 feet bgs. In these 5 soil gas sample locations, benzene was not detected above the detection limit at the same soil gas locations at 5 feet bgs. Based on the 2017 soil gas data, benzene was detected at a concentration above the residential screening level of 48 µg/m³ in only 1 of 5 soil gas samples collected at 10 feet bgs. Benzene was only detected at a concentration of 2.4 µg/m³ at the same soil gas location at 5 feet bgs. Furthermore, during both 2016 and 2017 site investigations, no soil gas samples collected at 5 feet bgs at the Site were detected above the residential screening level of 48 µg/m³. The benzene concentrations detected at 5 feet bgs ranged from 2.2 µg/m³ to 30 µg/m³. Based on soil gas benzene concentrations closest to the surface (at 5 feet bgs), benzene concentrations do not exceed the residential screening levels.

Based on future land use as a park, the use of residential screening levels may be overly conservative. The exposure parameters for a future on-site park visitor receptor would be significantly less than exposure parameters assumed in the development of the screening levels for a long-term resident receptor (24 hours per day for 26 years). For the protection of a future on-site park maintenance worker, the maximum detected benzene concentrations at 5 feet bgs and 10 feet bgs were less than the commercial screening level of 420 µg/m³.

4.5 Results of the Human Health Screening-Level Risk Assessment

A human health screening-level risk assessment was performed using Site-specific cleanup goals and acceptable regulatory screening levels. The soil EPCs and soil gas EPCs were below the screening levels. Therefore, further evaluation of potential exposures associated with proposed development is not necessary and no additional remediation or engineering solutions are necessary to adequately protect human health. Based on the results of the human health screening –level risk

assessment, the Eastern Portion of the DFSP Norwalk Site is acceptable for current and anticipated future land use.

Based on the result of the human health screening-level risk assessment, the cumulative cancer risks and hazards were expected to be well below regulatory thresholds. However, in response to OEHHA's comments in their letter dated August 2, 2016, cumulative cancer risks and hazards associated with exposure to COPCs in soil and soil gas are estimated and presented in Appendix F. Based on the risk characterization evaluation, estimated cancer risks and noncancer hazards are below regulatory thresholds and COPCs in soil and soil gas do not pose a human health risk to potential residential or commercial receptors in the Eastern Portion of the DFSP Norwalk Site.

5.0 SUMMARY AND CONCLUSIONS

This report presents the Revised HHRA conducted for the Eastern Portion of the former Defense Fuel Support Point Norwalk facility located at 15306 Norwalk Boulevard in Norwalk, California (Site; Figure 1). This Revised HHRA incorporates comments provided by OEHHA in a letter dated August 2, 2016, and transmitted by the LARWQCB in a letter dated August 30, 2016. The HHRA was prepared to identify whether any residual soil and soil gas contamination poses a risk to human receptors.

Between March 2015 and February 2016, soil remediation was performed to address contaminants detected in soil and soil gas, principally TPH, and VOCs. The remediation was performed under the regulatory oversight of the LARWQCB and in accordance with the *Soil Remedial Action Plan (RAP)*, dated November 30, 2014, and the *Addendum to the Soil Remedial Action Plan (Addendum)*, dated December 10, 2014. At the request of LARWQCB and OEHHA, in February 2017, additional soil and soil gas samples were collected and analyzed to further characterize the Eastern Portion of the Site.

As a requirement for soil closure by the LARWQCB, this HHRA was specifically prepared for DLA-Energy responsible area of the Eastern Portion of DFSP Norwalk. The human health screening-level risk assessment focuses on the data collected during 2015/2016 remediation activities and 2017 additional Site investigation activities. The purpose of the HHRA was to evaluate potential exposures to identify whether any residual soil and soil gas contamination poses a risk to human health.

In the human health screening-level risk assessment, the soil and soil gas data were screened with Site-specific cleanup goals and acceptable regulatory screening levels. Based on the results of the screening-level risk assessment, the following conclusions are made:

- The soil EPCs were below the human health screening levels.
- The soil gas EPCs were below the human health screening levels.
- Cumulative cancer risks and hazards were below regulatory thresholds.
- Further evaluation of potential exposures associated with proposed development as a public park is not necessary.
- No additional remediation or engineering solutions are necessary to adequately protect human health.
- The Eastern Portion of the DFSP Norwalk Site is acceptable for current and anticipated future land use.

Based on the currently encountered residual contaminant concentrations and distribution at the Site, no further remediation of soils or soil gas is considered necessary.

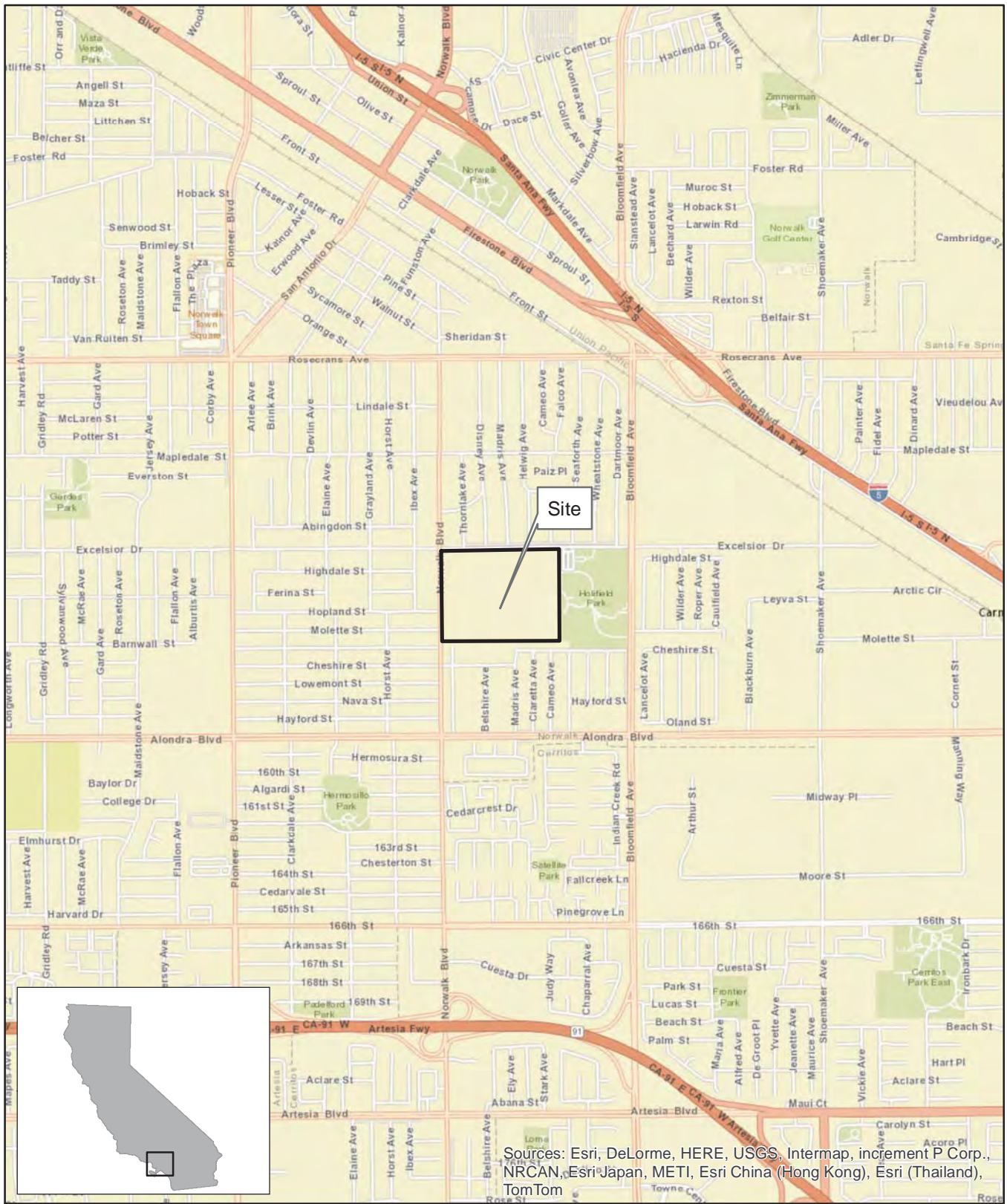
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7.0 LIMITATIONS

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FIGURES



Sources: Esri, DeLorme, HERE, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom

SOURCE:
ESRI 7.5 MINUTE TOPOGRAPHIC MAP.
<http://resources.esri.com/arcgisonline/services>

PROJECT NO.:	DATE:	DR. BY:	APP. BY:
04-NDLA-001	5/28/2014	JK	PP

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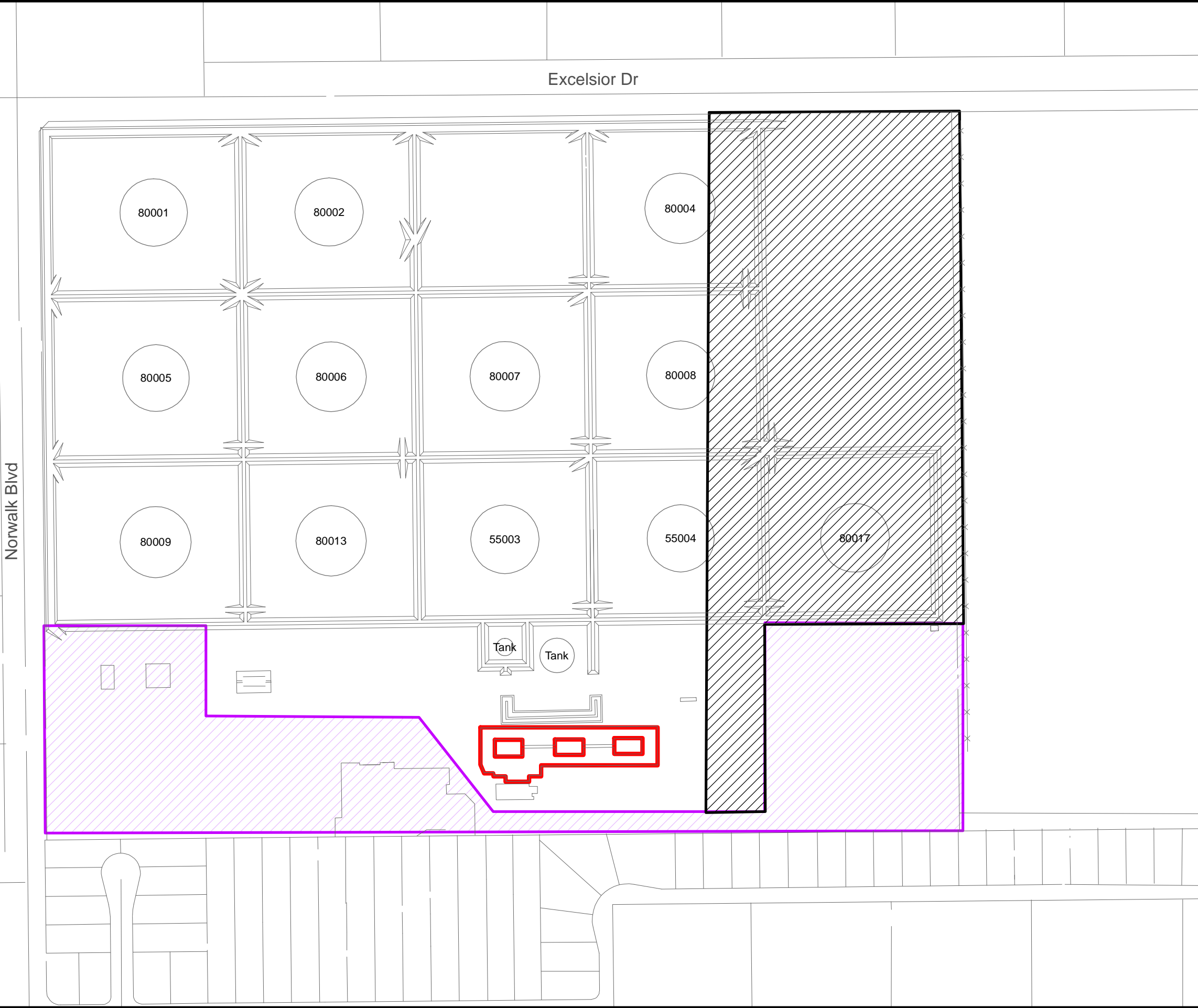


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**DEFENSE FUEL SUPPORT POINT
NORWALK**
15306 NORWALK BOULEVARD
NORWALK, CALIFORNIA

SITE LOCATION MAP

FIGURE
1



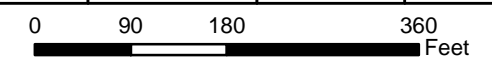
Legend

-  Former Above Ground Storage Tanks
-  DLA Responsible Area - Eastern Portion of DFSP Norwalk
-  Former Truck Loading Racks
-  Kinder Morgan Responsible Area



DFSP Norwalk
 15306 Norwalk Boulevard
 Norwalk, California

Project Number:	Date:	Drawn By:	Approved By:
04-NDLA-007	04/07/2016	P. Wu	N. Irish



Site Layout Map








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Figure
2

Excelsior Dr.

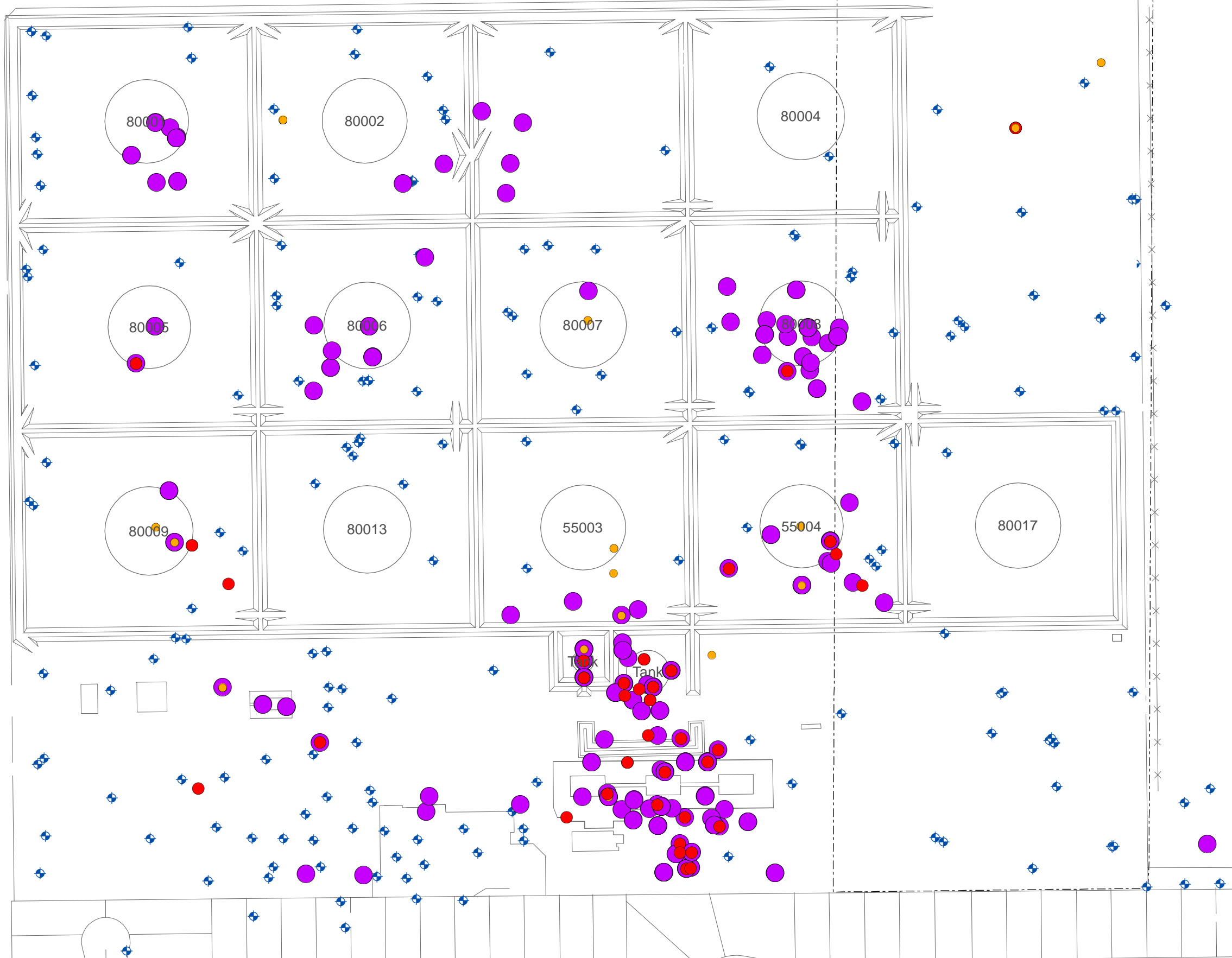
Excelsior Dr.

Legend

-  Former Above Ground Storage Tanks
-  DFSP Norwalk Border
-  Expanded Holifield Park Boundary
-  Groundwater Monitoring Well Locations
-  Concentrations Exceeding Cleanup Goals of 500 mg/kg for TPHg or JP-5 or 100 mg/kg for TPHd in Soil 0 to 5 ft bgs
-  Concentrations Exceeding Cleanup Goal of 100 mg/kg for TPHg or JP-5 or TPHd in Soil 5.5 to 10 ft bgs
-  Concentrations Exceeding Cleanup Goal of 100 mg/kg for TPHg or JP-5 or TPHd in Soil 10.5 to 25 ft bgs

Notes:

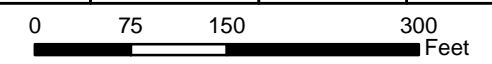
Los Angeles Regional Water Quality Control Board 2012 Cleanup Goals
 TPHg = Total Petroleum Hydrocarbons as Gasoline
 JP-5 = Jet Propellant-5 (Jet Fuel)
 TPHd = Total Petroleum Hydrocarbons as Diesel
 bgs = Below Ground Surface



DFSP Norwalk

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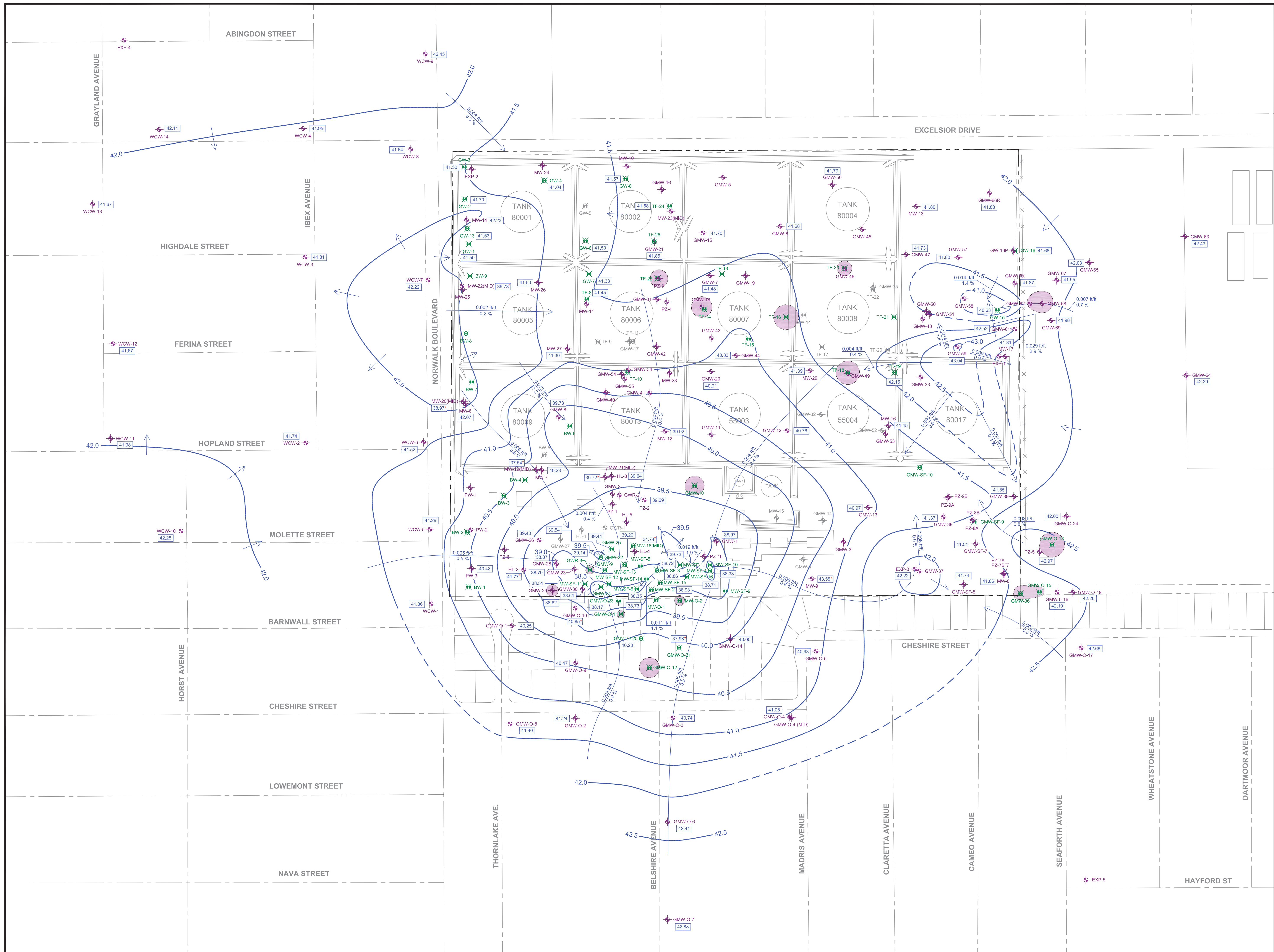
Project Number:	Date:	Drawn By:	Approved By:
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Locations of Groundwater Monitoring Wells and Soil Borings

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Figure
3



EXPLANATION:

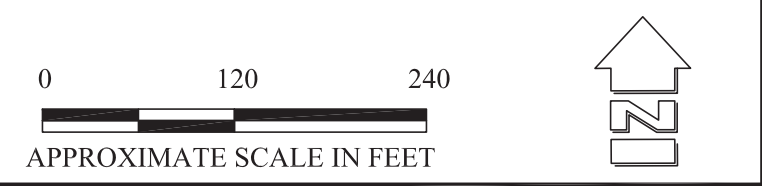
- FORMER ABOVEGROUND STORAGE TANKS
- DFSP NORWALK BORDER
- GROUNDWATER MONITORING WELL
- WELLS SHOWN IN GREY WERE DECOMMISSIONED BY DLA ENERGY PRIOR TO REMEDIAL EXCAVATION
- EXTRACTION WELL USED FOR VAPOR, GROUNDWATER, TOTAL FLUIDS, OR FLOATING PRODUCT EXTRACTION
- GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL MEASURED OCTOBER 3, 2015
- ASTERISK INDICATES DATA NOT USED TO DEVELOP THIS EQUIPOTENTIAL MAP
- LINE OF EQUAL GROUNDWATER ELEVATION (REFERENCE = MEAN SEA LEVEL) CONTOUR INTERVAL = 0.5 FOOT DASHED WHERE INFERRED
- GROUNDWATER GRADIENT DIRECTION WITH GRADIENT IN FEET PER FOOT (F/F) AND PERCENT; DASHED WHERE INFERRED
- ESTIMATED EXTENT OF MEASURABLE LIGHT NONAQUEOUS PHASE LIQUID (LNAPL, FLOATING PRODUCT) ON GROUNDWATER REFER TO FIGURE 4 OR TABLE 2 FOR MEASURED THICKNESSES

NOTES:

1. GROUNDWATER ELEVATIONS AND INTERPRETED PRODUCT EXTENT ARE BASED ON DATA COLLECTED BY SGI & BLAINE TECH OCTOBER 3, 2016.
2. DLA ENERGY'S AND SFPP'S REMEDIATION SYSTEMS WERE SHUT DOWN APPROXIMATELY 1 WEEK PRIOR TO COLLECTING FLUID LEVEL MEASUREMENTS IN OCTOBER 2016.
3. WELLS SCREENED IN THE EXPOSITION AQUIFER OR NEAR THE BOTTOM OF THE UPPERMOST AQUIFER ARE NOT USED IN CONTOURING.

SURVEY NOTES:

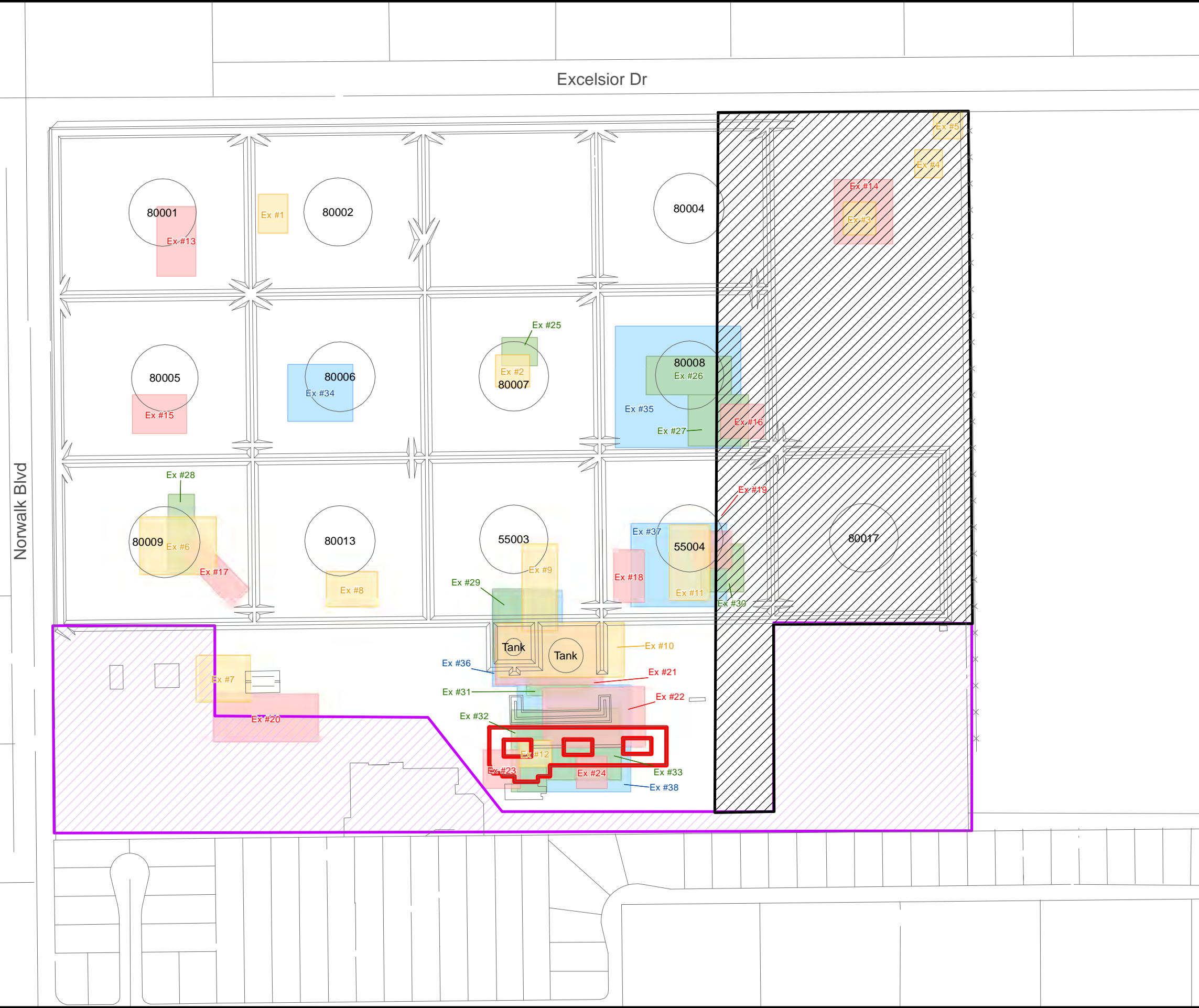
1. BASE MAP PREPARED FROM DATA PROVIDED BY FLUOR DANIEL GTI, DULIN & BOYNTON, GEOMATRIX, AND PARSONS
2. EXCEPT AS NOTED BELOW, WELL LOCATIONS SURVEYED BY DULIN & BOYNTON
3. LOCATIONS OF WELLS HL-1, HL-3, AND HL-4 BASED ON FIELD MEASUREMENTS BY FLUOR DANIEL GTI AND WOODWARD-CLYDE







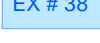



DATE: 12/2016	FILE NAME: DFSP-Norwalk-SE2-16.dwg
PROJECT No.: 091-NDLA-018	CONTRACT: SPO-600-14-D-5410

GROUNDWATER EQUIPOTENTIAL AND GRADIENT MAP UPPERMOST GROUNDWATER ZONE OCTOBER 3, 2016

DFSP NORWALK
15306 NORWALK BOULEVARD
NORWALK, CALIFORNIA



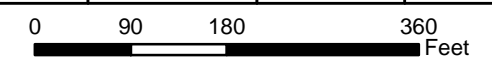
Legend

-  Former Above Ground Storage Tanks
-  EX # 12 Excavations 0-5ft bgs
-  EX # 24 Excavation 5-10ft bgs
-  EX # 33 Excavation 10-15ft bgs
-  EX # 38 Excavation 15-25ft bgs
-  DLA Responsible Area - Eastern Portion of DFSP Norwalk
-  Former Truck Loading Racks
-  Kinder Morgan Responsible Area



DFSP Norwalk
15306 Norwalk Boulevard
Norwalk, California

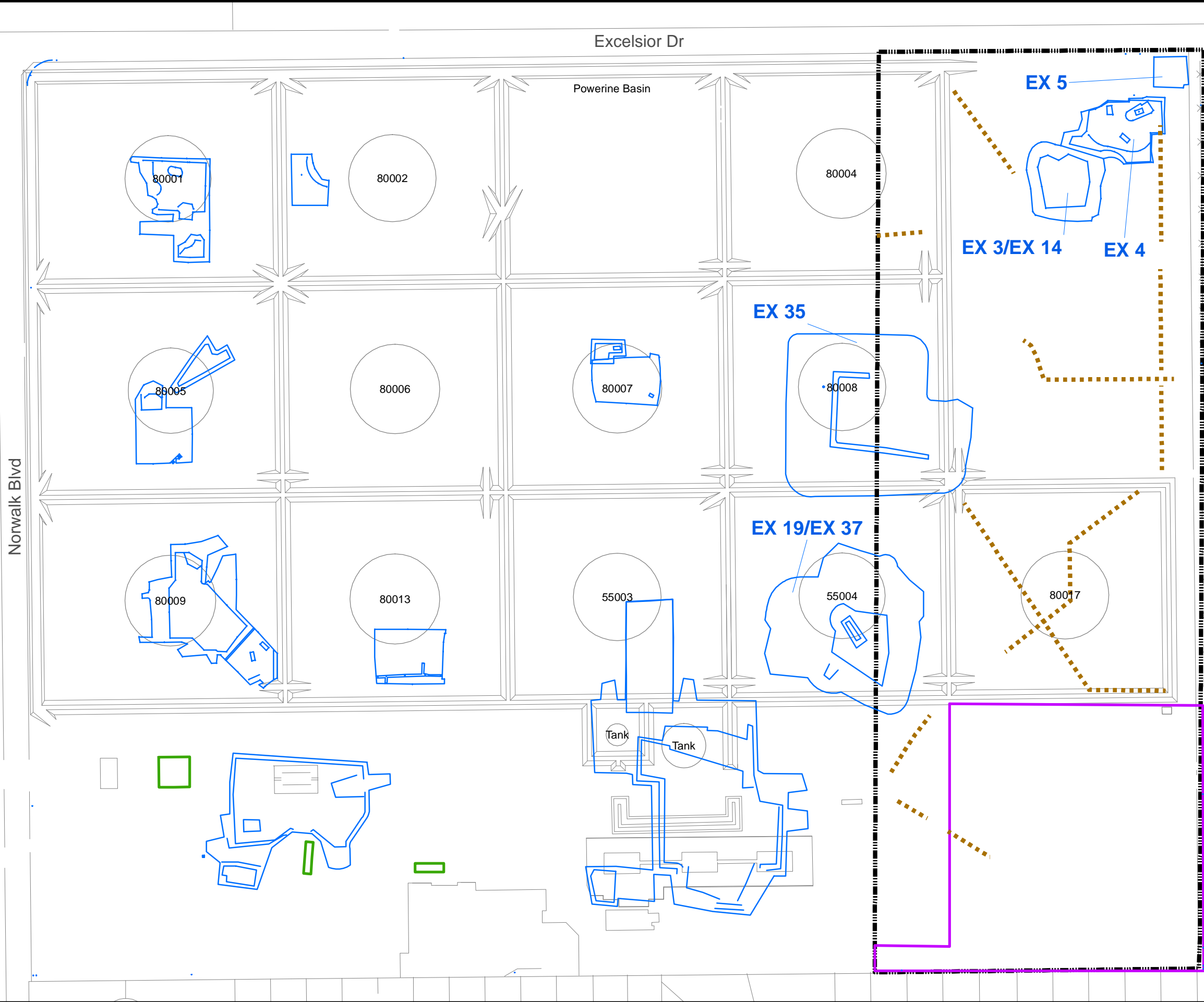
Project Number:	Date:	Drawn By:	Approved By:
04-NDLA-007	04/07/2016	P. Wu	N. Irish





Site Layout with Proposed Excavations

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Figure 5



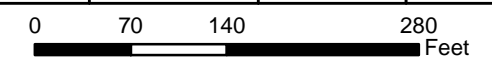
Legend

-  Former Above Ground Storage Tanks
-  Cross Trenches (Completed by SGI/DLA)
-  Excavation Areas
-  Buildings
-  Kinder-Morgan Conveyance Area (Soil Conceptual Site Model, Parsons, September 4, 2012)
-  Surveyed Park Boundary (by Coast Surveying, Inc., October 2015)



DFSP Norwalk
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 Norwalk, California

Project Number:	Date:	Drawn By:	Approved By:
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EXCAVATION MAP WITH PARK AREA CROSS TRENCHES

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Figure
6

Document Path: Y:\DLA-Norwalk\GIS_Maps\Park_Area_Maps\Eio7_Excavation_Show_Soil_Origin_2016-04-07.mxd





Norwalk Blvd

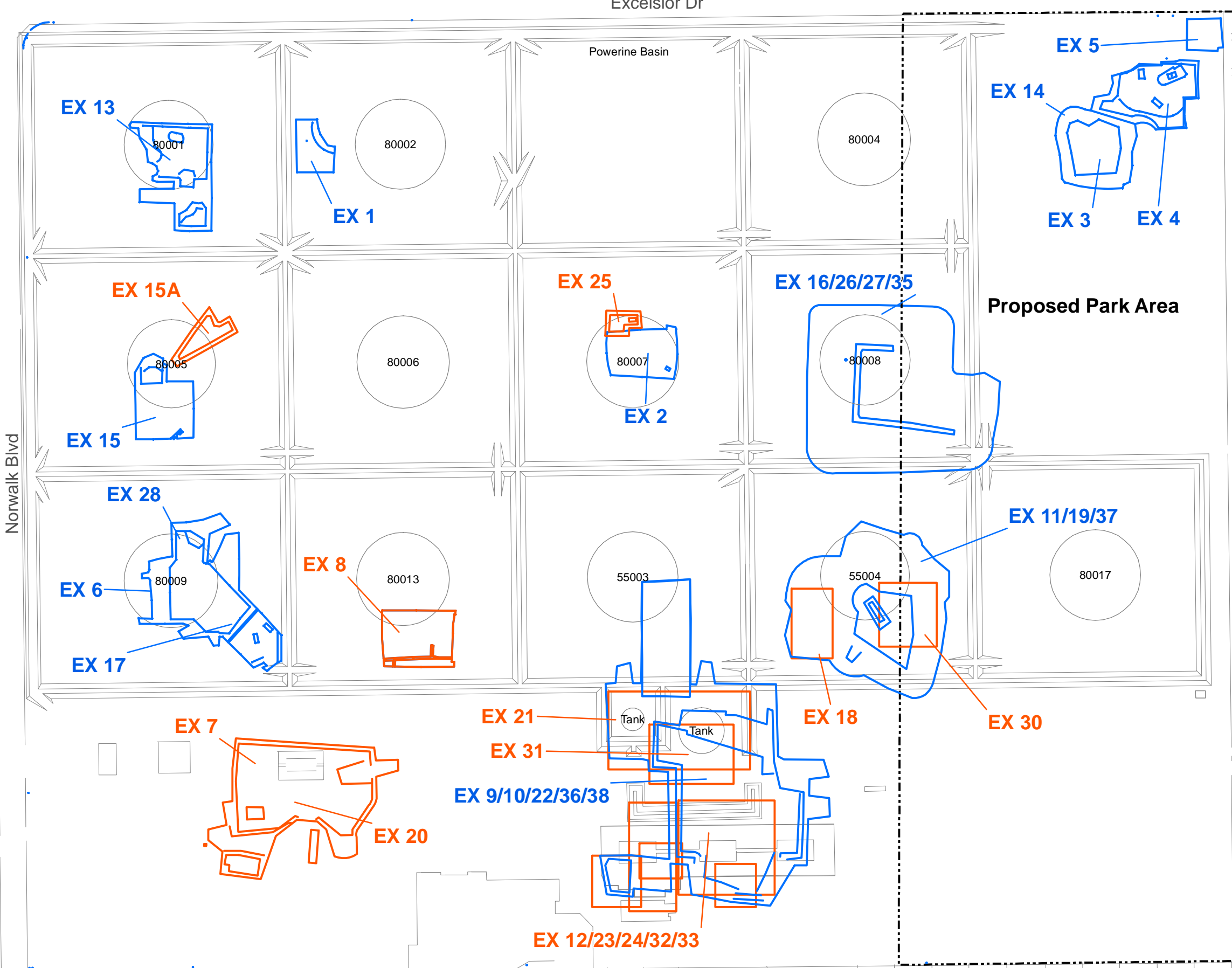
Excelsior Dr

Powerline Basin

Proposed Park Area

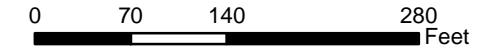
Legend

-  Former Above Ground Storage Tanks
-  Soil from excavations were fully or partially used as backfill for the proposed park
-  Soil from excavations were not used as backfill for the proposed park
-  Surveyed Park Boundary (by Coast Surveying, Inc., October 2015)



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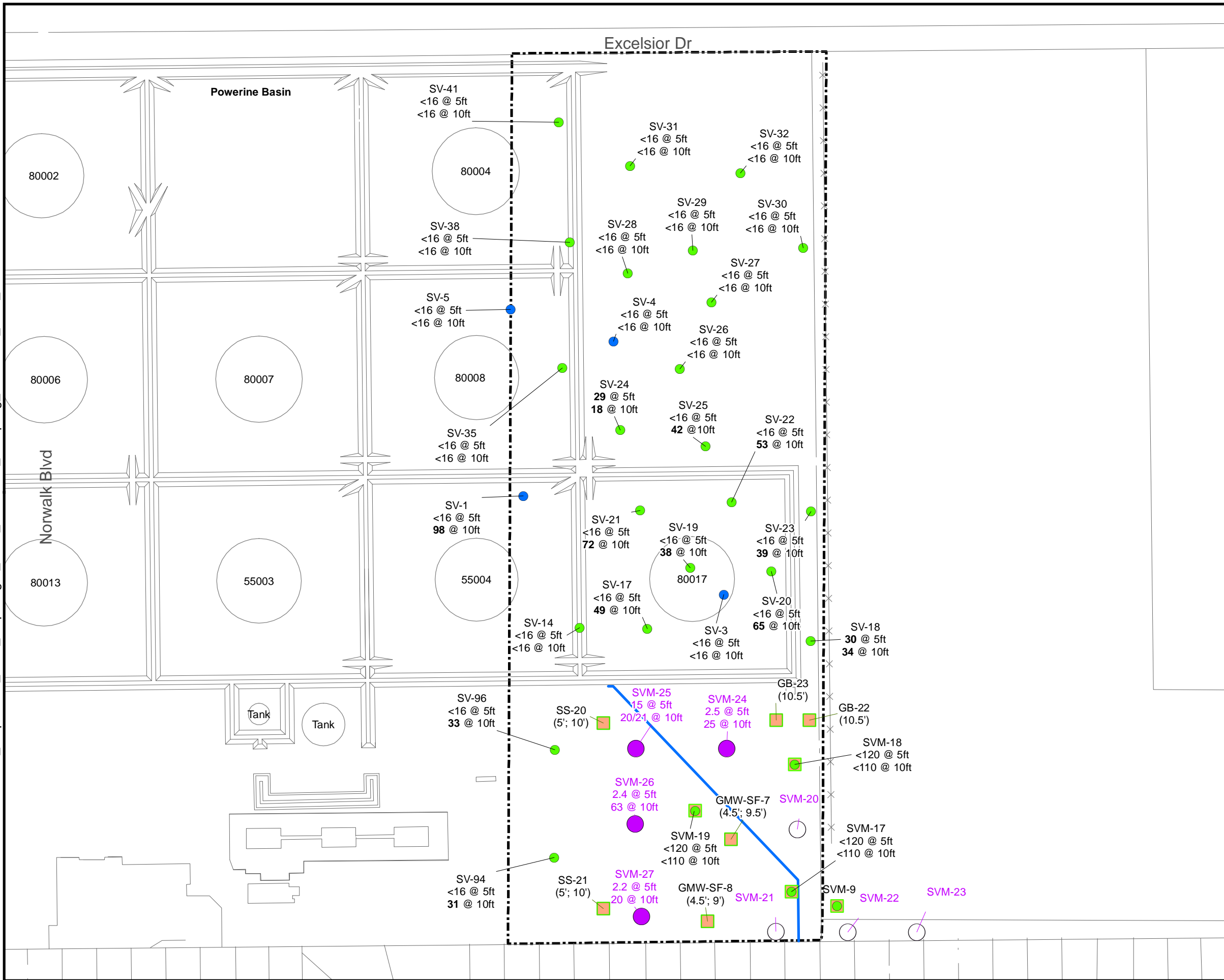
Project Number:	Date:	Drawn By:	Approved By:
04-NDLA-007	04/07/2016	A. C	N. I



EXCAVATION MAP WITH PARK AREA BACKFILL ORIGINS

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Figure
 7



Legend

- SV-13 Sampled Soil Vapor Probe Locations
- SV-1 Soil Vapor Probe Locations (SGI 2015)
- GB-23 Previous Soil Sampling Locations - Southeast Corner
- SVM-24 Additional Soil (SB) and Soil Gas (SV) Sampling Locations (DLA 2017)
- SVM-22
- 2017 Sampling Locations (KMEP)
- SFPP Remediation Piping - Southeast Corner
- ⊠ Surveyed Park Boundary (by Coast Surveying, Inc., October 2015)

Note

<16 @ 5ft: Concentration of Benzene at 5 feet below ground surface is not detected.

49 @ 10ft: Concentration of Benzene at 10 feet below ground surface is 49 µg/m3.

DLA - Defense Logistics Agency.

KMEP - Kinder Morgan Energy Partner.

SFPP - Santa Fe Pacific Pipeline.

All concentrations are in micrograms per meters cubed (µg/m3).



DFSP Norwalk

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Norwalk, California

Project Number:	Date:	Drawn By:	Approved By:
091-NDLA-020	3/3/2017	P. W / C. S	P. P

0 70 140 280
Feet

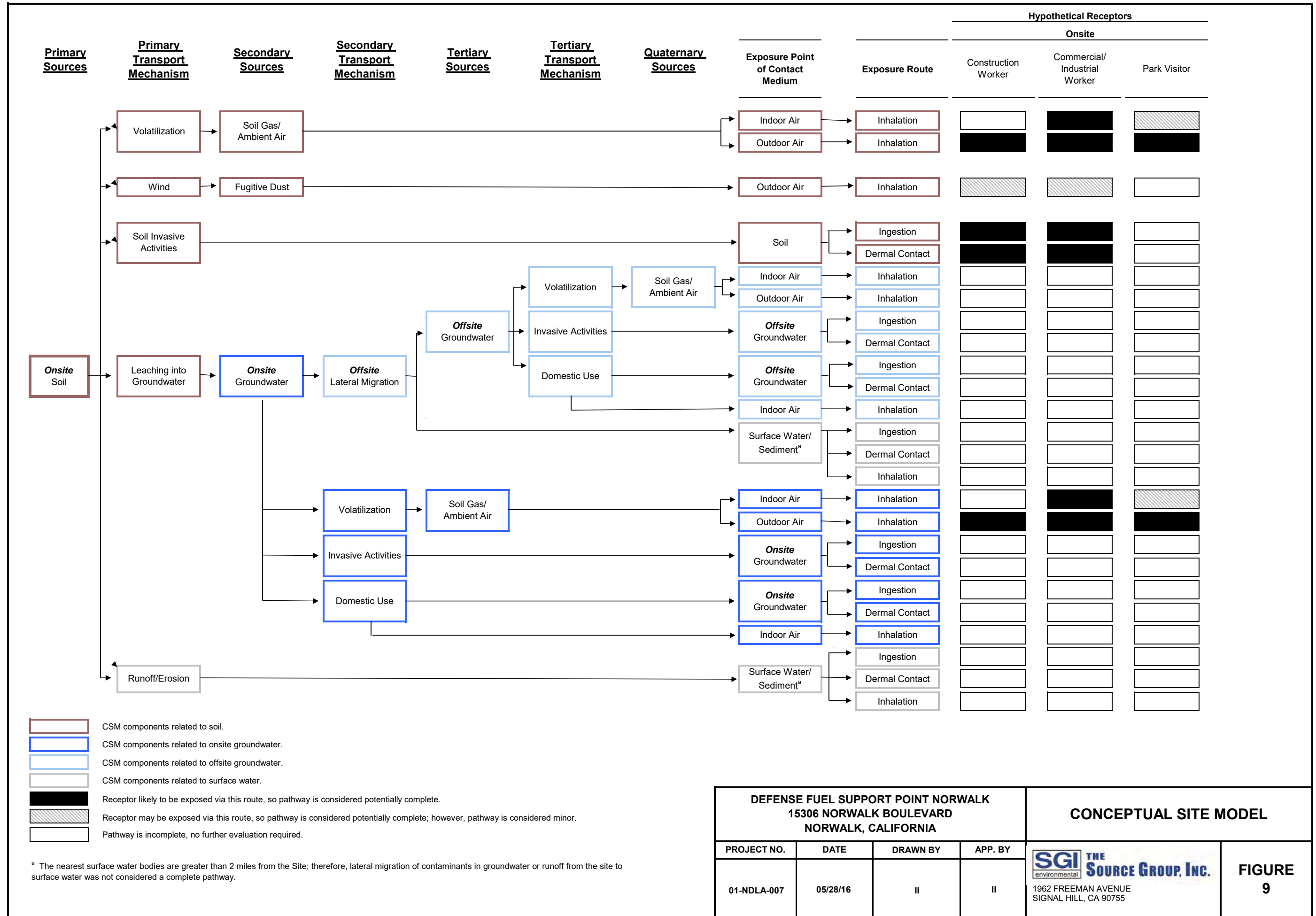
Soil Gas Benzene Concentrations Southeast Corner of 15-Acre Area



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Figure

8



- CSM components related to soil.
- CSM components related to onsite groundwater.
- CSM components related to offsite groundwater.
- CSM components related to surface water.
- Receptor likely to be exposed via this route, so pathway is considered potentially complete.
- Receptor may be exposed via this route, so pathway is considered potentially complete; however, pathway is considered minor.
- Pathway is incomplete, no further evaluation required.

^a The nearest surface water bodies are greater than 2 miles from the Site; therefore, lateral migration of contaminants in groundwater or runoff from the site to surface water was not considered a complete pathway.

TABLES

Table 1
Statistical Summary of Analytical Data and Screening-Level Risk Assessment for Soil (0 to 10 feet bgs) - 2015/2016 Investigation
 Defense Fuel Support Point - Norwalk
 Norwalk, California

Chemical ¹	Site-Specific Cleanup Goals ² (mg/kg)	Soil SL ³ (mg/kg)	Number of Samples	Number of Detections	Frequency of Detection	Arithmetic Mean of Detected (mg/kg)	Standard Deviation of Detected (mg/kg)	Minimum Detected Concentration (mg/kg)	Maximum Detected Concentration (mg/kg)	95 Percent Upper Confidence Limit of the Arithmetic Mean (95UCL) ⁴ (mg/kg)	Soil Exposure Point Concentration ⁵ EPC _{soil} (mg/kg)	Does EPC _{soil} Exceed Soil SL?
Total Petroleum Hydrocarbons (TPH)												
Carbon Range (C6-C12)	100	100	360	18	5%	4.2	7.2	0.55	31	1.0	1.0	No
Carbon Range (C13-C22)	100	230	936	277	30%	30	54	0.55	604	14	14	No
Carbon Range (C23-C32)	---	5100	936	497	53%	83	112	0.60	1,200	58	58	No
Carbon Range (C33-C44)	---	5100	936	470	50%	76	104	0.55	1,268	51	51	No
Carbon Range (C23-C44)	1000	5100	923	498	54%	154	202	1.0	1,710	108	108	No
Volatile Organic Compounds (VOCs)												
Acetone	0.994	0.5	942	51	5%	0.071	0.021	0.051	0.13	0.052	0.052	No
tert-Butyl alcohol (TBA)	0.02	0.075	942	1	0.1%	0.023	NE	0.023	0.023	NE	0.023	No
Ethylbenzene	1.07	1.4	942	10	1%	0.0027	0.0012	0.0020	0.0059	0.0020	0.0020	No
Toluene	0.356	2.9	942	98	10%	0.0029	0.0010	0.0020	0.0073	0.0021	0.0021	No
1,2,4-Trimethylbenzene	0.12	---	942	5	1%	0.0053	0.00022	0.0050	0.0056	0.0050	0.0050	No
o-Xylene	---	2.3	942	13	1%	0.0066	0.0018	0.0025	0.0089	0.0021	0.0021	No
m,p-Xylenes	---	2.3	942	76	8%	0.0055	0.0062	0.0020	0.024	0.0026	0.0026	No
Gasoline Range Organics (GRO)	100	100	942	7	1%	0.77	0.26	0.61	1.3	0.50	0.50	No

Notes:

SL = screening level.
 feet bgs = feet below ground surface.
 mg/kg = milligrams per kilogram.
 NE = Not estimated due to limitations in database (i.e., not detected in more than one sample).
 --- = Not available or not applicable.

- ¹ Represents statistical summary of chemicals detected in one or more samples.
- ² Represents the final site-specific cleanup goals for soil, approved by the RWQCB in their letter entitled *Approval of Modification to Cleanup Goals*, July 16, 2015.
- ³ Represents San Francisco Regional Water Quality Control Board (SFRWQCB) Tier 1 Environmental Screening Levels (ESLs) for soil, dated February 2016 revision 3.
- ⁴ Values are the upper confidence limit on the unknown mean as calculated and recommended by USEPA's ProUCL software. Non-detect results were entered as the detection limit value.
 UCLs were not calculated for analytes with fewer than five detected concentrations.
- ⁵ Value represents the lesser of the maximum detected concentration and the 95UCL.

References:

SFRWQCB. 2016. Environmental Screening Levels (ESLs). San Francisco Bay Region. Revision 3. February.

Table 2
Statistical Summary of Analytical Data and Screening-Level Risk Assessment for Soil Gas at 5 feet bgs - 2016 Investigation
 Defense Fuel Support Point - Norwalk
 Norwalk, California

Chemical ¹	Soil Gas SL Residential ² (µg/m ³)	Soil Gas SL Commercial ² (µg/m ³)	Number of Samples	Number of Detections	Frequency of Detection	Arithmetic Mean of Detected (µg/m ³)	Standard Deviation of Detected (µg/m ³)	Minimum Detected Concentration (µg/m ³)	Maximum Detected Concentration (µg/m ³)	Soil Gas Exposure Point Concentration ³ EPC _{sg} (µg/m ³)	Does EPC _{sg} Exceed Soil Gas SL? (µg/m ³)
Acetone	16,000,000	140,000,000	29	16	55%	87	43	54	190	190	No
Benzene	48	420	29	3	10%	29	1.0	28	30	30	No
Toluene	160,000	1,300,000	29	6	21%	86	32	40	120	120	No
m,p-Xylene	52,000	440,000	29	3	10%	57	9.0	48	66	66	No

Notes:

SL = screening level.

feet bgs = feet below ground surface.

µg/m³ = micrograms per liter.

¹ Represents statistical summary of chemicals detected in one or more samples.

² Represents San Francisco Regional Water Quality Control Board (SFRWQCB) Environmental Screening Levels (ESLs) for soil gas, dated February 2016 revision 3.

³ Value represents the maximum detected concentration.

References:

SFRWQCB. 2016. Environmental Screening Levels (ESLs). San Francisco Bay Region. Revision 3. February.

Table 3
Statistical Summary of Analytical Data and Screening-Level Risk Assessment for Soil Gas at 10 feet bgs - 2016 Investigation
 Defense Fuel Support Point - Norwalk
 Norwalk, California

Chemical ¹	Soil Gas SL Residential ² (µg/m ³)	Soil Gas SL Commercial ² (µg/m ³)	Number of Samples	Number of Detections	Frequency of Detection	Arithmetic Mean of Detected (µg/m ³)	Standard Deviation of Detected (µg/m ³)	Minimum Detected Concentration (µg/m ³)	Maximum Detected Concentration (µg/m ³)	Soil Gas Exposure Point Concentration ³ EPC _{sg} (µg/m ³)	Does EPC _{sg} Exceed Soil Gas SL? (µg/m ³)
Acetone	16,000,000	140,000,000	27	17	63%	122	123	49	530	530	No
Benzene	48	420	27	13	48%	47	21	18	98	98	Yes (6)
Toluene	160,000	1,300,000	27	15	56%	180	104	40	390	390	No
Ethylbenzene	560	4,900	27	11	41%	36	14	25	69	69	No
m,p-Xylene	52,000	440,000	27	14	52%	103	65	46	270	270	No
o-Xylene	52,000	440,000	27	10	37%	39	15	28	74	74	No
2-Butanone (MEK)	2,600,000	22,000,000	27	2	7%	74	4.9	70	77	77	No
(4) 4-Ethyltoluene	160,000	1,300,000	27	1	4%	NE	NE	59	59	59	No
(5) 1,2,4-Trimethylbenzene	3,650	31,000	27	1	4%	NE	NE	52	52	52	No

Notes:

SL = screening level.

feet bgs = feet below ground surface.

µg/m³ = micrograms per liter.

NE = Not estimated due to limitations in database (i.e., not detected in more than one sample).

¹ Represents statistical summary of chemicals detected in one or more samples.

² Represents San Francisco Regional Water Quality Control Board (SFRWQCB) Environmental Screening Levels (ESLs) for soil gas, dated February 2016 revision 3, unless otherwise noted.

³ Value represents the maximum detected concentration.

⁴ SFRWQCB ESLs were not available for 4-ethyltoluene; therefore, the ESL for toluene was used.

⁵ SFRWQCB ESLs were not available; therefore, the U.S. Environmental Protection Agency (USEPA) Regional Screening Levels (RSLs) were used, dated May 2016. USEPA RSLs have been developed for indoor air, but not soil gas. The residential and commercial soil gas SLs are based on applying a DTSC default attenuation factor to the air SLs. The resident air SLs and industrial air SLs were divided by DTSC default attenuation factors of 0.002 and 0.001, respectively (DTSC, 2011). The resulting value is the soil gas SL.

⁶ EPC_{sg} exceeds the soil gas SLs for residential land use.

References:

DTSC. 2011. Final Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air. California Environmental Protection Agency (CalEPA). October.

SFRWQCB. 2016. Environmental Screening Levels (ESLs). San Francisco Bay Region. Revision 3. February.

USEPA. 2016. Regional Screening Levels (RSLs). May.

Table 4
Statistical Summary of Analytical Data and Screening-Level Risk Assessment for Soil Gas at 5 feet bgs - 2017 Investigation
 Defense Fuel Support Point - Norwalk
 Norwalk, California

Chemical ¹	Soil Gas SL Residential ² (µg/m ³)	Soil Gas SL Commercial ² (µg/m ³)	Number of Samples	Number of Detections	Frequency of Detection	Arithmetic Mean of Detected (µg/m ³)	Standard Deviation of Detected (µg/m ³)	Minimum Detected Concentration (µg/m ³)	Maximum Detected Concentration (µg/m ³)	Soil Gas Exposure Point Concentration ³ EPC _{sg} (µg/m ³)	Does EPC _{sg} Exceed Soil Gas SL? (µg/m ³)
Acetone	16,000,000	140,000,000	4	4	100%	64	32	32	98	98	No
Benzene	48	420	4	4	100%	5.5	6.3	2.2	15	15	No
Toluene	160,000	1,300,000	4	4	100%	75	97	24	220	220	No
Ethylbenzene	560	4,900	4	4	100%	24	31	6.7	71	71	No
m,p-Xylene	52,000	440,000	4	4	100%	93	118	26	270	270	No
o-Xylene	52,000	440,000	4	4	100%	32	39	10	90	90	No
2-Butanone (MEK)	2,600,000	22,000,000	4	4	100%	22	17	5.9	41	41	No
(4) 1,3-Dichlorobenzene	65,000	530,000	4	4	100%	250	65	170	320	320	No
Ethanol	---	---	4	4	100%	205	31	170	240	240	No
(6) 4-Ethyltoluene	160,000	1,300,000	4	4	100%	14	19	3.3	42	42	No
(7) Isopropanol	15,500,000	130,000,000	4	4	100%	27	4.1	23	31	31	No
4-Methyl-2-Pentanone	1,600,000	13,000,000	4	2	50%	9.2	1.2	8.3	10	10	No
Tetrachloroethene	240	2,100	4	1	25%	7.3	NE	7.3	7.3	7.3	No
Trichloroethene	240	3,000	4	1	25%	3.9	NE	3.9	3.9	3.9	No
(5) 1,2,4-Trimethylbenzene	3,650	31,000	4	4	100%	43	52	12	120	120	No
(4) 1,3,5-Trimethylbenzene	21,000	180,000	4	4	100%	13	18	3.3	40	40	No

Notes:

SL = screening level.

feet bgs = feet below ground surface.

µg/m³ = micrograms per liter.

NE = Not estimated due to limitations in database (i.e., not detected in more than one sample).

--- = SL not available.

¹ Represents statistical summary of chemicals detected in one or more samples.

² Represents San Francisco Regional Water Quality Control Board (SFRWQCB) Environmental Screening Levels (ESLs) for soil gas, dated February 2016 revision 3, unless otherwise noted.

³ Value represents the maximum detected concentration.

⁴ SFRWQCB ESLs were not available; therefore, the Department of Toxic Substances Control (DTSC) Human and Ecological Risk Office Note 3 modified screening levels (DTSC-SLs) were used, dated June 2016. See Note 8.

⁵ SFRWQCB ESLs were not available; therefore, the U.S. Environmental Protection Agency (USEPA) Regional Screening Levels (RSLs) were used, dated May 2016. See Note 8.

⁶ SFRWQCB ESLs were not available for 4-ethyltoluene; therefore, the ESL for toluene was used.

⁷ USEPA RSLs were not available for isopropanol; therefore, the RSL for sec-butyl alcohol was used.

⁸ DTSC-SLs and USEPA RSLs have been developed for indoor air, but not soil gas. The residential and commercial soil gas SLs are based on applying a DTSC default attenuation factor to the air SLs. The resident air SLs and industrial air SLs were divided by DTSC default attenuation factors of 0.002 and 0.001, respectively (DTSC, 2011). The resulting value is the soil gas SL.

References:

DTSC. 2011. Final Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air. California Environmental Protection Agency (CalEPA). October.

DTSC. 2016. Human Health Risk Assessment Note Number 3: DTSC-modified Screening Levels (DTSC-SLs). California Environmental Protection Agency (CalEPA). June.

SFRWQCB. 2016. Environmental Screening Levels (ESLs). San Francisco Bay Region. Revision 3. February.

USEPA. 2016. Regional Screening Levels (RSLs). May.

Table 5
Statistical Summary of Analytical Data and Screening-Level Risk Assessment for Soil Gas at 10 feet bgs - 2017 Investigation
 Defense Fuel Support Point - Norwalk
 Norwalk, California

Chemical ¹	Soil Gas SL Residential ² (µg/m ³)	Soil Gas SL Commercial ² (µg/m ³)	Number of Samples	Number of Detections	Frequency of Detection	Arithmetic Mean of Detected (µg/m ³)	Standard Deviation of Detected (µg/m ³)	Minimum Detected Concentration (µg/m ³)	Maximum Detected Concentration (µg/m ³)	Soil Gas Exposure Point Concentration ³ EPC _{sg} (µg/m ³)	Does EPC _{sg} Exceed Soil Gas SL? (µg/m ³)
Acetone	16,000,000	140,000,000	5	5	100%	85	35	37	120	120	No
Benzene	48	420	5	5	100%	30	19	20	63	63	Yes (9)
Toluene	160,000	1,300,000	5	5	100%	410	133	300	640	640	No
Ethylbenzene	560	4,900	5	5	100%	120	26	90	150	150	No
m,p-Xylene	52,000	440,000	5	5	100%	428	94	300	520	520	No
o-Xylene	52,000	440,000	5	5	100%	154	45	91	200	200	No
2-Butanone (MEK)	2,600,000	22,000,000	5	5	100%	36	17	9.9	53	53	No
(4) Carbon Disulfide	365,000	3,100,000	5	4	80%	12	5.6	7.4	20	20	No
(5) 1,3-Dichlorobenzene	65,000	530,000	5	5	100%	230	28	210	270	270	No
Ethanol	---	---	5	5	100%	152	29	110	190	190	No
(6) 4-Ethyltoluene	160,000	1,300,000	5	5	100%	57	24	24	85	85	No
(7) Isopropanol	15,500,000	130,000,000	5	5	100%	23	2.4	20	26	26	No
4-Methyl-2-Pentanone	1,600,000	13,000,000	5	3	60%	16	4.4	11	19	19	No
Tetrachloroethene	240	2,100	5	2	40%	8.8	1.7	7.6	10	10	No
(4) 1,2,4-Trimethylbenzene	3,650	31,000	5	5	100%	164	83	58	270	270	No
(5) 1,3,5-Trimethylbenzene	21,000	180,000	5	5	100%	53	22	24	79	79	No

Notes:

SL = screening level.

feet bgs = feet below ground surface.

µg/m³ = micrograms per liter.

--- = SL not available.

¹ Represents statistical summary of chemicals detected in one or more samples.

² Represents San Francisco Regional Water Quality Control Board (SFRWQCB) Environmental Screening Levels (ESLs) for soil gas, dated February 2016 revision 3, unless otherwise noted.

³ Value represents the maximum detected concentration.

⁴ SFRWQCB ESLs were not available; therefore, the U.S. Environmental Protection Agency (USEPA) Regional Screening Levels (RSLs) were used, dated May 2016. See Note 8.

⁵ SFRWQCB ESLs were not available; therefore, the Department of Toxic Substances Control (DTSC) Human and Ecological Risk Office Note 3 modified screening levels (DTSC-SLs) were used, dated June 2016. See Note 8.

⁶ SFRWQCB ESLs were not available for 4-ethyltoluene; therefore, the ESL for toluene was used.

⁷ USEPA RSLs were not available for isopropanol; therefore, the RSL for sec-butyl alcohol was used.

⁸ DTSC-SLs and USEPA RSLs have been developed for indoor air, but not soil gas. The residential and commercial soil gas SLs are based on applying a DTSC default attenuation factor to the air SLs. The resident air SLs and industrial air SLs were divided by DTSC default attenuation factors of 0.002 and 0.001, respectively (DTSC, 2011). The resulting value is the soil gas SL.

⁹ EPC_{sg} exceeds the soil gas SLs for residential land use.

References:

DTSC. 2011. Final Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air. California Environmental Protection Agency (CalEPA). October.

DTSC. 2016. Human Health Risk Assessment Note Number 3: DTSC-modified Screening Levels (DTSC-SLs). California Environmental Protection Agency (CalEPA). June.

SFRWQCB. 2016. Environmental Screening Levels (ESLs). San Francisco Bay Region. Revision 3. February.

USEPA. 2016. Regional Screening Levels (RSLs). May.

APPENDIX A

FEBRUARY 2017 ADDITIONAL SITE INVESTIGATION

2017 ADDITIONAL SITE INVESTIGATION

In February 2017, at the request of the LARWQCB and Office of Environmental Health Hazard Assessment (OEHHA), Defense Logistics Agency-Energy (DLA-Energy) and Kinder Morgan Energy Partner (KMEP) conducted additional Site investigations in the southeastern corner of the 15-acre Eastern Portion of the Site. DLA-Energy installed four soil gas probes (SVM-24 through SVM-27) and KMEP installed four soil gas probes (SVM-20 through SVM-23). KMEP's investigation results are reported separately. DLA-Energy's additional Site investigation is described in this appendix.

Pre-Field Activities

Prior to mobilization to the field, a boring permit was secured from Los Angeles County Department of Public Health for drilling at the proposed soil and soil gas sampling locations (Attachment A).

The Site-Specific Health and Safety Plan (HASP) was updated for the proposed field activities. All SGI personnel and subcontractors associated with the project were required to be familiar with and comply with all provisions of the HASP. In accordance with the HASP, the proposed sampling locations were marked and cleared of underground utilities by Underground Services Alert (USA) as well as a private utility locating service prior to initiating any subsurface activity.

Soil Boring Activities

On February 15, 2017, a total of four soil borings (SB-24 through SB-27) were advanced by Environmental Support Technologies (EST) of Irvine, California. The borings were advanced using direct-push technology (DPT). During advancement of each boring, a soil sample was collected at 5 and 10 feet below ground surface (bgs). Soil samples were transported under chain-of-custody protocol to American Analytics in Chatsworth, California, for analysis for total petroleum hydrocarbons (TPH) by EPA method 8015 and volatile organic compounds (VOCs) by EPA Method 8260B. Laboratory analytical report is provided in Attachment B.

Soil in each boring was logged in general accordance with the Unified Soil Classification System (USCS). Boring logs were prepared for each of the cored borings and are provided in Attachment C. Each boring log includes the observed lithology, drilling and sampling methods, soil sample intervals, and soil vapor monitoring (SVM) probe construction details, where applicable.

Soil Vapor Monitoring Probe Installation

Four multi-level SVM probes (SVM-24 through SVM-27) were installed in the borings advanced at the Site. Installation activities were completed on February 15, 2017. Each SVM probe was constructed in a nested fashion, at depths of 5 and 10 feet bgs. Each SVM probe was constructed as follows:

1. A soil vapor filter tip, attached to ¼-inch outside diameter Teflon® tubing, was placed in the center of the borehole and advanced to the deepest sample depth;

2. A one-foot-thick sand pack (6-inches above and 6-inches below the filter tip) was emplaced within the borehole;
3. Above the sand pack, one foot of dry granular bentonite was emplaced within the borehole around the Teflon® tubing followed by hydrated bentonite up to 6-inches below the next sampling interval to prevent intrusion of ambient air into the borehole annulus during sampling;
4. Teflon® tubing for additional sample intervals was installed and the borehole filled as described above;
5. Above the upper-most sand pack at each location, hydrated bentonite was emplaced in the borehole to ground surface;
6. Upon completion of each sample interval, a cap was fitted to the top-end of the tubing and the tubing was labeled to identify the respective sample interval; and,
7. Following hydration of the bentonite seal, the probe was allowed to sit for a minimum of two hours to allow for the subsurface to equilibrate back to representative conditions.

Soil Gas Sampling

The soil gas sampling activities were conducted in general accordance with the methodologies outlined in the July 2015 Advisory – Active Soil Gas Investigations, (Soil Gas Advisory) published by the Department of Toxic Substances Control and Regional Water Quality Control Board (DTSC-RWQCB, 2015).

On February 16, 2017, soil gas samples were collected from probes SVM-24, SVM-25, SVM-26, and SVM-27 at 5 and 10 feet bgs. A duplicate soil gas sample was collected from probe SVM-25 at 10 feet bgs. Soil gas samples were collected from each location using a 1-liter SUMMA™ canister provided by Eurofins/Calscience in Garden Gove (Eurofins). Sampling manifolds were equipped with flow regulators limiting the vapor flow rate to 200 milliliters per minute (mL/min).

Prior to sampling each point, a shut-in test was performed. The above-ground sample train consisting of the 1-liter SUMMA™ sample canister, sample probe, and sampling tray consisting of syringe and vacuum pump was assembled. The system was then evacuated using a syringe, while a three-way valve was closed to the sample probe and the sample canister valve was also closed, the vacuum gauge was then observed for at least one minute. If any loss of vacuum was observed, the fittings were adjusted until the vacuum in the sample train did not noticeably dissipate. Once the shut-in test was validated, the sample train was switched to the sample probe consisting of Teflon® tubing.

Following completion of the shut-in test, each probe was purged to ensure that stagnant air was removed from the sampling system and that samples were representative of subsurface conditions. Approximately three volumes of the SVM probe were purged. Purging was achieved using a vacuum pump connected to the sampling manifold.

After purging was complete, samples were collected in the laboratory-provided 1-liter SUMMA™ canisters. Canister vacuum was monitored and recorded throughout sampling, and the canister was closed when approximately 1 to 2 inches of mercury (in Hg) of vacuum remained.

As a quality control measure, leak detection during sampling was conducted using isopropanol.

Following the collection of each sample, the canister was prepared for delivery to the laboratory for analysis. The sample containers were labeled with sample point identification, date, and time of collection. The samples were relinquished under chain-of-custody protocol to Eurofins for analysis by EPA method TO-15 for VOCs, including leak check compound isopropanol. The laboratory analytical report is provided in Attachment D.

Equipment Decontamination

To minimize the potential for cross-contamination between sampling locations, soil gas sampling equipment was either discarded or decontaminated prior to initiating work at each drilling location. All disposable sampling implements (tubing, glass sample syringes, etc.) were discarded and the direct-push rods and other non-disposable components were decontaminated between each boring.

References

Department of Toxic Substances Control and Regional Water Quality Control Board (DTSC-RWQCB). 2015. Advisory – Active Soil Gas Investigations, (Soil Gas Advisory). July.

**ATTACHMENT A
PERMIT**



Drinking Water Program

5050 Commerce Drive, Baldwin Park, CA 91706
Telephone: (626) 430-5420 • Facsimile: (626) 813-3016
http://publichealth.lacounty.gov/eh/ep/dw/dw_main.htm



Well Permit Approval

TO BE COMPLETED BY APPLICANT:


WORK SITE ADDRESS 15306 Norwalk Blvd.	CITY Norwalk	ZIP CA 90650	EMAIL ADDRESS FOR WELL PERMIT APPROVAL paul.parmentier@apexcos.com
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NOTICE:

- WORK PLAN APPROVALS ARE VALID FOR 180 DAYS. 30 DAY EXTENSIONS OF WORK PLAN APPROVALS ARE CONSIDERED ON AN INDIVIDUAL (CASE-BY-CASE) BASIS AND MAY BE SUBJECT TO ADDITIONAL PLAN REVIEW FEES (HOURLY RATE AS APPLICABLE).
- WORK PLAN MODIFICATIONS MAY BE REQUIRED IF WELL AND GEOLOGIC CONDITIONS ENCOUNTERED AT THE SITE INSPECTION ARE FOUND TO DIFFER FROM THE SCOPE OF WORK PRESENTED TO THE DEPARTMENT OF PUBLIC HEALTH—DRINKING WATER PROGRAM.
- THIS WELL PERMIT APPROVAL IS LIMITED TO COMPLIANCE WITH THE CALIFORNIA WELL STANDARDS AND THE LOS ANGELES COUNTY CODE AND DOES NOT GRANT ANY RIGHTS TO CONSTRUCT, RENOVATE, OR DECOMMISSION ANY WELL. THE APPLICANT IS RESPONSIBLE FOR SECURING ALL OTHER NECESSARY PERMITS SUCH AS WATER RIGHTS, PROPERTY RIGHTS, COASTAL COMMISSION APPROVALS, USE COVENANTS, ENCROACHMENT PERMISSIONS, UTILITY LINE SETBACKS, CITY/COUNTY PUBLIC WORKS RIGHTS OF WAY, ETC.
- ALL FIELD WORK MUST BE CONDUCTED UNDER THE DIRECT SUPERVISION OF A PROFESSIONAL GEOLOGIST LICENSED IN THE STATE OF CALIFORNIA.
- THIS PERMIT IS NOT COMPLETE UNTIL ALL OF THE FOLLOWING REQUIREMENTS ARE SIGNED BY THE DEPUTY HEALTH OFFICER. WORK SHALL NOT BE INITIATED WITHOUT A WORK PLAN APPROVAL STAMPED BY THE DEPARTMENT OF PUBLIC HEALTH—DRINKING WATER PROGRAM.
- NOTIFY THE DRINKING WATER PROGRAM BY EMAIL 3 BUSINESS DAYS BEFORE WORK IS SCHEDULED TO BEGIN.

Juan Rodriguez 626-430-5386 or Jurodriguez@ph.lacounty.gov

TO BE COMPLETED BY DEPARTMENT OF PUBLIC HEALTH—DRINKING WATER PROGRAM:

<input type="checkbox"/> WORK PLAN INCOMPLETE; SUBMIT THE FOLLOWING:	<input checked="" type="checkbox"/> WORK PLAN APPROVED Los Angeles County Drinking Water Stamp	DATE: <i>2/1/17</i>
	 R.E.H.S. NO: <i>6330</i> <i>Juan Rodriguez</i>	ADDITIONAL APPROVAL CONDITIONS: <i>On 1/30/17 \$516.00 was paid for Permit # SR0094992 to advance 3 soil borings at above-mentioned site.</i>

<input type="checkbox"/> ANNULAR SEAL FINAL INSPECTION REQUIRED	<input type="checkbox"/> WELL COMPLETION LOG REQUIRED
DATE ACCEPTED: _____ REHS signature: _____	DATE ACCEPTED: _____ REHS signature: _____
<input type="checkbox"/> WATER QUALITY—BACTERIOLOGICAL STANDARDS REQUIRED	<input type="checkbox"/> WATER QUALITY—CHEMICAL STANDARDS REQUIRED
DATE ACCEPTED: _____ REHS signature: _____	DATE ACCEPTED: _____ REHS signature: _____
<input type="checkbox"/> WATER SUPPLY YIELD REQUIRED	<input type="checkbox"/> OTHER REQUIRED
DATE ACCEPTED: _____ REHS signature: _____	DATE ACCEPTED: _____ REHS signature: _____

ATTACHMENT B
SOIL LABORATORY ANALYTICAL REPORT



9765 Eton Avenue
Chatsworth
California 91311
Tel: (818) 998-5547
Fax: (818) 998-7258

February 27, 2017

Neil Irish

The Source Group, Inc. (SH)
1962 Freeman Ave.
Signal Hill, CA 90755

**Re : DFSP Norwalk Soil Remediation / 04-NDLA-007
A5332063 / 7B16011**

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received on 02/16/17 15:27 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Assurance Program Manual, applicable standard operating procedures, and other related documentation. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report or require additional information please call me at American Analytics.

Sincerely,

Viorel Vasile
Operations Manager

**LABORATORY ANALYSIS RESULTS**

Client: The Source Group, Inc. (SH)
Project No: 04-NDLA-007
Project Name: DFSP Norwalk Soil Remediation

AA Project No: A5332063
Date Received: 02/16/17
Date Reported: 02/27/17

Sample ID	Laboratory ID	Matrix	TAT	Date Sampled	Date Received
-----------	---------------	--------	-----	--------------	---------------

8260B/5035 +OXY+TPHG

SB-24-5'	7B16011-01	Soil	5	02/15/17 00:00	02/16/17 15:27
SB-24-10'	7B16011-02	Soil	5	02/15/17 00:00	02/16/17 15:27
SB-25-5'	7B16011-03	Soil	5	02/15/17 00:00	02/16/17 15:27
SB-25-10'	7B16011-04	Soil	5	02/15/17 00:00	02/16/17 15:27
SB-26-5'	7B16011-05	Soil	5	02/15/17 00:00	02/16/17 15:27
SB-26-10'	7B16011-06	Soil	5	02/15/17 00:00	02/16/17 15:27
SB-27-5'	7B16011-07	Soil	5	02/15/17 00:00	02/16/17 15:27
SB-27-10'	7B16011-08	Soil	5	02/15/17 00:00	02/16/17 15:27

Carbon Chain Custom

SB-24-5'	7B16011-01	Soil	5	02/15/17 00:00	02/16/17 15:27
SB-24-10'	7B16011-02	Soil	5	02/15/17 00:00	02/16/17 15:27
SB-25-5'	7B16011-03	Soil	5	02/15/17 00:00	02/16/17 15:27
SB-25-10'	7B16011-04	Soil	5	02/15/17 00:00	02/16/17 15:27
SB-26-5'	7B16011-05	Soil	5	02/15/17 00:00	02/16/17 15:27
SB-26-10'	7B16011-06	Soil	5	02/15/17 00:00	02/16/17 15:27
SB-27-5'	7B16011-07	Soil	5	02/15/17 00:00	02/16/17 15:27
SB-27-10'	7B16011-08	Soil	5	02/15/17 00:00	02/16/17 15:27

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: The Source Group, Inc. (SH)
Project No: 04-NDLA-007
Project Name: DFSP Norwalk Soil Remediation
Method: VOCs, OXY & TPHG by GC/MS EPA 5035

AA Project No: A5332063
Date Received: 02/16/17
Date Reported: 02/27/17
Units: mg/kg

Date Sampled:	02/15/17	02/15/17	02/15/17	02/15/17	
Date Prepared:	02/17/17	02/17/17	02/17/17	02/17/17	
Date Analyzed:	02/17/17	02/17/17	02/17/17	02/17/17	
AA ID No:	7B16011-01	7B16011-02	7B16011-03	7B16011-04	
Client ID No:	SB-24-5'	SB-24-10'	SB-25-5'	SB-25-10'	
Matrix:	Soil	Soil	Soil	Soil	
Dilution Factor:	1	1	1	1	MRL

8260B/5035 +OXY+TPHG (EPA 8260B/5035)

Acetone	<0.050	<0.050	<0.050	<0.050	0.050
tert-Amyl Methyl Ether (TAME)	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
Benzene	<0.010	<0.010	<0.010	<0.010	0.010
Bromobenzene	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
Bromochloromethane	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
Bromodichloromethane	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
Bromoform	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
Bromomethane	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
2-Butanone (MEK)	<0.050	<0.050	<0.050	<0.050	0.050
tert-Butyl alcohol (TBA)	<0.020	<0.020	<0.020	<0.020	0.020
sec-Butylbenzene	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
tert-Butylbenzene	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
n-Butylbenzene	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
Carbon Disulfide	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
Carbon Tetrachloride	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
Chlorobenzene	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
Chloroethane	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
Chloroform	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
Chloromethane	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
2-Chlorotoluene	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
4-Chlorotoluene	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
1,2-Dibromo-3-chloropropane	<0.010	<0.010	<0.010	<0.010	0.010
Dibromochloromethane	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
1,2-Dibromoethane (EDB)	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
Dibromomethane	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
1,4-Dichlorobenzene	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
1,3-Dichlorobenzene	<0.0050	<0.0050	<0.0050	<0.0050	0.0050

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: The Source Group, Inc. (SH)
Project No: 04-NDLA-007
Project Name: DFSP Norwalk Soil Remediation
Method: VOCs, OXY & TPHG by GC/MS EPA 5035

AA Project No: A5332063
Date Received: 02/16/17
Date Reported: 02/27/17
Units: mg/kg

Date Sampled:	02/15/17	02/15/17	02/15/17	02/15/17	
Date Prepared:	02/17/17	02/17/17	02/17/17	02/17/17	
Date Analyzed:	02/17/17	02/17/17	02/17/17	02/17/17	
AA ID No:	7B16011-01	7B16011-02	7B16011-03	7B16011-04	
Client ID No:	SB-24-5'	SB-24-10'	SB-25-5'	SB-25-10'	
Matrix:	Soil	Soil	Soil	Soil	
Dilution Factor:	1	1	1	1	MRL

8260B/5035 +OXY+TPHG (EPA 8260B/5035) (continued)

1,2-Dichlorobenzene	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
Dichlorodifluoromethane (R12)	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
1,1-Dichloroethane	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
1,2-Dichloroethane (EDC)	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
trans-1,2-Dichloroethylene	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
cis-1,2-Dichloroethylene	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
1,1-Dichloroethylene	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
2,2-Dichloropropane	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
1,3-Dichloropropane	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
1,2-Dichloropropane	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
trans-1,3-Dichloropropylene	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
1,1-Dichloropropylene	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
cis-1,3-Dichloropropylene	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
Diisopropyl ether (DIPE)	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
Ethylbenzene	<0.0020	<0.0020	<0.0020	<0.0020	0.0020
Ethyl-tert-Butyl Ether (ETBE)	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
Gasoline Range Organics (GRO)	<0.50	<0.50	<0.50	<0.50	0.50
Hexachlorobutadiene	<0.010	<0.010	<0.010	<0.010	0.010
2-Hexanone (MBK)	<0.050	<0.050	<0.050	<0.050	0.050
Isopropylbenzene	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
4-Isopropyltoluene	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
Methyl-tert-Butyl Ether (MTBE)	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
Methylene Chloride	<0.050	<0.050	<0.050	<0.050	0.050
4-Methyl-2-pentanone (MIBK)	<0.050	<0.050	<0.050	<0.050	0.050
Naphthalene	<0.010	<0.010	<0.010	<0.010	0.010
n-Propylbenzene	<0.0050	<0.0050	<0.0050	<0.0050	0.0050

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: The Source Group, Inc. (SH)
Project No: 04-NDLA-007
Project Name: DFSP Norwalk Soil Remediation
Method: VOCs, OXY & TPHG by GC/MS EPA 5035

AA Project No: A5332063
Date Received: 02/16/17
Date Reported: 02/27/17
Units: mg/kg

Date Sampled:	02/15/17	02/15/17	02/15/17	02/15/17	
Date Prepared:	02/17/17	02/17/17	02/17/17	02/17/17	
Date Analyzed:	02/17/17	02/17/17	02/17/17	02/17/17	
AA ID No:	7B16011-01	7B16011-02	7B16011-03	7B16011-04	
Client ID No:	SB-24-5'	SB-24-10'	SB-25-5'	SB-25-10'	
Matrix:	Soil	Soil	Soil	Soil	
Dilution Factor:	1	1	1	1	MRL

8260B/5035 +OXY+TPHG (EPA 8260B/5035) (continued)

Styrene	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
1,1,1,2-Tetrachloroethane	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
1,1,2,2-Tetrachloroethane	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
Tetrachloroethylene (PCE)	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
Toluene	<0.0020	<0.0020	<0.0020	<0.0020	0.0020
1,2,4-Trichlorobenzene	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
1,2,3-Trichlorobenzene	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
1,1,2-Trichloroethane	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
1,1,1-Trichloroethane	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
Trichloroethylene (TCE)	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
Trichlorofluoromethane (R11)	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
1,2,3-Trichloropropane	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
1,3,5-Trimethylbenzene	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
1,2,4-Trimethylbenzene	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
Vinyl chloride	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
o-Xylene	<0.0020	<0.0020	<0.0020	<0.0020	0.0020
m,p-Xylenes	<0.0020	<0.0020	<0.0020	<0.0020	0.0020

Surrogates

					%REC Limits
4-Bromofluorobenzene	127%	128%	134%	134%	70-140
Dibromofluoromethane	124%	125%	126%	129%	70-140
Toluene-d8	110%	109%	111%	111%	70-140

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: The Source Group, Inc. (SH)
Project No: 04-NDLA-007
Project Name: DFSP Norwalk Soil Remediation
Method: VOCs, OXY & TPHG by GC/MS EPA 5035

AA Project No: A5332063
Date Received: 02/16/17
Date Reported: 02/27/17
Units: mg/kg

Date Sampled:	02/15/17	02/15/17	02/15/17	02/15/17	
Date Prepared:	02/17/17	02/17/17	02/17/17	02/17/17	
Date Analyzed:	02/17/17	02/17/17	02/17/17	02/17/17	
AA ID No:	7B16011-05	7B16011-06	7B16011-07	7B16011-08	
Client ID No:	SB-26-5'	SB-26-10'	SB-27-5'	SB-27-10'	
Matrix:	Soil	Soil	Soil	Soil	
Dilution Factor:	1	1	1	1	MRL

8260B/5035 +OXY+TPHG (EPA 8260B/5035)

Acetone	<0.050	<0.050	<0.050	<0.050	0.050
tert-Amyl Methyl Ether (TAME)	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
Benzene	<0.010	<0.010	<0.010	<0.010	0.010
Bromobenzene	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
Bromochloromethane	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
Bromodichloromethane	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
Bromoform	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
Bromomethane	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
2-Butanone (MEK)	<0.050	<0.050	<0.050	<0.050	0.050
tert-Butyl alcohol (TBA)	<0.020	<0.020	<0.020	<0.020	0.020
sec-Butylbenzene	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
tert-Butylbenzene	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
n-Butylbenzene	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
Carbon Disulfide	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
Carbon Tetrachloride	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
Chlorobenzene	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
Chloroethane	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
Chloroform	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
Chloromethane	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
2-Chlorotoluene	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
4-Chlorotoluene	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
1,2-Dibromo-3-chloropropane	<0.010	<0.010	<0.010	<0.010	0.010
Dibromochloromethane	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
1,2-Dibromoethane (EDB)	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
Dibromomethane	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
1,4-Dichlorobenzene	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
1,3-Dichlorobenzene	<0.0050	<0.0050	<0.0050	<0.0050	0.0050

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: The Source Group, Inc. (SH)
Project No: 04-NDLA-007
Project Name: DFSP Norwalk Soil Remediation
Method: VOCs, OXY & TPHG by GC/MS EPA 5035

AA Project No: A5332063
Date Received: 02/16/17
Date Reported: 02/27/17
Units: mg/kg

Date Sampled:	02/15/17	02/15/17	02/15/17	02/15/17	
Date Prepared:	02/17/17	02/17/17	02/17/17	02/17/17	
Date Analyzed:	02/17/17	02/17/17	02/17/17	02/17/17	
AA ID No:	7B16011-05	7B16011-06	7B16011-07	7B16011-08	
Client ID No:	SB-26-5'	SB-26-10'	SB-27-5'	SB-27-10'	
Matrix:	Soil	Soil	Soil	Soil	
Dilution Factor:	1	1	1	1	MRL

8260B/5035 +OXY+TPHG (EPA 8260B/5035) (continued)

1,2-Dichlorobenzene	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
Dichlorodifluoromethane (R12)	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
1,1-Dichloroethane	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
1,2-Dichloroethane (EDC)	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
trans-1,2-Dichloroethylene	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
cis-1,2-Dichloroethylene	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
1,1-Dichloroethylene	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
2,2-Dichloropropane	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
1,3-Dichloropropane	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
1,2-Dichloropropane	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
trans-1,3-Dichloropropylene	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
1,1-Dichloropropylene	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
cis-1,3-Dichloropropylene	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
Diisopropyl ether (DIPE)	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
Ethylbenzene	<0.0020	<0.0020	<0.0020	<0.0020	0.0020
Ethyl-tert-Butyl Ether (ETBE)	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
Gasoline Range Organics (GRO)	<0.50	<0.50	<0.50	<0.50	0.50
Hexachlorobutadiene	<0.010	<0.010	<0.010	<0.010	0.010
2-Hexanone (MBK)	<0.050	<0.050	<0.050	<0.050	0.050
Isopropylbenzene	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
4-Isopropyltoluene	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
Methyl-tert-Butyl Ether (MTBE)	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
Methylene Chloride	<0.050	<0.050	<0.050	<0.050	0.050
4-Methyl-2-pentanone (MIBK)	<0.050	<0.050	<0.050	<0.050	0.050
Naphthalene	<0.010	<0.010	<0.010	<0.010	0.010
n-Propylbenzene	<0.0050	<0.0050	<0.0050	<0.0050	0.0050

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: The Source Group, Inc. (SH)
Project No: 04-NDLA-007
Project Name: DFSP Norwalk Soil Remediation
Method: VOCs, OXY & TPHG by GC/MS EPA 5035

AA Project No: A5332063
Date Received: 02/16/17
Date Reported: 02/27/17
Units: mg/kg

Date Sampled:	02/15/17	02/15/17	02/15/17	02/15/17	
Date Prepared:	02/17/17	02/17/17	02/17/17	02/17/17	
Date Analyzed:	02/17/17	02/17/17	02/17/17	02/17/17	
AA ID No:	7B16011-05	7B16011-06	7B16011-07	7B16011-08	
Client ID No:	SB-26-5'	SB-26-10'	SB-27-5'	SB-27-10'	
Matrix:	Soil	Soil	Soil	Soil	
Dilution Factor:	1	1	1	1	MRL

8260B/5035 +OXY+TPHG (EPA 8260B/5035) (continued)

Styrene	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
1,1,1,2-Tetrachloroethane	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
1,1,2,2-Tetrachloroethane	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
Tetrachloroethylene (PCE)	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
Toluene	<0.0020	<0.0020	<0.0020	<0.0020	0.0020
1,2,4-Trichlorobenzene	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
1,2,3-Trichlorobenzene	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
1,1,2-Trichloroethane	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
1,1,1-Trichloroethane	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
Trichloroethylene (TCE)	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
Trichlorofluoromethane (R11)	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
1,2,3-Trichloropropane	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
1,3,5-Trimethylbenzene	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
1,2,4-Trimethylbenzene	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
Vinyl chloride	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
o-Xylene	<0.0020	<0.0020	<0.0020	<0.0020	0.0020
m,p-Xylenes	<0.0020	<0.0020	<0.0020	<0.0020	0.0020

Surrogates

					%REC Limits
4-Bromofluorobenzene	130%	135%	140%	124%	70-140
Dibromofluoromethane	128%	130%	134%	131%	70-140
Toluene-d8	110%	116%	118%	110%	70-140

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: The Source Group, Inc. (SH)
Project No: 04-NDLA-007
Project Name: DFSP Norwalk Soil Remediation
Method: Carbon Chain by GC/FID

AA Project No: A5332063
Date Received: 02/16/17
Date Reported: 02/27/17
Units: mg/kg

Date Sampled:	02/15/17	02/15/17	02/15/17	02/15/17	
Date Prepared:	02/17/17	02/17/17	02/17/17	02/17/17	
Date Analyzed:	02/17/17	02/17/17	02/17/17	02/17/17	
AA ID No:	7B16011-01	7B16011-02	7B16011-03	7B16011-04	
Client ID No:	SB-24-5'	SB-24-10'	SB-25-5'	SB-25-10'	
Matrix:	Soil	Soil	Soil	Soil	
Dilution Factor:	1	1	1	1	MRL

Carbon Chain Custom (EPA 8015M)

C13-C22	<10	<10	<10	<10	10
C23-C32	<10	<10	<10	<10	10
C33-C44	<10	<10	<10	<10	10

Surrogates

o-Terphenyl	144%	134%	137%	133%	<u>%REC Limits</u> 50-150
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Viorel Vasile
 Operations Manager



LABORATORY ANALYSIS RESULTS

Client: The Source Group, Inc. (SH)
Project No: 04-NDLA-007
Project Name: DFSP Norwalk Soil Remediation
Method: Carbon Chain by GC/FID

AA Project No: A5332063
Date Received: 02/16/17
Date Reported: 02/27/17
Units: mg/kg

Date Sampled:	02/15/17	02/15/17	02/15/17	02/15/17	
Date Prepared:	02/17/17	02/17/17	02/17/17	02/17/17	
Date Analyzed:	02/17/17	02/17/17	02/18/17	02/18/17	
AA ID No:	7B16011-05	7B16011-06	7B16011-07	7B16011-08	
Client ID No:	SB-26-5'	SB-26-10'	SB-27-5'	SB-27-10'	
Matrix:	Soil	Soil	Soil	Soil	
Dilution Factor:	1	1	1	1	MRL

Carbon Chain Custom (EPA 8015M)

C13-C22	<10	<10	<10	<10	10
C23-C32	<10	<10	<10	<10	10
C33-C44	<10	<10	<10	<10	10

Surrogates					%REC Limits
o-Terphenyl	130%	141%	137%	136%	50-150

Viorel Vasile
 Operations Manager



LABORATORY ANALYSIS RESULTS

Client: The Source Group, Inc. (SH)
Project No: 04-NDLA-007
Project Name: DFSP Norwalk Soil Remediation

AA Project No: A5332063
Date Received: 02/16/17
Date Reported: 02/27/17

Analyte	Reporting Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit	Notes
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VOCs, OXY & TPHG by GC/MS EPA 5035 - Quality Control

Batch B7B1708 - EPA 5035

Blank (B7B1708-BLK1)

Prepared & Analyzed: 02/17/17

Acetone	<0.050	0.050	mg/kg							
tert-Amyl Methyl Ether (TAME)	<0.0050	0.0050	mg/kg							
Benzene	<0.010	0.010	mg/kg							
Bromobenzene	<0.0050	0.0050	mg/kg							
Bromochloromethane	<0.0050	0.0050	mg/kg							
Bromodichloromethane	<0.0050	0.0050	mg/kg							
Bromoform	<0.0050	0.0050	mg/kg							
Bromomethane	<0.0050	0.0050	mg/kg							
2-Butanone (MEK)	<0.050	0.050	mg/kg							
tert-Butyl alcohol (TBA)	<0.020	0.020	mg/kg							
sec-Butylbenzene	<0.0050	0.0050	mg/kg							
tert-Butylbenzene	<0.0050	0.0050	mg/kg							
n-Butylbenzene	<0.0050	0.0050	mg/kg							
Carbon Disulfide	<0.0050	0.0050	mg/kg							
Carbon Tetrachloride	<0.0050	0.0050	mg/kg							
Chlorobenzene	<0.0050	0.0050	mg/kg							
Chloroethane	<0.0050	0.0050	mg/kg							
Chloroform	<0.0050	0.0050	mg/kg							
Chloromethane	<0.0050	0.0050	mg/kg							
2-Chlorotoluene	<0.0050	0.0050	mg/kg							
4-Chlorotoluene	<0.0050	0.0050	mg/kg							
1,2-Dibromo-3-chloropropane	<0.010	0.010	mg/kg							
Dibromochloromethane	<0.0050	0.0050	mg/kg							
1,2-Dibromoethane (EDB)	<0.0050	0.0050	mg/kg							
Dibromomethane	<0.0050	0.0050	mg/kg							
1,4-Dichlorobenzene	<0.0050	0.0050	mg/kg							
1,3-Dichlorobenzene	<0.0050	0.0050	mg/kg							
1,2-Dichlorobenzene	<0.0050	0.0050	mg/kg							
Dichlorodifluoromethane (R12)	<0.0050	0.0050	mg/kg							
1,1-Dichloroethane	<0.0050	0.0050	mg/kg							
1,2-Dichloroethane (EDC)	<0.0050	0.0050	mg/kg							

Viorel Vasile
 Operations Manager



LABORATORY ANALYSIS RESULTS

Client: The Source Group, Inc. (SH)
Project No: 04-NDLA-007
Project Name: DFSP Norwalk Soil Remediation

AA Project No: A5332063
Date Received: 02/16/17
Date Reported: 02/27/17

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limit	RPD RPD	Limit	Notes
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VOCs, OXY & TPHG by GC/MS EPA 5035 - Quality Control

Batch B7B1708 - EPA 5035

Blank (B7B1708-BLK1) Continued

Prepared & Analyzed: 02/17/17

trans-1,2-Dichloroethylene	<0.0050	0.0050	mg/kg							
cis-1,2-Dichloroethylene	<0.0050	0.0050	mg/kg							
1,1-Dichloroethylene	<0.0050	0.0050	mg/kg							
2,2-Dichloropropane	<0.0050	0.0050	mg/kg							
1,3-Dichloropropane	<0.0050	0.0050	mg/kg							
1,2-Dichloropropane	<0.0050	0.0050	mg/kg							
trans-1,3-Dichloropropylene	<0.0050	0.0050	mg/kg							
1,1-Dichloropropylene	<0.0050	0.0050	mg/kg							
cis-1,3-Dichloropropylene	<0.0050	0.0050	mg/kg							
Diisopropyl ether (DIPE)	<0.0050	0.0050	mg/kg							
Ethylbenzene	<0.0020	0.0020	mg/kg							
Ethyl-tert-Butyl Ether (ETBE)	<0.0050	0.0050	mg/kg							
Gasoline Range Organics (GRO)	<0.50	0.50	mg/kg							
Hexachlorobutadiene	<0.010	0.010	mg/kg							
2-Hexanone (MBK)	<0.050	0.050	mg/kg							
Isopropylbenzene	<0.0050	0.0050	mg/kg							
4-Isopropyltoluene	<0.0050	0.0050	mg/kg							
Methyl-tert-Butyl Ether (MTBE)	<0.0050	0.0050	mg/kg							
Methylene Chloride	<0.050	0.050	mg/kg							
4-Methyl-2-pentanone (MIBK)	<0.050	0.050	mg/kg							
Naphthalene	<0.010	0.010	mg/kg							
n-Propylbenzene	<0.0050	0.0050	mg/kg							
Styrene	<0.0050	0.0050	mg/kg							
1,1,1,2-Tetrachloroethane	<0.0050	0.0050	mg/kg							
1,1,2,2-Tetrachloroethane	<0.0050	0.0050	mg/kg							
Tetrachloroethylene (PCE)	<0.0050	0.0050	mg/kg							
Toluene	<0.0020	0.0020	mg/kg							
1,2,4-Trichlorobenzene	<0.0050	0.0050	mg/kg							
1,2,3-Trichlorobenzene	<0.0050	0.0050	mg/kg							
1,1,2-Trichloroethane	<0.0050	0.0050	mg/kg							
1,1,1-Trichloroethane	<0.0050	0.0050	mg/kg							

Viorel Vasile
Operations Manager

**LABORATORY ANALYSIS RESULTS**

Client: The Source Group, Inc. (SH)
Project No: 04-NDLA-007
Project Name: DFSP Norwalk Soil Remediation

AA Project No: A5332063
Date Received: 02/16/17
Date Reported: 02/27/17

Analyte	Reporting Result	Limit	Units	Spike Level	Source Result	%REC %REC	Limits	RPD	RPD Limit	Notes
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VOCs, OXY & TPHG by GC/MS EPA 5035 - Quality Control

Batch B7B1708 - EPA 5035

Blank (B7B1708-BLK1) Continued

Prepared & Analyzed: 02/17/17

Trichloroethylene (TCE)	<0.0050	0.0050	mg/kg							
Trichlorofluoromethane (R11)	<0.0050	0.0050	mg/kg							
1,2,3-Trichloropropane	<0.0050	0.0050	mg/kg							
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<0.0050	0.0050	mg/kg							
1,3,5-Trimethylbenzene	<0.0050	0.0050	mg/kg							
1,2,4-Trimethylbenzene	<0.0050	0.0050	mg/kg							
Vinyl chloride	<0.0050	0.0050	mg/kg							
o-Xylene	<0.0020	0.0020	mg/kg							
m,p-Xylenes	<0.0020	0.0020	mg/kg							

Surrogate: 4-Bromofluorobenzene	0.124		mg/kg	0.10		124	70-140			
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Surrogate: Dibromofluoromethane	0.118		mg/kg	0.10		118	70-140			
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Surrogate: Toluene-d8	0.110		mg/kg	0.10		110	70-140			
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LCS (B7B1708-BS1)

Prepared & Analyzed: 02/17/17

Acetone	0.0483	0.050	mg/kg	0.040		121	70-130		30	
tert-Amyl Methyl Ether (TAME)	0.0431	0.0050	mg/kg	0.040		108	70-130		30	
Benzene	0.0403	0.010	mg/kg	0.040		101	70-130		30	
Bromobenzene	0.0383	0.0050	mg/kg	0.040		95.8	70-130		30	
Bromochloromethane	0.0367	0.0050	mg/kg	0.040		91.8	70-130		30	
Bromodichloromethane	0.0416	0.0050	mg/kg	0.040		104	70-130		30	
Bromoform	0.0346	0.0050	mg/kg	0.040		86.6	70-130		30	
Bromomethane	0.0466	0.0050	mg/kg	0.040		117	70-130		30	
2-Butanone (MEK)	0.0403	0.050	mg/kg	0.040		101	70-130		30	
tert-Butyl alcohol (TBA)	0.209	0.020	mg/kg	0.20		105	70-130		30	
sec-Butylbenzene	0.0436	0.0050	mg/kg	0.040		109	70-130		30	
tert-Butylbenzene	0.0420	0.0050	mg/kg	0.040		105	70-130		30	
n-Butylbenzene	0.0457	0.0050	mg/kg	0.040		114	70-130		30	
Carbon Disulfide	0.0377	0.0050	mg/kg	0.040		94.2	70-130		30	
Carbon Tetrachloride	0.0386	0.0050	mg/kg	0.040		96.6	70-130		30	
Chlorobenzene	0.0412	0.0050	mg/kg	0.040		103	70-130		30	
Chloroethane	0.0441	0.0050	mg/kg	0.040		110	70-130		30	

Viorel Vasile
 Operations Manager

**LABORATORY ANALYSIS RESULTS**

Client: The Source Group, Inc. (SH)
Project No: 04-NDLA-007
Project Name: DFSP Norwalk Soil Remediation

AA Project No: A5332063
Date Received: 02/16/17
Date Reported: 02/27/17

Analyte	Reporting Result	Limit	Units	Spike Level	Source Result	%REC %REC	Limits	RPD	RPD Limit	Notes
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VOCs, OXY & TPHG by GC/MS EPA 5035 - Quality Control

Batch B7B1708 - EPA 5035

LCS (B7B1708-BS1) Continued

Prepared & Analyzed: 02/17/17

Chloroform	0.0411	0.0050	mg/kg	0.040		103	70-130		30	
Chloromethane	0.0358	0.0050	mg/kg	0.040		89.5	70-130		30	
2-Chlorotoluene	0.0389	0.0050	mg/kg	0.040		97.2	70-130		30	
4-Chlorotoluene	0.0436	0.0050	mg/kg	0.040		109	70-130		30	
1,2-Dibromo-3-chloropropane	0.0397	0.010	mg/kg	0.040		99.2	70-130		30	
Dibromochloromethane	0.0399	0.0050	mg/kg	0.040		99.7	70-130		30	
1,2-Dibromoethane (EDB)	0.0397	0.0050	mg/kg	0.040		99.2	70-130		30	
Dibromomethane	0.0407	0.0050	mg/kg	0.040		102	70-130		30	
1,4-Dichlorobenzene	0.0422	0.0050	mg/kg	0.040		106	70-130		30	
1,3-Dichlorobenzene	0.0411	0.0050	mg/kg	0.040		103	70-130		30	
1,2-Dichlorobenzene	0.0404	0.0050	mg/kg	0.040		101	70-130		30	
Dichlorodifluoromethane (R12)	0.0361	0.0050	mg/kg	0.040		90.2	70-130		30	
1,1-Dichloroethane	0.0417	0.0050	mg/kg	0.040		104	70-130		30	
1,2-Dichloroethane (EDC)	0.0443	0.0050	mg/kg	0.040		111	70-130		30	
trans-1,2-Dichloroethylene	0.0441	0.0050	mg/kg	0.040		110	70-130		30	
cis-1,2-Dichloroethylene	0.0399	0.0050	mg/kg	0.040		99.8	70-130		30	
1,1-Dichloroethylene	0.0414	0.0050	mg/kg	0.040		104	70-130		30	
2,2-Dichloropropane	0.0421	0.0050	mg/kg	0.040		105	70-130		30	
1,3-Dichloropropane	0.0432	0.0050	mg/kg	0.040		108	70-130		30	
1,2-Dichloropropane	0.0406	0.0050	mg/kg	0.040		101	70-130		30	
trans-1,3-Dichloropropylene	0.0420	0.0050	mg/kg	0.040		105	70-130		30	
1,1-Dichloropropylene	0.0410	0.0050	mg/kg	0.040		102	70-130		30	
cis-1,3-Dichloropropylene	0.0438	0.0050	mg/kg	0.040		109	70-130		30	
Diisopropyl ether (DIPE)	0.0421	0.0050	mg/kg	0.040		105	70-130		30	
Ethylbenzene	0.0430	0.0020	mg/kg	0.040		107	70-130		30	
Ethyl-tert-Butyl Ether (ETBE)	0.0412	0.0050	mg/kg	0.040		103	70-130		30	
Gasoline Range Organics (GRO)	0.961	0.50	mg/kg	1.0		96.1	70-130		30	
Hexachlorobutadiene	0.0353	0.010	mg/kg	0.040		88.2	70-130		30	
2-Hexanone (MBK)	0.0438	0.050	mg/kg	0.040		110	70-130		30	
Isopropylbenzene	0.0424	0.0050	mg/kg	0.040		106	70-130		30	
4-Isopropyltoluene	0.0451	0.0050	mg/kg	0.040		113	70-130		30	

Viorel Vasile
 Operations Manager

**LABORATORY ANALYSIS RESULTS**

Client: The Source Group, Inc. (SH)
Project No: 04-NDLA-007
Project Name: DFSP Norwalk Soil Remediation

AA Project No: A5332063
Date Received: 02/16/17
Date Reported: 02/27/17

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Notes
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VOCs, OXY & TPHG by GC/MS EPA 5035 - Quality Control

Batch B7B1708 - EPA 5035

LCS (B7B1708-BS1) Continued

Prepared & Analyzed: 02/17/17

Methyl-tert-Butyl Ether (MTBE)	0.0796	0.0050	mg/kg	0.080		99.5	70-130		30	
Methylene Chloride	0.0415	0.050	mg/kg	0.040		104	70-130		30	
4-Methyl-2-pentanone (MIBK)	0.0381	0.050	mg/kg	0.040		95.4	70-130		30	
Naphthalene	0.0354	0.010	mg/kg	0.040		88.5	70-130		30	
n-Propylbenzene	0.0468	0.0050	mg/kg	0.040		117	70-130		30	
Styrene	0.0424	0.0050	mg/kg	0.040		106	70-130		30	
1,1,1,2-Tetrachloroethane	0.0356	0.0050	mg/kg	0.040		89.0	70-130		30	
1,1,2,2-Tetrachloroethane	0.0398	0.0050	mg/kg	0.040		99.4	70-135		30	
Tetrachloroethylene (PCE)	0.0357	0.0050	mg/kg	0.040		89.2	70-130		30	
Toluene	0.0423	0.0020	mg/kg	0.040		106	70-130		30	
1,2,4-Trichlorobenzene	0.0349	0.0050	mg/kg	0.040		87.2	70-130		30	
1,2,3-Trichlorobenzene	0.0323	0.0050	mg/kg	0.040		80.9	70-130		30	
1,1,2-Trichloroethane	0.0389	0.0050	mg/kg	0.040		97.2	70-130		30	
1,1,1-Trichloroethane	0.0400	0.0050	mg/kg	0.040		100	70-130		30	
Trichloroethylene (TCE)	0.0359	0.0050	mg/kg	0.040		89.6	70-130		30	
Trichlorofluoromethane (R11)	0.0394	0.0050	mg/kg	0.040		98.5	70-130		30	
1,2,3-Trichloropropane	0.0400	0.0050	mg/kg	0.040		100	70-130		30	
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	0.0419	0.0050	mg/kg	0.040		105	70-130		30	
1,3,5-Trimethylbenzene	0.0421	0.0050	mg/kg	0.040		105	70-130		30	
1,2,4-Trimethylbenzene	0.0434	0.0050	mg/kg	0.040		108	70-130		30	
Vinyl chloride	0.0358	0.0050	mg/kg	0.040		89.6	70-130		30	
o-Xylene	0.0407	0.0020	mg/kg	0.040		102	70-130		30	
m,p-Xylenes	0.0841	0.0020	mg/kg	0.080		105	70-130		30	

Surrogate: 4-Bromofluorobenzene

0.108

mg/kg

0.10

108 70-140

Surrogate: Dibromofluoromethane

0.106

mg/kg

0.10

106 70-140

Surrogate: Toluene-d8

0.109

mg/kg

0.10

109 70-140

LCS Dup (B7B1708-BSD1)

Prepared: 02/17/17 Analyzed: 02/18/17

Acetone	0.0450	0.050	mg/kg	0.040		112	70-130	7.20	30	
tert-Amyl Methyl Ether (TAME)	0.0402	0.0050	mg/kg	0.040		101	70-130	6.96	30	
Benzene	0.0437	0.010	mg/kg	0.040		109	70-130	8.14	30	

Viorel Vasile
Operations Manager

**LABORATORY ANALYSIS RESULTS**

Client: The Source Group, Inc. (SH)
Project No: 04-NDLA-007
Project Name: DFSP Norwalk Soil Remediation

AA Project No: A5332063
Date Received: 02/16/17
Date Reported: 02/27/17

Analyte	Reporting Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit	Notes
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VOCs, OXY & TPHG by GC/MS EPA 5035 - Quality Control

Batch B7B1708 - EPA 5035

LCS Dup (B7B1708-BSD1) Continued

Prepared: 02/17/17 Analyzed: 02/18/17

Bromobenzene	0.0391	0.0050	mg/kg	0.040		97.6	70-130	1.91	30	
Bromochloromethane	0.0391	0.0050	mg/kg	0.040		97.8	70-130	6.33	30	
Bromodichloromethane	0.0449	0.0050	mg/kg	0.040		112	70-130	7.67	30	
Bromoform	0.0353	0.0050	mg/kg	0.040		88.3	70-130	2.00	30	
Bromomethane	0.0489	0.0050	mg/kg	0.040		122	70-130	4.81	30	
2-Butanone (MEK)	0.0330	0.050	mg/kg	0.040		82.6	70-130	19.8	30	
tert-Butyl alcohol (TBA)	0.225	0.020	mg/kg	0.20		113	70-130	7.39	30	
sec-Butylbenzene	0.0439	0.0050	mg/kg	0.040		110	70-130	0.869	30	
tert-Butylbenzene	0.0427	0.0050	mg/kg	0.040		107	70-130	1.70	30	
n-Butylbenzene	0.0459	0.0050	mg/kg	0.040		115	70-130	0.436	30	
Carbon Disulfide	0.0405	0.0050	mg/kg	0.040		101	70-130	7.12	30	
Carbon Tetrachloride	0.0411	0.0050	mg/kg	0.040		103	70-130	6.22	30	
Chlorobenzene	0.0408	0.0050	mg/kg	0.040		102	70-130	1.02	30	
Chloroethane	0.0456	0.0050	mg/kg	0.040		114	70-130	3.35	30	
Chloroform	0.0449	0.0050	mg/kg	0.040		112	70-130	8.79	30	
Chloromethane	0.0413	0.0050	mg/kg	0.040		103	70-130	14.2	30	
2-Chlorotoluene	0.0364	0.0050	mg/kg	0.040		91.0	70-130	6.59	30	
4-Chlorotoluene	0.0423	0.0050	mg/kg	0.040		106	70-130	2.94	30	
1,2-Dibromo-3-chloropropane	0.0399	0.010	mg/kg	0.040		99.6	70-130	0.453	30	
Dibromochloromethane	0.0419	0.0050	mg/kg	0.040		105	70-130	4.94	30	
1,2-Dibromoethane (EDB)	0.0410	0.0050	mg/kg	0.040		102	70-130	3.32	30	
Dibromomethane	0.0443	0.0050	mg/kg	0.040		111	70-130	8.51	30	
1,4-Dichlorobenzene	0.0409	0.0050	mg/kg	0.040		102	70-130	3.27	30	
1,3-Dichlorobenzene	0.0399	0.0050	mg/kg	0.040		99.7	70-130	2.96	30	
1,2-Dichlorobenzene	0.0411	0.0050	mg/kg	0.040		103	70-130	1.57	30	
Dichlorodifluoromethane (R12)	0.0391	0.0050	mg/kg	0.040		97.8	70-130	8.09	30	
1,1-Dichloroethane	0.0446	0.0050	mg/kg	0.040		112	70-130	6.81	30	
1,2-Dichloroethane (EDC)	0.0480	0.0050	mg/kg	0.040		120	70-130	8.02	30	
trans-1,2-Dichloroethylene	0.0471	0.0050	mg/kg	0.040		118	70-130	6.75	30	
cis-1,2-Dichloroethylene	0.0428	0.0050	mg/kg	0.040		107	70-130	7.01	30	
1,1-Dichloroethylene	0.0432	0.0050	mg/kg	0.040		108	70-130	4.25	30	

Viorel Vasile
 Operations Manager



LABORATORY ANALYSIS RESULTS

Client: The Source Group, Inc. (SH)
Project No: 04-NDLA-007
Project Name: DFSP Norwalk Soil Remediation

AA Project No: A5332063
Date Received: 02/16/17
Date Reported: 02/27/17

Analyte	Reporting Result	Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
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VOCs, OXY & TPHG by GC/MS EPA 5035 - Quality Control

Batch B7B1708 - EPA 5035

LCS Dup (B7B1708-BSD1) Continued

Prepared: 02/17/17 Analyzed: 02/18/17

2,2-Dichloropropane	0.0430	0.0050	mg/kg	0.040	108	70-130	2.11	30	
1,3-Dichloropropane	0.0442	0.0050	mg/kg	0.040	110	70-130	2.24	30	
1,2-Dichloropropane	0.0449	0.0050	mg/kg	0.040	112	70-130	10.2	30	
trans-1,3-Dichloropropylene	0.0440	0.0050	mg/kg	0.040	110	70-130	4.51	30	
1,1-Dichloropropylene	0.0438	0.0050	mg/kg	0.040	110	70-130	6.65	30	
cis-1,3-Dichloropropylene	0.0443	0.0050	mg/kg	0.040	111	70-130	1.23	30	
Diisopropyl ether (DIPE)	0.0462	0.0050	mg/kg	0.040	115	70-130	9.24	30	
Ethylbenzene	0.0434	0.0020	mg/kg	0.040	108	70-130	0.926	30	
Ethyl-tert-Butyl Ether (ETBE)	0.0458	0.0050	mg/kg	0.040	115	70-130	10.5	30	
Gasoline Range Organics (GRO)	0.958	0.50	mg/kg	1.0	95.8	70-130	0.309	30	
Hexachlorobutadiene	0.0348	0.010	mg/kg	0.040	87.0	70-130	1.31	30	
2-Hexanone (MBK)	0.0398	0.050	mg/kg	0.040	99.4	70-130	9.72	30	
Isopropylbenzene	0.0433	0.0050	mg/kg	0.040	108	70-130	1.96	30	
4-Isopropyltoluene	0.0451	0.0050	mg/kg	0.040	113	70-130	0.00	30	
Methyl-tert-Butyl Ether (MTBE)	0.0885	0.0050	mg/kg	0.080	111	70-130	10.6	30	
Methylene Chloride	0.0392	0.050	mg/kg	0.040	97.9	70-130	5.80	30	
4-Methyl-2-pentanone (MIBK)	0.0354	0.050	mg/kg	0.040	88.4	70-130	7.51	30	
Naphthalene	0.0364	0.010	mg/kg	0.040	91.0	70-130	2.79	30	
n-Propylbenzene	0.0475	0.0050	mg/kg	0.040	119	70-130	1.48	30	
Styrene	0.0422	0.0050	mg/kg	0.040	106	70-130	0.472	30	
1,1,1,2-Tetrachloroethane	0.0362	0.0050	mg/kg	0.040	90.6	70-130	1.73	30	
1,1,2,2-Tetrachloroethane	0.0386	0.0050	mg/kg	0.040	96.5	70-135	2.96	30	
Tetrachloroethylene (PCE)	0.0356	0.0050	mg/kg	0.040	88.9	70-130	0.393	30	
Toluene	0.0433	0.0020	mg/kg	0.040	108	70-130	2.38	30	
1,2,4-Trichlorobenzene	0.0347	0.0050	mg/kg	0.040	86.8	70-130	0.402	30	
1,2,3-Trichlorobenzene	0.0323	0.0050	mg/kg	0.040	80.8	70-130	0.124	30	
1,1,2-Trichloroethane	0.0408	0.0050	mg/kg	0.040	102	70-130	4.92	30	
1,1,1-Trichloroethane	0.0430	0.0050	mg/kg	0.040	107	70-130	7.08	30	
Trichloroethylene (TCE)	0.0399	0.0050	mg/kg	0.040	99.6	70-130	10.6	30	
Trichlorofluoromethane (R11)	0.0429	0.0050	mg/kg	0.040	107	70-130	8.60	30	
1,2,3-Trichloropropane	0.0399	0.0050	mg/kg	0.040	99.8	70-130	0.100	30	

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: The Source Group, Inc. (SH)
Project No: 04-NDLA-007
Project Name: DFSP Norwalk Soil Remediation

AA Project No: A5332063
Date Received: 02/16/17
Date Reported: 02/27/17

Analyte	Reporting Result	Limit	Units	Spike Level	Source Result	%REC %REC	Limits	RPD	RPD Limit	Notes
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VOCs, OXY & TPHG by GC/MS EPA 5035 - Quality Control

Batch B7B1708 - EPA 5035

LCS Dup (B7B1708-BSD1) Continued

Prepared: 02/17/17 Analyzed: 02/18/17

1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	0.0435	0.0050	mg/kg	0.040		109	70-130	3.84	30	
1,3,5-Trimethylbenzene	0.0428	0.0050	mg/kg	0.040		107	70-130	1.65	30	
1,2,4-Trimethylbenzene	0.0441	0.0050	mg/kg	0.040		110	70-130	1.65	30	
Vinyl chloride	0.0419	0.0050	mg/kg	0.040		105	70-130	15.5	30	
o-Xylene	0.0406	0.0020	mg/kg	0.040		102	70-130	0.197	30	
m,p-Xylenes	0.0834	0.0020	mg/kg	0.080		104	70-130	0.884	30	

Surrogate: 4-Bromofluorobenzene	0.107		mg/kg	0.10		107	70-140			
Surrogate: Dibromofluoromethane	0.112		mg/kg	0.10		112	70-140			
Surrogate: Toluene-d8	0.110		mg/kg	0.10		110	70-140			

Carbon Chain by GC/FID - Quality Control

Batch B7B1713 - EPA 3550B

Blank (B7B1713-BLK1)

Prepared & Analyzed: 02/17/17

C13-C22	<10	10	mg/kg							
C23-C32	<10	10	mg/kg							
C33-C44	<10	10	mg/kg							
Surrogate: o-Terphenyl	11.3		mg/kg	10		113	50-150			

LCS (B7B1713-BS1)

Prepared & Analyzed: 02/17/17

Diesel Range Organics as Diesel	220	10	mg/kg	200		110	70-130			
Surrogate: o-Terphenyl	14.3		mg/kg	10		143	50-150			

LCS Dup (B7B1713-BSD1)

Prepared & Analyzed: 02/17/17

Diesel Range Organics as Diesel	215	10	mg/kg	200		108	70-130	2.21	40	
Surrogate: o-Terphenyl	14.2		mg/kg	10		142	50-150			

Matrix Spike (B7B1713-MS1)

Source: 7B16011-08 Prepared: 02/17/17 Analyzed: 02/18/17

Diesel Range Organics as Diesel	218	10	mg/kg	200		109	60-140			
Surrogate: o-Terphenyl	15.0		mg/kg	10		150	50-150			

Matrix Spike Dup (B7B1713-MSD1)

Source: 7B16011-08 Prepared: 02/17/17 Analyzed: 02/18/17

Diesel Range Organics as Diesel	213	10	mg/kg	200		107	60-140	2.34	40	
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Viorel Vasile
Operations Manager

**LABORATORY ANALYSIS RESULTS**

Client: The Source Group, Inc. (SH)
Project No: 04-NDLA-007
Project Name: DFSP Norwalk Soil Remediation

AA Project No: A5332063
Date Received: 02/16/17
Date Reported: 02/27/17

Analyte	Reporting Result	Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Carbon Chain by GC/FID - Quality Control										
<i>Batch B7B1713 - EPA 3550B</i>										
Matrix Spike Dup (B7B1713-MSD1) Source: 7B16011-08 Prepared: 02/17/17 Analyzed: 02/18/17										
Continued										
<i>Surrogate: o-Terphenyl</i>	13.8		mg/kg	10		138	50-150			

Viorel Vasile
Operations Manager



LABORATORY ANALYSIS RESULTS

Client: The Source Group, Inc. (SH)
Project No: 04-NDLA-007
Project Name: DFSP Norwalk Soil Remediation

AA Project No: A5332063
Date Received: 02/16/17
Date Reported: 02/27/17

Special Notes

Gasoline Range Organics (GRO) concentration represents the C4-C12 carbon range.

Viorel Vasile
Operations Manager

**ATTACHMENT C
SOIL BORING LOGS**

PROJECT NAME/NO.: DFSP Norwalk; 091-NDLA-20

LOCATION: DFSP Norwalk, 15306 Norwalk Blvd, Norwalk, California - Southeast Corner

START DATE: 2/15/17

FINISH DATE: 2/15/17

GW DEPTH (FT BGS): NA

DRILLER: Morgan and Marty

SURFACE ELEV. (FT MSL): NA

LOGGED BY: Kevin Nguyen

DRILL EQUIP: CME-85

NORTHING: NA

CHECKED BY: Paul Parmentier

DRILL METHOD: Hollow-Stem Auger

EASTING: NA

SAMPLE METHOD: Split Spoon

BORE ANGLE: Vertical

CONTRACTOR: EST

HOLE DIAM. (IN.)/DEPTH (FT BGS): 2.25

MONITORING DEVICE: Mini Rae 3000 PID

BACKFILL MATERIAL: Bentonite / Cement Grout

DEPTH (FT.)	Time	Blow Counts	SAMPLE ID	VOCs (PPM) PID	LITH. SYMBOL	USCS	SOIL DESCRIPTION [% Gravel; % Sand; % Silt; % Clay]	BORING BACKFILL
0.0								
						SM	SILTY SAND [0;80;20;0] brown, slightly moist, fine-grained, poorly graded, no plasticity, no hydrocarbon odor.	
-5.0	10:05		SB-24-5'	0		SM	SILTY SAND [0;80;20;0] brown, slightly moist, fine-grained, poorly graded, no plasticity, no hydrocarbon odor.	
-10.0	10:09		SB-24-10'	0		ML	SILT [0;5;80;15] grayish brown, slightly moist, fine-grained, poorly graded, medium plasticity, no hydrocarbon odor.	Bentonite/ Cement Grout

PROJECT NAME/NO.: DFSP Norwalk; 091-NDLA-20

LOCATION: DFSP Norwalk, 15306 Norwalk Blvd, Norwalk, California - Southeast Corner

START DATE: 2/15/17

FINISH DATE: 2/15/17

GW DEPTH (FT BGS): NA

DRILLER: Morgan and Marty

SURFACE ELEV. (FT MSL): NA

LOGGED BY: Kevin Nguyen

DRILL EQUIP: CME-85

NORTHING: NA

CHECKED BY: Paul Parmentier

DRILL METHOD: Hollow-Stem Auger

EASTING: NA

SAMPLE METHOD: Split Spoon

BORE ANGLE: Vertical

CONTRACTOR: EST

HOLE DIAM. (IN.)/DEPTH (FT BGS): 2.25

MONITORING DEVICE: Mini Rae 3000 PID

BACKFILL MATERIAL: Bentonite / Cement Grout

DEPTH (FT.)	Time	Blow Counts	SAMPLE ID	VOCs (PPM) PID	LITH. SYMBOL	USCS	SOIL DESCRIPTION [% Gravel; % Sand; % Silt; % Clay]	BORING BACKFILL
0.0								
						SM	SILTY SAND [0;80;20;0] brown, slightly moist, fine-grained, poorly graded, no plasticity, no hydrocarbon odor.	
-5.0	09:30		SB-25-5'	5.7		SM	SILTY SAND [0;80;20;0] brown, slightly moist, fine-grained, poorly graded, no plasticity, no hydrocarbon odor.	
-10.0	09:55		SB-25-10'	0		ML	SILT [0;5;80;15] grayish brown, slightly moist, fine-grained, poorly graded, medium plasticity, no hydrocarbon odor.	Bentonite/ Cement Grout

PROJECT NAME/NO.: DFSP Norwalk; 091-NDLA-20

LOCATION: DFSP Norwalk, 15306 Norwalk Blvd, Norwalk, California - Southeast Corner

START DATE: 2/15/17

FINISH DATE: 2/15/17

GW DEPTH (FT BGS): NA

DRILLER: Morgan and Marty

SURFACE ELEV. (FT MSL): NA

LOGGED BY: Kevin Nguyen

DRILL EQUIP: CME-85

NORTHING: NA

CHECKED BY: Paul Parmentier

DRILL METHOD: Hollow-Stem Auger

EASTING: NA

SAMPLE METHOD: Split Spoon

BORE ANGLE: Vertical

CONTRACTOR: EST

HOLE DIAM. (IN.)/DEPTH (FT BGS): 2.25

MONITORING DEVICE: Mini Rae 3000 PID

BACKFILL MATERIAL: Bentonite / Cement Grout

DEPTH (FT.)	Time	Blow Counts	SAMPLE ID	VOCs (PPM) PID	LITH. SYMBOL	USCS	SOIL DESCRIPTION [% Gravel; % Sand; % Silt; % Clay]	BORING BACKFILL
0.0								
					█	SM	SILTY SAND [0;80;20;0] brown, slightly moist, fine-grained, poorly graded, no plasticity, no hydrocarbon odor.	
-5.0	10:20		SB-26-5'	0	█	SM	SILTY SAND [0;80;20;0] brown, slightly moist, fine-grained, poorly graded, no plasticity, no hydrocarbon odor.	
-10.0	10:27		SB-26-10'	0	█	ML	SILT [0;5;80;15] grayish brown, slightly moist, fine-grained, poorly graded, medium plasticity, no hydrocarbon odor.	█ Bentonite/ Cement Grout

PROJECT NAME/NO.: DFSP Norwalk; 091-NDLA-20

LOCATION: DFSP Norwalk, 15306 Norwalk Blvd, Norwalk, California - Southeast Corner

START DATE: 2/15/17

FINISH DATE: 2/15/17

GW DEPTH (FT BGS): NA

DRILLER: Morgan and Marty

SURFACE ELEV. (FT MSL): NA

LOGGED BY: Kevin Nguyen

DRILL EQUIP: CME-85

NORTHING: NA

CHECKED BY: Paul Parmentier

DRILL METHOD: Hollow-Stem Auger

EASTING: NA

SAMPLE METHOD: Split Spoon

BORE ANGLE: Vertical

CONTRACTOR: EST

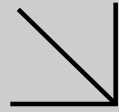
HOLE DIAM. (IN.)/DEPTH (FT BGS): 2.25

MONITORING DEVICE: Mini Rae 3000 PID

BACKFILL MATERIAL: Bentonite / Cement Grout

DEPTH (FT.)	Time	Blow Counts	SAMPLE ID	VOCs (PPM) PID	LITH. SYMBOL	USCS	SOIL DESCRIPTION [% Gravel; % Sand; % Silt; % Clay]	BORING BACKFILL
0.0								
					█	SM	SILTY SAND [0;80;20;0] brown, moist, fine-grained, poorly graded, no plasticity, no hydrocarbon odor.	
-5.0	10:30		SB-27-5'	0	█	SM	SILTY SAND [0;80;20;0] brown, moist, fine-grained, poorly graded, no plasticity, no hydrocarbon odor.	
-10.0	10:35		SB-27-10'	0	█	SP	SAND [0;100;0;0] grayish brown, slightly moist, fine-grained, poorly graded, medium plasticity, no hydrocarbon odor.	█ Bentonite/ Cement Grout

ATTACHMENT D
SOIL GAS LABORATORY ANALYTICAL REPORT



WORK ORDER NUMBER: 17-02-1474

The difference is service



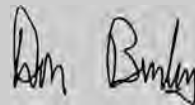
AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: Environmental Support Technologies, Inc.

Client Project Name: Former Defense Fuel Depot / EST3043

Attention: Ashley Flores
8 Goodyear, Suite 125
Irvine, CA 92618-3745



Approved for release on 02/22/2017 by:
Don Burley
Project Manager

ResultLink ▶

Email your PM ▶

Eurofins Calscience, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC 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: Former Defense Fuel Depot / EST3043
 Work Order Number: 17-02-1474

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Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 02/16/17. They were assigned to Work Order 17-02-1474.

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: Environmental Support Technologies, Inc.	Work Order:	17-02-1474
8 Goodyear, Suite 125	Project Name:	Former Defense Fuel Depot / EST3043
Irvine, CA 92618-3745	PO Number:	EST3043
	Date/Time Received:	02/16/17 13:52
	Number of Containers:	9

Attn: Ashley Flores

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
SVM27-5'	17-02-1474-1	02/16/17 08:37	1	Air
SVM27-10'	17-02-1474-2	02/16/17 09:11	1	Air
SVM26-5'	17-02-1474-3	02/16/17 09:51	1	Air
SVM26-10'	17-02-1474-4	02/16/17 10:32	1	Air
SVM25-5'	17-02-1474-5	02/16/17 11:06	1	Air
SVM25-10'	17-02-1474-6	02/16/17 11:27	1	Air
SVM25-10' Dup	17-02-1474-7	02/16/17 11:36	1	Air
SVM24-5'	17-02-1474-8	02/16/17 12:06	1	Air
SVM24-10'	17-02-1474-9	02/16/17 12:27	1	Air

Analytical Report

Environmental Support Technologies, Inc.
 8 Goodyear, Suite 125
 Irvine, CA 92618-3745

Date Received: 02/16/17
 Work Order: 17-02-1474
 Preparation: N/A
 Method: EPA TO-15
 Units: ug/m3

Project: Former Defense Fuel Depot / EST3043

Page 1 of 20

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SVM27-5'	17-02-1474-1-A	02/16/17 08:37	Air	GC/MS AA	N/A	02/20/17 20:42	170220L01

Parameter	Result	RL	DF	Qualifiers
Acetone	40	4.8	1.00	
Benzene	2.2	1.6	1.00	
Benzyl Chloride	ND	7.8	1.00	
Bromodichloromethane	ND	3.4	1.00	
Bromoform	ND	5.2	1.00	
Bromomethane	ND	1.9	1.00	
2-Butanone	11	4.4	1.00	
Carbon Disulfide	ND	6.2	1.00	
Carbon Tetrachloride	ND	3.1	1.00	
Chlorobenzene	ND	2.3	1.00	
Chloroethane	ND	1.3	1.00	
Chloroform	ND	2.4	1.00	
Chloromethane	ND	1.0	1.00	
Dibromochloromethane	ND	4.3	1.00	
Dichlorodifluoromethane	ND	2.5	1.00	
1,1-Dichloroethane	ND	2.0	1.00	
1,1-Dichloroethene	ND	2.0	1.00	
1,2-Dibromoethane	ND	3.8	1.00	
Dichlorotetrafluoroethane	ND	14	1.00	
1,2-Dichlorobenzene	ND	3.0	1.00	
1,2-Dichloroethane	ND	2.0	1.00	
1,2-Dichloropropane	ND	2.3	1.00	
1,3-Dichlorobenzene	170	3.0	1.00	
1,4-Dichlorobenzene	ND	3.0	1.00	
c-1,3-Dichloropropene	ND	2.3	1.00	
c-1,2-Dichloroethene	ND	2.0	1.00	
t-1,2-Dichloroethene	ND	2.0	1.00	
t-1,3-Dichloropropene	ND	4.5	1.00	
Ethanol	220	9.4	1.00	
Ethylbenzene	6.7	2.2	1.00	
4-Ethyltoluene	3.3	2.5	1.00	
Hexachloro-1,3-Butadiene	ND	16	1.00	
2-Hexanone	ND	6.1	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	7.2	1.00	
Methylene Chloride	ND	17	1.00	

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

Analytical Report

Environmental Support Technologies, Inc.
 8 Goodyear, Suite 125
 Irvine, CA 92618-3745

Date Received: 02/16/17
 Work Order: 17-02-1474
 Preparation: N/A
 Method: EPA TO-15
 Units: ug/m3

Project: Former Defense Fuel Depot / EST3043

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
4-Methyl-2-Pentanone	ND	6.1	1.00	
o-Xylene	10	2.2	1.00	
p/m-Xylene	26	8.7	1.00	
Styrene	ND	6.4	1.00	
Tetrachloroethene	ND	3.4	1.00	
Toluene	24	1.9	1.00	
Trichloroethene	ND	2.7	1.00	
Trichlorofluoromethane	ND	5.6	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	11	1.00	
1,1,1-Trichloroethane	ND	2.7	1.00	
1,1,2-Trichloroethane	ND	2.7	1.00	
1,3,5-Trimethylbenzene	3.3	2.5	1.00	
1,1,2,2-Tetrachloroethane	ND	6.9	1.00	
1,2,4-Trimethylbenzene	12	7.4	1.00	
1,2,4-Trichlorobenzene	ND	15	1.00	
Vinyl Acetate	ND	7.0	1.00	
Vinyl Chloride	ND	1.3	1.00	
Isopropanol	31	12	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>	
1,4-Bromofluorobenzene	111	68-134		
1,2-Dichloroethane-d4	109	67-133		
Toluene-d8	100	70-130		

Analytical Report

Environmental Support Technologies, Inc.
 8 Goodyear, Suite 125
 Irvine, CA 92618-3745

Date Received: 02/16/17
 Work Order: 17-02-1474
 Preparation: N/A
 Method: EPA TO-15
 Units: ug/m3

Project: Former Defense Fuel Depot / EST3043

Page 3 of 20

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SVM27-10'	17-02-1474-2-A	02/16/17 09:11	Air	GC/MS AA	N/A	02/20/17 21:38	170220L01

Parameter	Result	RL	DF	Qualifiers
Acetone	62	4.8	1.00	
Benzene	20	1.6	1.00	
Benzyl Chloride	ND	7.8	1.00	
Bromodichloromethane	ND	3.4	1.00	
Bromoform	ND	5.2	1.00	
Bromomethane	ND	1.9	1.00	
2-Butanone	31	4.4	1.00	
Carbon Disulfide	11	6.2	1.00	
Carbon Tetrachloride	ND	3.1	1.00	
Chlorobenzene	ND	2.3	1.00	
Chloroethane	ND	1.3	1.00	
Chloroform	ND	2.4	1.00	
Chloromethane	ND	1.0	1.00	
Dibromochloromethane	ND	4.3	1.00	
Dichlorodifluoromethane	ND	2.5	1.00	
1,1-Dichloroethane	ND	2.0	1.00	
1,1-Dichloroethene	ND	2.0	1.00	
1,2-Dibromoethane	ND	3.8	1.00	
Dichlorotetrafluoroethane	ND	14	1.00	
1,2-Dichlorobenzene	ND	3.0	1.00	
1,2-Dichloroethane	ND	2.0	1.00	
1,2-Dichloropropane	ND	2.3	1.00	
1,3-Dichlorobenzene	210	3.0	1.00	
1,4-Dichlorobenzene	ND	3.0	1.00	
c-1,3-Dichloropropene	ND	2.3	1.00	
c-1,2-Dichloroethene	ND	2.0	1.00	
t-1,2-Dichloroethene	ND	2.0	1.00	
t-1,3-Dichloropropene	ND	4.5	1.00	
Ethanol	110	9.4	1.00	
Ethylbenzene	99	2.2	1.00	
4-Ethyltoluene	46	2.5	1.00	
Hexachloro-1,3-Butadiene	ND	16	1.00	
2-Hexanone	ND	6.1	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	7.2	1.00	
Methylene Chloride	ND	17	1.00	

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

Analytical Report

Environmental Support Technologies, Inc.
8 Goodyear, Suite 125
Irvine, CA 92618-3745

Date Received: 02/16/17
Work Order: 17-02-1474
Preparation: N/A
Method: EPA TO-15
Units: ug/m3

Project: Former Defense Fuel Depot / EST3043

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
4-Methyl-2-Pentanone	ND	6.1	1.00	
o-Xylene	130	2.2	1.00	
p/m-Xylene	370	8.7	1.00	
Styrene	ND	6.4	1.00	
Tetrachloroethene	7.6	3.4	1.00	
Toluene	300	1.9	1.00	
Trichloroethene	ND	2.7	1.00	
Trichlorofluoromethane	ND	5.6	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	11	1.00	
1,1,1-Trichloroethane	ND	2.7	1.00	
1,1,2-Trichloroethane	ND	2.7	1.00	
1,3,5-Trimethylbenzene	42	2.5	1.00	
1,1,2,2-Tetrachloroethane	ND	6.9	1.00	
1,2,4-Trimethylbenzene	120	7.4	1.00	
1,2,4-Trichlorobenzene	ND	15	1.00	
Vinyl Acetate	ND	7.0	1.00	
Vinyl Chloride	ND	1.3	1.00	
Isopropanol	24	12	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>	
1,4-Bromofluorobenzene	103	68-134		
1,2-Dichloroethane-d4	110	67-133		
Toluene-d8	98	70-130		

Analytical Report

Environmental Support Technologies, Inc.
 8 Goodyear, Suite 125
 Irvine, CA 92618-3745

Date Received: 02/16/17
 Work Order: 17-02-1474
 Preparation: N/A
 Method: EPA TO-15
 Units: ug/m3

Project: Former Defense Fuel Depot / EST3043

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SVM26-5'	17-02-1474-3-A	02/16/17 09:51	Air	GC/MS AA	N/A	02/20/17 22:33	170220L01

Parameter	Result	RL	DF	Qualifiers
Acetone	98	4.8	1.00	
Benzene	2.4	1.6	1.00	
Benzyl Chloride	ND	7.8	1.00	
Bromodichloromethane	ND	3.4	1.00	
Bromoform	ND	5.2	1.00	
Bromomethane	ND	1.9	1.00	
2-Butanone	41	4.4	1.00	
Carbon Disulfide	ND	6.2	1.00	
Carbon Tetrachloride	ND	3.1	1.00	
Chlorobenzene	ND	2.3	1.00	
Chloroethane	ND	1.3	1.00	
Chloroform	ND	2.4	1.00	
Chloromethane	ND	1.0	1.00	
Dibromochloromethane	ND	4.3	1.00	
Dichlorodifluoromethane	ND	2.5	1.00	
1,1-Dichloroethane	ND	2.0	1.00	
1,1-Dichloroethene	ND	2.0	1.00	
1,2-Dibromoethane	ND	3.8	1.00	
Dichlorotetrafluoroethane	ND	14	1.00	
1,2-Dichlorobenzene	ND	3.0	1.00	
1,2-Dichloroethane	ND	2.0	1.00	
1,2-Dichloropropane	ND	2.3	1.00	
1,3-Dichlorobenzene	280	3.0	1.00	
1,4-Dichlorobenzene	ND	3.0	1.00	
c-1,3-Dichloropropene	ND	2.3	1.00	
c-1,2-Dichloroethene	ND	2.0	1.00	
t-1,2-Dichloroethene	ND	2.0	1.00	
t-1,3-Dichloropropene	ND	4.5	1.00	
Ethanol	240	9.4	1.00	
Ethylbenzene	9.6	2.2	1.00	
4-Ethyltoluene	6.1	2.5	1.00	
Hexachloro-1,3-Butadiene	ND	16	1.00	
2-Hexanone	ND	6.1	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	7.2	1.00	
Methylene Chloride	ND	17	1.00	

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

Analytical Report

Environmental Support Technologies, Inc.
8 Goodyear, Suite 125
Irvine, CA 92618-3745

Date Received: 02/16/17
Work Order: 17-02-1474
Preparation: N/A
Method: EPA TO-15
Units: ug/m3

Project: Former Defense Fuel Depot / EST3043

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
4-Methyl-2-Pentanone	8.3	6.1	1.00	
o-Xylene	16	2.2	1.00	
p/m-Xylene	41	8.7	1.00	
Styrene	ND	6.4	1.00	
Tetrachloroethene	ND	3.4	1.00	
Toluene	29	1.9	1.00	
Trichloroethene	ND	2.7	1.00	
Trichlorofluoromethane	ND	5.6	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	11	1.00	
1,1,1-Trichloroethane	ND	2.7	1.00	
1,1,2-Trichloroethane	ND	2.7	1.00	
1,3,5-Trimethylbenzene	5.5	2.5	1.00	
1,1,2,2-Tetrachloroethane	ND	6.9	1.00	
1,2,4-Trimethylbenzene	23	7.4	1.00	
1,2,4-Trichlorobenzene	ND	15	1.00	
Vinyl Acetate	ND	7.0	1.00	
Vinyl Chloride	ND	1.3	1.00	
Isopropanol	29	12	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>	
1,4-Bromofluorobenzene	102	68-134		
1,2-Dichloroethane-d4	97	67-133		
Toluene-d8	97	70-130		

Return to Contents

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

Analytical Report

Environmental Support Technologies, Inc.
 8 Goodyear, Suite 125
 Irvine, CA 92618-3745

Date Received: 02/16/17
 Work Order: 17-02-1474
 Preparation: N/A
 Method: EPA TO-15
 Units: ug/m3

Project: Former Defense Fuel Depot / EST3043

Page 7 of 20

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SVM26-10'	17-02-1474-4-A	02/16/17 10:32	Air	GC/MS AA	N/A	02/20/17 23:28	170220L01

Parameter	Result	RL	DF	Qualifiers
Acetone	97	5.2	1.09	
Benzene	63	1.7	1.09	
Benzyl Chloride	ND	8.5	1.09	
Bromodichloromethane	ND	3.7	1.09	
Bromoform	ND	5.6	1.09	
Bromomethane	ND	2.1	1.09	
2-Butanone	38	4.8	1.09	
Carbon Disulfide	20	6.8	1.09	
Carbon Tetrachloride	ND	3.4	1.09	
Chlorobenzene	ND	2.5	1.09	
Chloroethane	ND	1.4	1.09	
Chloroform	ND	2.7	1.09	
Chloromethane	ND	1.1	1.09	
Dibromochloromethane	ND	4.6	1.09	
Dichlorodifluoromethane	ND	2.7	1.09	
1,1-Dichloroethane	ND	2.2	1.09	
1,1-Dichloroethene	ND	2.2	1.09	
1,2-Dibromoethane	ND	4.2	1.09	
Dichlorotetrafluoroethane	ND	15	1.09	
1,2-Dichlorobenzene	ND	3.3	1.09	
1,2-Dichloroethane	ND	2.2	1.09	
1,2-Dichloropropane	ND	2.5	1.09	
1,3-Dichlorobenzene	270	3.3	1.09	
1,4-Dichlorobenzene	ND	3.3	1.09	
c-1,3-Dichloropropene	ND	2.5	1.09	
c-1,2-Dichloroethene	ND	2.2	1.09	
t-1,2-Dichloroethene	ND	2.2	1.09	
t-1,3-Dichloropropene	ND	4.9	1.09	
Ethanol	190	10	1.09	
Ethylbenzene	150	2.4	1.09	
4-Ethyltoluene	57	2.7	1.09	
Hexachloro-1,3-Butadiene	ND	17	1.09	
2-Hexanone	ND	6.7	1.09	
Methyl-t-Butyl Ether (MTBE)	ND	7.9	1.09	
Methylene Chloride	ND	19	1.09	

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

Analytical Report

Environmental Support Technologies, Inc.
 8 Goodyear, Suite 125
 Irvine, CA 92618-3745

Date Received: 02/16/17
 Work Order: 17-02-1474
 Preparation: N/A
 Method: EPA TO-15
 Units: ug/m3

Project: Former Defense Fuel Depot / EST3043

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
4-Methyl-2-Pentanone	11	6.7	1.09	
o-Xylene	200	2.4	1.09	
p/m-Xylene	520	9.5	1.09	
Styrene	ND	7.0	1.09	
Tetrachloroethene	ND	3.7	1.09	
Trichloroethene	ND	2.9	1.09	
Trichlorofluoromethane	ND	6.1	1.09	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	13	1.09	
1,1,1-Trichloroethane	ND	3.0	1.09	
1,1,2-Trichloroethane	ND	3.0	1.09	
1,3,5-Trimethylbenzene	50	2.7	1.09	
1,1,2,2-Tetrachloroethane	ND	7.5	1.09	
1,2,4-Trimethylbenzene	150	8.0	1.09	
1,2,4-Trichlorobenzene	ND	16	1.09	
Vinyl Acetate	ND	7.7	1.09	
Vinyl Chloride	ND	1.4	1.09	
Isopropanol	26	13	1.09	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	102	68-134	
1,2-Dichloroethane-d4	97	67-133	
Toluene-d8	95	70-130	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SVM26-10'	17-02-1474-4-A	02/16/17 10:32	Air	GC/MS AA	N/A	02/18/17 23:25	170218L01

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Toluene	640	19	10.0	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	102	68-134	
1,2-Dichloroethane-d4	106	67-133	
Toluene-d8	94	70-130	

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

Analytical Report

Environmental Support Technologies, Inc.
 8 Goodyear, Suite 125
 Irvine, CA 92618-3745

Date Received: 02/16/17
 Work Order: 17-02-1474
 Preparation: N/A
 Method: EPA TO-15
 Units: ug/m3

Project: Former Defense Fuel Depot / EST3043

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SVM25-5'	17-02-1474-5-A	02/16/17 11:06	Air	GC/MS AA	N/A	02/21/17 00:24	170220L01

Parameter	Result	RL	DF	Qualifiers
Acetone	84	5.2	1.09	
Benzene	15	1.7	1.09	
Benzyl Chloride	ND	8.5	1.09	
Bromodichloromethane	ND	3.7	1.09	
Bromoform	ND	5.6	1.09	
Bromomethane	ND	2.1	1.09	
2-Butanone	31	4.8	1.09	
Carbon Disulfide	ND	6.8	1.09	
Carbon Tetrachloride	ND	3.4	1.09	
Chlorobenzene	ND	2.5	1.09	
Chloroethane	ND	1.4	1.09	
Chloroform	ND	2.7	1.09	
Chloromethane	ND	1.1	1.09	
Dibromochloromethane	ND	4.6	1.09	
Dichlorodifluoromethane	ND	2.7	1.09	
1,1-Dichloroethane	ND	2.2	1.09	
1,1-Dichloroethene	ND	2.2	1.09	
1,2-Dibromoethane	ND	4.2	1.09	
Dichlorotetrafluoroethane	ND	15	1.09	
1,2-Dichlorobenzene	ND	3.3	1.09	
1,2-Dichloroethane	ND	2.2	1.09	
1,2-Dichloropropane	ND	2.5	1.09	
1,3-Dichlorobenzene	230	3.3	1.09	
1,4-Dichlorobenzene	ND	3.3	1.09	
c-1,3-Dichloropropene	ND	2.5	1.09	
c-1,2-Dichloroethene	ND	2.2	1.09	
t-1,2-Dichloroethene	ND	2.2	1.09	
t-1,3-Dichloropropene	ND	4.9	1.09	
Ethanol	190	10	1.09	
Ethylbenzene	71	2.4	1.09	
4-Ethyltoluene	42	2.7	1.09	
Hexachloro-1,3-Butadiene	ND	17	1.09	
2-Hexanone	ND	6.7	1.09	
Methyl-t-Butyl Ether (MTBE)	ND	7.9	1.09	
Methylene Chloride	ND	19	1.09	

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

Analytical Report

Environmental Support Technologies, Inc.
 8 Goodyear, Suite 125
 Irvine, CA 92618-3745

Date Received: 02/16/17
 Work Order: 17-02-1474
 Preparation: N/A
 Method: EPA TO-15
 Units: ug/m3

Project: Former Defense Fuel Depot / EST3043

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
4-Methyl-2-Pentanone	10	6.7	1.09	
o-Xylene	90	2.4	1.09	
p/m-Xylene	270	9.5	1.09	
Styrene	ND	7.0	1.09	
Tetrachloroethene	ND	3.7	1.09	
Toluene	220	2.1	1.09	
Trichloroethene	3.9	2.9	1.09	
Trichlorofluoromethane	ND	6.1	1.09	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	13	1.09	
1,1,1-Trichloroethane	ND	3.0	1.09	
1,1,2-Trichloroethane	ND	3.0	1.09	
1,3,5-Trimethylbenzene	40	2.7	1.09	
1,1,2,2-Tetrachloroethane	ND	7.5	1.09	
1,2,4-Trimethylbenzene	120	8.0	1.09	
1,2,4-Trichlorobenzene	ND	16	1.09	
Vinyl Acetate	ND	7.7	1.09	
Vinyl Chloride	ND	1.4	1.09	
Isopropanol	23	13	1.09	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>	
1,4-Bromofluorobenzene	103	68-134		
1,2-Dichloroethane-d4	97	67-133		
Toluene-d8	99	70-130		

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

Analytical Report

Environmental Support Technologies, Inc.
 8 Goodyear, Suite 125
 Irvine, CA 92618-3745

Date Received: 02/16/17
 Work Order: 17-02-1474
 Preparation: N/A
 Method: EPA TO-15
 Units: ug/m3

Project: Former Defense Fuel Depot / EST3043

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SVM25-10'	17-02-1474-6-A	02/16/17 11:27	Air	GC/MS AA	N/A	02/21/17 01:18	170220L01

Parameter	Result	RL	DF	Qualifiers
Acetone	110	5.0	1.06	
Benzene	20	1.7	1.06	
Benzyl Chloride	ND	8.2	1.06	
Bromodichloromethane	ND	3.6	1.06	
Bromoform	ND	5.5	1.06	
Bromomethane	ND	2.1	1.06	
2-Butanone	48	4.7	1.06	
Carbon Disulfide	9.5	6.6	1.06	
Carbon Tetrachloride	ND	3.3	1.06	
Chlorobenzene	ND	2.4	1.06	
Chloroethane	ND	1.4	1.06	
Chloroform	ND	2.6	1.06	
Chloromethane	ND	1.1	1.06	
Dibromochloromethane	ND	4.5	1.06	
Dichlorodifluoromethane	ND	2.6	1.06	
1,1-Dichloroethane	ND	2.1	1.06	
1,1-Dichloroethene	ND	2.1	1.06	
1,2-Dibromoethane	ND	4.1	1.06	
Dichlorotetrafluoroethane	ND	15	1.06	
1,2-Dichlorobenzene	ND	3.2	1.06	
1,2-Dichloroethane	ND	2.1	1.06	
1,2-Dichloropropane	ND	2.4	1.06	
1,3-Dichlorobenzene	210	3.2	1.06	
1,4-Dichlorobenzene	ND	3.2	1.06	
c-1,3-Dichloropropene	ND	2.4	1.06	
c-1,2-Dichloroethene	ND	2.1	1.06	
t-1,2-Dichloroethene	ND	2.1	1.06	
t-1,3-Dichloropropene	ND	4.8	1.06	
Ethanol	160	10	1.06	
Ethylbenzene	120	2.3	1.06	
4-Ethyltoluene	73	2.6	1.06	
Hexachloro-1,3-Butadiene	ND	17	1.06	
2-Hexanone	ND	6.5	1.06	
Methyl-t-Butyl Ether (MTBE)	ND	7.6	1.06	
Methylene Chloride	ND	18	1.06	

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

Analytical Report

Environmental Support Technologies, Inc.
8 Goodyear, Suite 125
Irvine, CA 92618-3745

Date Received: 02/16/17
Work Order: 17-02-1474
Preparation: N/A
Method: EPA TO-15
Units: ug/m3

Project: Former Defense Fuel Depot / EST3043

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
4-Methyl-2-Pentanone	18	6.5	1.06	
o-Xylene	160	2.3	1.06	
p/m-Xylene	440	9.2	1.06	
Styrene	ND	6.8	1.06	
Tetrachloroethene	ND	3.6	1.06	
Toluene	350	2.0	1.06	
Trichloroethene	ND	2.8	1.06	
Trichlorofluoromethane	ND	6.0	1.06	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	12	1.06	
1,1,1-Trichloroethane	ND	2.9	1.06	
1,1,2-Trichloroethane	ND	2.9	1.06	
1,3,5-Trimethylbenzene	72	2.6	1.06	
1,1,2,2-Tetrachloroethane	ND	7.3	1.06	
1,2,4-Trimethylbenzene	220	7.8	1.06	
1,2,4-Trichlorobenzene	ND	16	1.06	
Vinyl Acetate	ND	7.5	1.06	
Vinyl Chloride	ND	1.4	1.06	
Isopropanol	25	13	1.06	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>	
1,4-Bromofluorobenzene	102	68-134		
1,2-Dichloroethane-d4	97	67-133		
Toluene-d8	98	70-130		

Return to Contents

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

Analytical Report

Environmental Support Technologies, Inc.
 8 Goodyear, Suite 125
 Irvine, CA 92618-3745

Date Received: 02/16/17
 Work Order: 17-02-1474
 Preparation: N/A
 Method: EPA TO-15
 Units: ug/m3

Project: Former Defense Fuel Depot / EST3043

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SVM25-10' Dup	17-02-1474-7-A	02/16/17 11:36	Air	GC/MS AA	N/A	02/21/17 02:14	170220L01

Parameter	Result	RL	DF	Qualifiers
Acetone	120	4.8	1.02	
Benzene	21	1.6	1.02	
Benzyl Chloride	ND	7.9	1.02	
Bromodichloromethane	ND	3.4	1.02	
Bromoform	ND	5.3	1.02	
Bromomethane	ND	2.0	1.02	
2-Butanone	53	4.5	1.02	
Carbon Disulfide	7.4	6.4	1.02	
Carbon Tetrachloride	ND	3.2	1.02	
Chlorobenzene	ND	2.3	1.02	
Chloroethane	ND	1.3	1.02	
Chloroform	ND	2.5	1.02	
Chloromethane	ND	1.1	1.02	
Dibromochloromethane	ND	4.3	1.02	
Dichlorodifluoromethane	ND	2.5	1.02	
1,1-Dichloroethane	ND	2.1	1.02	
1,1-Dichloroethene	ND	2.0	1.02	
1,2-Dibromoethane	ND	3.9	1.02	
Dichlorotetrafluoroethane	ND	14	1.02	
1,2-Dichlorobenzene	ND	3.1	1.02	
1,2-Dichloroethane	ND	2.1	1.02	
1,2-Dichloropropane	ND	2.4	1.02	
1,3-Dichlorobenzene	250	3.1	1.02	
1,4-Dichlorobenzene	ND	3.1	1.02	
c-1,3-Dichloropropene	ND	2.3	1.02	
c-1,2-Dichloroethene	ND	2.0	1.02	
t-1,2-Dichloroethene	ND	2.0	1.02	
t-1,3-Dichloropropene	ND	4.6	1.02	
Ethanol	160	9.6	1.02	
Ethylbenzene	140	2.2	1.02	
4-Ethyltoluene	85	2.5	1.02	
Hexachloro-1,3-Butadiene	ND	16	1.02	
2-Hexanone	ND	6.3	1.02	
Methyl-t-Butyl Ether (MTBE)	ND	7.4	1.02	
Methylene Chloride	ND	18	1.02	

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

Analytical Report

Environmental Support Technologies, Inc.
8 Goodyear, Suite 125
Irvine, CA 92618-3745

Date Received: 02/16/17
Work Order: 17-02-1474
Preparation: N/A
Method: EPA TO-15
Units: ug/m3

Project: Former Defense Fuel Depot / EST3043

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
4-Methyl-2-Pentanone	19	6.3	1.02	
o-Xylene	190	2.2	1.02	
p/m-Xylene	510	8.9	1.02	
Styrene	ND	6.5	1.02	
Tetrachloroethene	ND	3.5	1.02	
Toluene	370	1.9	1.02	
Trichloroethene	ND	2.7	1.02	
Trichlorofluoromethane	ND	5.7	1.02	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	12	1.02	
1,1,1-Trichloroethane	ND	2.8	1.02	
1,1,2-Trichloroethane	ND	2.8	1.02	
1,3,5-Trimethylbenzene	79	2.5	1.02	
1,1,2,2-Tetrachloroethane	ND	7.0	1.02	
1,2,4-Trimethylbenzene	270	7.5	1.02	
1,2,4-Trichlorobenzene	ND	15	1.02	
Vinyl Acetate	ND	7.2	1.02	
Vinyl Chloride	ND	1.3	1.02	
Isopropanol	22	13	1.02	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>	
1,4-Bromofluorobenzene	98	68-134		
1,2-Dichloroethane-d4	94	67-133		
Toluene-d8	97	70-130		

Return to Contents

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

Analytical Report

Environmental Support Technologies, Inc.
 8 Goodyear, Suite 125
 Irvine, CA 92618-3745

Date Received: 02/16/17
 Work Order: 17-02-1474
 Preparation: N/A
 Method: EPA TO-15
 Units: ug/m3

Project: Former Defense Fuel Depot / EST3043

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SVM24-5'	17-02-1474-8-A	02/16/17 12:06	Air	GC/MS AA	N/A	02/21/17 03:10	170220L01

Parameter	Result	RL	DF	Qualifiers
Acetone	32	4.8	1.00	
Benzene	2.5	1.6	1.00	
Benzyl Chloride	ND	7.8	1.00	
Bromodichloromethane	ND	3.4	1.00	
Bromoform	ND	5.2	1.00	
Bromomethane	ND	1.9	1.00	
2-Butanone	5.9	4.4	1.00	
Carbon Disulfide	ND	6.2	1.00	
Carbon Tetrachloride	ND	3.1	1.00	
Chlorobenzene	ND	2.3	1.00	
Chloroethane	ND	1.3	1.00	
Chloroform	ND	2.4	1.00	
Chloromethane	ND	1.0	1.00	
Dibromochloromethane	ND	4.3	1.00	
Dichlorodifluoromethane	ND	2.5	1.00	
1,1-Dichloroethane	ND	2.0	1.00	
1,1-Dichloroethene	ND	2.0	1.00	
1,2-Dibromoethane	ND	3.8	1.00	
Dichlorotetrafluoroethane	ND	14	1.00	
1,2-Dichlorobenzene	ND	3.0	1.00	
1,2-Dichloroethane	ND	2.0	1.00	
1,2-Dichloropropane	ND	2.3	1.00	
1,3-Dichlorobenzene	320	3.0	1.00	
1,4-Dichlorobenzene	ND	3.0	1.00	
c-1,3-Dichloropropene	ND	2.3	1.00	
c-1,2-Dichloroethene	ND	2.0	1.00	
t-1,2-Dichloroethene	ND	2.0	1.00	
t-1,3-Dichloropropene	ND	4.5	1.00	
Ethanol	170	9.4	1.00	
Ethylbenzene	8.9	2.2	1.00	
4-Ethyltoluene	4.0	2.5	1.00	
Hexachloro-1,3-Butadiene	ND	16	1.00	
2-Hexanone	ND	6.1	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	7.2	1.00	
Methylene Chloride	ND	17	1.00	

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

Analytical Report

Environmental Support Technologies, Inc.
8 Goodyear, Suite 125
Irvine, CA 92618-3745

Date Received: 02/16/17
Work Order: 17-02-1474
Preparation: N/A
Method: EPA TO-15
Units: ug/m3

Project: Former Defense Fuel Depot / EST3043

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
4-Methyl-2-Pentanone	ND	6.1	1.00	
o-Xylene	13	2.2	1.00	
p/m-Xylene	35	8.7	1.00	
Styrene	ND	6.4	1.00	
Tetrachloroethene	7.3	3.4	1.00	
Toluene	28	1.9	1.00	
Trichloroethene	ND	2.7	1.00	
Trichlorofluoromethane	ND	5.6	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	11	1.00	
1,1,1-Trichloroethane	ND	2.7	1.00	
1,1,2-Trichloroethane	ND	2.7	1.00	
1,3,5-Trimethylbenzene	4.1	2.5	1.00	
1,1,2,2-Tetrachloroethane	ND	6.9	1.00	
1,2,4-Trimethylbenzene	15	7.4	1.00	
1,2,4-Trichlorobenzene	ND	15	1.00	
Vinyl Acetate	ND	7.0	1.00	
Vinyl Chloride	ND	1.3	1.00	
Isopropanol	23	12	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>	
1,4-Bromofluorobenzene	101	68-134		
1,2-Dichloroethane-d4	96	67-133		
Toluene-d8	97	70-130		

Return to Contents

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

Analytical Report

Environmental Support Technologies, Inc.
 8 Goodyear, Suite 125
 Irvine, CA 92618-3745

Date Received: 02/16/17
 Work Order: 17-02-1474
 Preparation: N/A
 Method: EPA TO-15
 Units: ug/m3

Project: Former Defense Fuel Depot / EST3043

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SVM24-10'	17-02-1474-9-A	02/16/17 12:27	Air	GC/MS AA	N/A	02/21/17 04:06	170220L01

Parameter	Result	RL	DF	Qualifiers
Acetone	37	5.5	1.16	
Benzene	25	1.9	1.16	
Benzyl Chloride	ND	9.0	1.16	
Bromodichloromethane	ND	3.9	1.16	
Bromoform	ND	6.0	1.16	
Bromomethane	ND	2.3	1.16	
2-Butanone	9.9	5.1	1.16	
Carbon Disulfide	ND	7.2	1.16	
Carbon Tetrachloride	ND	3.6	1.16	
Chlorobenzene	ND	2.7	1.16	
Chloroethane	ND	1.5	1.16	
Chloroform	ND	2.8	1.16	
Chloromethane	ND	1.2	1.16	
Dibromochloromethane	ND	4.9	1.16	
Dichlorodifluoromethane	ND	2.9	1.16	
1,1-Dichloroethane	ND	2.3	1.16	
1,1-Dichloroethene	ND	2.3	1.16	
1,2-Dibromoethane	ND	4.5	1.16	
Dichlorotetrafluoroethane	ND	16	1.16	
1,2-Dichlorobenzene	ND	3.5	1.16	
1,2-Dichloroethane	ND	2.3	1.16	
1,2-Dichloropropane	ND	2.7	1.16	
1,3-Dichlorobenzene	210	3.5	1.16	
1,4-Dichlorobenzene	ND	3.5	1.16	
c-1,3-Dichloropropene	ND	2.6	1.16	
c-1,2-Dichloroethene	ND	2.3	1.16	
t-1,2-Dichloroethene	ND	2.3	1.16	
t-1,3-Dichloropropene	ND	5.3	1.16	
Ethanol	140	11	1.16	
Ethylbenzene	90	2.5	1.16	
4-Ethyltoluene	24	2.9	1.16	
Hexachloro-1,3-Butadiene	ND	19	1.16	
2-Hexanone	ND	7.1	1.16	
Methyl-t-Butyl Ether (MTBE)	ND	8.4	1.16	
Methylene Chloride	ND	20	1.16	

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

Analytical Report

Environmental Support Technologies, Inc.
 8 Goodyear, Suite 125
 Irvine, CA 92618-3745

Date Received: 02/16/17
 Work Order: 17-02-1474
 Preparation: N/A
 Method: EPA TO-15
 Units: ug/m3

Project: Former Defense Fuel Depot / EST3043

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
4-Methyl-2-Pentanone	ND	7.1	1.16	
o-Xylene	91	2.5	1.16	
p/m-Xylene	300	10	1.16	
Styrene	ND	7.4	1.16	
Tetrachloroethene	10	3.9	1.16	
Toluene	390	2.2	1.16	
Trichloroethene	ND	3.1	1.16	
Trichlorofluoromethane	ND	6.5	1.16	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	13	1.16	
1,1,1-Trichloroethane	ND	3.2	1.16	
1,1,2-Trichloroethane	ND	3.2	1.16	
1,3,5-Trimethylbenzene	24	2.9	1.16	
1,1,1,2-Tetrachloroethane	ND	8.0	1.16	
1,2,4-Trimethylbenzene	58	8.6	1.16	
1,2,4-Trichlorobenzene	ND	17	1.16	
Vinyl Acetate	ND	8.2	1.16	
Vinyl Chloride	ND	1.5	1.16	
Isopropanol	20	14	1.16	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>	
1,4-Bromofluorobenzene	97	68-134		
1,2-Dichloroethane-d4	94	67-133		
Toluene-d8	97	70-130		

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	095-01-021-18138	N/A	Air	GC/MS AA	N/A	02/18/17 14:31	170218L01

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Toluene	ND	1.9	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>	
1,4-Bromofluorobenzene	100	68-134		
1,2-Dichloroethane-d4	103	67-133		
Toluene-d8	98	70-130		

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

Analytical Report

Environmental Support Technologies, Inc.
 8 Goodyear, Suite 125
 Irvine, CA 92618-3745

Date Received: 02/16/17
 Work Order: 17-02-1474
 Preparation: N/A
 Method: EPA TO-15
 Units: ug/m3

Project: Former Defense Fuel Depot / EST3043

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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	095-01-021-18144	N/A	Air	GC/MS AA	N/A	02/20/17 15:48	170220L01

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	4.8	1.00	
Benzene	ND	1.6	1.00	
Benzyl Chloride	ND	7.8	1.00	
Bromodichloromethane	ND	3.4	1.00	
Bromoform	ND	5.2	1.00	
Bromomethane	ND	1.9	1.00	
2-Butanone	ND	4.4	1.00	
Carbon Disulfide	ND	6.2	1.00	
Carbon Tetrachloride	ND	3.1	1.00	
Chlorobenzene	ND	2.3	1.00	
Chloroethane	ND	1.3	1.00	
Chloroform	ND	2.4	1.00	
Chloromethane	ND	1.0	1.00	
Dibromochloromethane	ND	4.3	1.00	
Dichlorodifluoromethane	ND	2.5	1.00	
1,1-Dichloroethane	ND	2.0	1.00	
1,1-Dichloroethene	ND	2.0	1.00	
1,2-Dibromoethane	ND	3.8	1.00	
Dichlorotetrafluoroethane	ND	14	1.00	
1,2-Dichlorobenzene	ND	3.0	1.00	
1,2-Dichloroethane	ND	2.0	1.00	
1,2-Dichloropropane	ND	2.3	1.00	
1,3-Dichlorobenzene	ND	3.0	1.00	
1,4-Dichlorobenzene	ND	3.0	1.00	
c-1,3-Dichloropropene	ND	2.3	1.00	
c-1,2-Dichloroethene	ND	2.0	1.00	
t-1,2-Dichloroethene	ND	2.0	1.00	
t-1,3-Dichloropropene	ND	4.5	1.00	
Ethanol	ND	9.4	1.00	
Ethylbenzene	ND	2.2	1.00	
4-Ethyltoluene	ND	2.5	1.00	
Hexachloro-1,3-Butadiene	ND	16	1.00	
2-Hexanone	ND	6.1	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	7.2	1.00	
Methylene Chloride	ND	17	1.00	

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

Analytical Report

Environmental Support Technologies, Inc.
 8 Goodyear, Suite 125
 Irvine, CA 92618-3745

Date Received: 02/16/17
 Work Order: 17-02-1474
 Preparation: N/A
 Method: EPA TO-15
 Units: ug/m3

Project: Former Defense Fuel Depot / EST3043

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
4-Methyl-2-Pentanone	ND	6.1	1.00	
o-Xylene	ND	2.2	1.00	
p/m-Xylene	ND	8.7	1.00	
Styrene	ND	6.4	1.00	
Tetrachloroethene	ND	3.4	1.00	
Toluene	ND	1.9	1.00	
Trichloroethene	ND	2.7	1.00	
Trichlorofluoromethane	ND	5.6	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	11	1.00	
1,1,1-Trichloroethane	ND	2.7	1.00	
1,1,2-Trichloroethane	ND	2.7	1.00	
1,3,5-Trimethylbenzene	ND	2.5	1.00	
1,1,2,2-Tetrachloroethane	ND	6.9	1.00	
1,2,4-Trimethylbenzene	ND	7.4	1.00	
1,2,4-Trichlorobenzene	ND	15	1.00	
Vinyl Acetate	ND	7.0	1.00	
Vinyl Chloride	ND	1.3	1.00	
Isopropanol	ND	12	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>	
1,4-Bromofluorobenzene	95	68-134		
1,2-Dichloroethane-d4	103	67-133		
Toluene-d8	97	70-130		

Return to Contents

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



Calscience

Quality Control - LCS/LCSD

Environmental Support Technologies, Inc.
8 Goodyear, Suite 125
Irvine, CA 92618-3745

Date Received: 02/16/17
Work Order: 17-02-1474
Preparation: N/A
Method: EPA TO-15

Project: Former Defense Fuel Depot / EST3043

Page 1 of 4

Quality Control Sample ID	Type	Matrix		Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
095-01-021-18138	LCS	Air		GC/MS AA	N/A	02/18/17 12:00	170218L01			
095-01-021-18138	LCSD	Air		GC/MS AA	N/A	02/18/17 12:48	170218L01			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Acetone	59.39	63.80	107	61.69	104	67-133	56-144	3	0-30	
Benzene	79.87	76.94	96	77.16	97	70-130	60-140	0	0-30	
Benzyl Chloride	129.4	146.9	114	150.3	116	38-158	18-178	2	0-30	
Bromodichloromethane	167.5	169.4	101	164.9	98	70-130	60-140	3	0-30	
Bromoform	258.4	271.7	105	276.5	107	63-147	49-161	2	0-30	
Bromomethane	97.08	88.90	92	86.92	90	70-139	58-150	2	0-30	
2-Butanone	73.73	80.00	109	75.31	102	66-132	55-143	6	0-30	
Carbon Disulfide	77.85	70.23	90	71.16	91	68-146	55-159	1	0-30	
Carbon Tetrachloride	157.3	161.4	103	156.0	99	70-136	59-147	3	0-30	
Chlorobenzene	115.1	115.6	100	121.5	106	70-130	60-140	5	0-30	
Chloroethane	65.96	60.73	92	61.81	94	65-149	51-163	2	0-30	
Chloroform	122.1	119.4	98	117.1	96	70-130	60-140	2	0-30	
Chloromethane	51.63	51.09	99	49.76	96	69-141	57-153	3	0-30	
Dibromochloromethane	213.0	221.9	104	225.5	106	70-138	59-149	2	0-30	
Dichlorodifluoromethane	123.6	116.7	94	113.0	91	67-139	55-151	3	0-30	
1,1-Dichloroethane	101.2	98.84	98	95.22	94	70-130	60-140	4	0-30	
1,1-Dichloroethene	99.12	98.56	99	99.05	100	70-135	59-146	0	0-30	
1,2-Dibromoethane	192.1	207.5	108	212.0	110	70-133	60-144	2	0-30	
Dichlorotetrafluoroethane	174.8	165.1	94	160.3	92	51-135	37-149	3	0-30	
1,2-Dichlorobenzene	150.3	163.6	109	165.7	110	48-138	33-153	1	0-30	
1,2-Dichloroethane	101.2	103.8	103	101.7	100	70-132	60-142	2	0-30	
1,2-Dichloropropane	115.5	111.2	96	110.4	96	70-130	60-140	1	0-30	
1,3-Dichlorobenzene	150.3	159.3	106	163.1	109	56-134	43-147	2	0-30	
1,4-Dichlorobenzene	150.3	161.0	107	162.4	108	52-136	38-150	1	0-30	
c-1,3-Dichloropropene	113.5	122.8	108	120.0	106	70-130	60-140	2	0-30	
c-1,2-Dichloroethene	99.12	99.07	100	97.40	98	70-130	60-140	2	0-30	
t-1,2-Dichloroethene	99.12	94.52	95	95.40	96	70-130	60-140	1	0-30	
t-1,3-Dichloropropene	113.5	124.4	110	125.6	111	70-147	57-160	1	0-30	
Ethanol	188.4	198.9	106	190.1	101	37-139	20-156	5	0-30	
Ethylbenzene	108.6	112.0	103	113.7	105	70-130	60-140	2	0-30	
4-Ethyltoluene	122.9	131.6	107	124.6	101	68-130	58-140	5	0-30	
Hexachloro-1,3-Butadiene	266.6	243.0	91	251.6	94	44-146	27-163	3	0-30	
2-Hexanone	102.4	114.5	112	117.7	115	70-136	59-147	3	0-30	
Methyl-t-Butyl Ether (MTBE)	90.13	88.11	98	85.86	95	68-130	58-140	3	0-30	
Methylene Chloride	86.84	84.73	98	83.31	96	69-130	59-140	2	0-30	
4-Methyl-2-Pentanone	102.4	103.1	101	105.3	103	70-130	60-140	2	0-30	

RPD: Relative Percent Difference. CL: Control Limits

Quality Control - LCS/LCSD

Environmental Support Technologies, Inc.
8 Goodyear, Suite 125
Irvine, CA 92618-3745

Date Received: 02/16/17
Work Order: 17-02-1474
Preparation: N/A
Method: EPA TO-15

Project: Former Defense Fuel Depot / EST3043

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<u>Parameter</u>	<u>Spike Added</u>	<u>LCS Conc.</u>	<u>LCS %Rec.</u>	<u>LCSD Conc.</u>	<u>LCSD %Rec.</u>	<u>%Rec. CL</u>	<u>ME CL</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
o-Xylene	108.6	107.1	99	108.5	100	69-130	59-140	1	0-30	
p/m-Xylene	217.1	218.4	101	218.3	101	70-132	60-142	0	0-30	
Styrene	106.5	115.8	109	114.5	107	65-131	54-142	1	0-30	
Tetrachloroethene	169.6	167.6	99	166.9	98	70-130	60-140	0	0-30	
Toluene	94.21	93.37	99	94.02	100	70-130	60-140	1	0-30	
Trichloroethene	134.3	136.5	102	135.2	101	70-130	60-140	1	0-30	
Trichlorofluoromethane	140.5	140.6	100	135.5	96	63-141	50-154	4	0-30	
1,1,2-Trichloro-1,2,2-Trifluoroethane	191.6	184.5	96	183.7	96	70-136	59-147	0	0-30	
1,1,1-Trichloroethane	136.4	143.1	105	134.7	99	70-130	60-140	6	0-30	
1,1,2-Trichloroethane	136.4	137.7	101	134.1	98	70-130	60-140	3	0-30	
1,3,5-Trimethylbenzene	122.9	128.2	104	126.2	103	62-130	51-141	2	0-30	
1,1,2,2-Tetrachloroethane	171.6	183.2	107	186.8	109	63-130	52-141	2	0-30	
1,2,4-Trimethylbenzene	122.9	129.0	105	131.0	107	60-132	48-144	2	0-30	
1,2,4-Trichlorobenzene	185.5	165.2	89	170.7	92	31-151	11-171	3	0-30	
Vinyl Acetate	88.03	91.62	104	88.05	100	58-130	46-142	4	0-30	
Vinyl Chloride	63.91	60.68	95	60.64	95	70-134	59-145	0	0-30	
Isopropanol	61.45	64.96	106	63.12	103	57-135	44-148	3	0-30	

Total number of LCS compounds: 53

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

Environmental Support Technologies, Inc.
8 Goodyear, Suite 125
Irvine, CA 92618-3745

Date Received: 02/16/17
Work Order: 17-02-1474
Preparation: N/A
Method: EPA TO-15

Project: Former Defense Fuel Depot / EST3043

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number				
095-01-021-18144	LCS	Air	GC/MS AA	N/A	02/20/17 13:05	170220L01				
095-01-021-18144	LCSD	Air	GC/MS AA	N/A	02/20/17 13:59	170220L01				
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Acetone	59.39	61.62	104	58.02	98	67-133	56-144	6	0-30	
Benzene	79.87	77.71	97	78.06	98	70-130	60-140	0	0-30	
Benzyl Chloride	129.4	141.4	109	143.7	111	38-158	18-178	2	0-30	
Bromodichloromethane	167.5	163.5	98	167.0	100	70-130	60-140	2	0-30	
Bromoform	258.4	273.9	106	275.6	107	63-147	49-161	1	0-30	
Bromomethane	97.08	85.77	88	84.00	87	70-139	58-150	2	0-30	
2-Butanone	73.73	72.65	99	75.19	102	66-132	55-143	3	0-30	
Carbon Disulfide	77.85	69.51	89	65.84	85	68-146	55-159	5	0-30	
Carbon Tetrachloride	157.3	155.5	99	157.4	100	70-136	59-147	1	0-30	
Chlorobenzene	115.1	122.7	107	119.7	104	70-130	60-140	2	0-30	
Chloroethane	65.96	61.38	93	58.83	89	65-149	51-163	4	0-30	
Chloroform	122.1	111.7	92	113.6	93	70-130	60-140	2	0-30	
Chloromethane	51.63	49.34	96	47.36	92	69-141	57-153	4	0-30	
Dibromochloromethane	213.0	223.0	105	219.9	103	70-138	59-149	1	0-30	
Dichlorodifluoromethane	123.6	103.1	83	111.3	90	67-139	55-151	8	0-30	
1,1-Dichloroethane	101.2	95.04	94	95.00	94	70-130	60-140	0	0-30	
1,1-Dichloroethene	99.12	95.67	97	94.88	96	70-135	59-146	1	0-30	
1,2-Dibromoethane	192.1	207.0	108	205.3	107	70-133	60-144	1	0-30	
Dichlorotetrafluoroethane	174.8	158.5	91	156.3	89	51-135	37-149	1	0-30	
1,2-Dichlorobenzene	150.3	160.6	107	161.6	107	48-138	33-153	1	0-30	
1,2-Dichloroethane	101.2	98.03	97	99.46	98	70-132	60-142	1	0-30	
1,2-Dichloropropane	115.5	109.4	95	114.7	99	70-130	60-140	5	0-30	
1,3-Dichlorobenzene	150.3	158.8	106	164.5	109	56-134	43-147	3	0-30	
1,4-Dichlorobenzene	150.3	162.5	108	164.4	109	52-136	38-150	1	0-30	
c-1,3-Dichloropropene	113.5	118.6	104	120.8	106	70-130	60-140	2	0-30	
c-1,2-Dichloroethene	99.12	97.32	98	96.75	98	70-130	60-140	1	0-30	
t-1,2-Dichloroethene	99.12	94.61	95	97.24	98	70-130	60-140	3	0-30	
t-1,3-Dichloropropene	113.5	121.4	107	119.9	106	70-147	57-160	1	0-30	
Ethanol	188.4	180.8	96	174.7	93	37-139	20-156	3	0-30	
Ethylbenzene	108.6	111.7	103	116.6	107	70-130	60-140	4	0-30	
4-Ethyltoluene	122.9	129.9	106	134.1	109	68-130	58-140	3	0-30	
Hexachloro-1,3-Butadiene	266.6	254.1	95	251.8	94	44-146	27-163	1	0-30	
2-Hexanone	102.4	115.8	113	114.1	111	70-136	59-147	1	0-30	
Methyl-t-Butyl Ether (MTBE)	90.13	86.56	96	86.63	96	68-130	58-140	0	0-30	
Methylene Chloride	86.84	82.78	95	82.34	95	69-130	59-140	1	0-30	
4-Methyl-2-Pentanone	102.4	103.9	101	106.1	104	70-130	60-140	2	0-30	

RPD: Relative Percent Difference. CL: Control Limits

Quality Control - LCS/LCSD

Environmental Support Technologies, Inc.
 8 Goodyear, Suite 125
 Irvine, CA 92618-3745

Date Received: 02/16/17
 Work Order: 17-02-1474
 Preparation: N/A
 Method: EPA TO-15

Project: Former Defense Fuel Depot / EST3043

Page 4 of 4

<u>Parameter</u>	<u>Spike Added</u>	<u>LCS Conc.</u>	<u>LCS %Rec.</u>	<u>LCSD Conc.</u>	<u>LCSD %Rec.</u>	<u>%Rec. CL</u>	<u>ME CL</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
o-Xylene	108.6	106.1	98	108.4	100	69-130	59-140	2	0-30	
p/m-Xylene	217.1	214.3	99	218.2	100	70-132	60-142	2	0-30	
Styrene	106.5	118.5	111	115.1	108	65-131	54-142	3	0-30	
Tetrachloroethene	169.6	172.5	102	172.8	102	70-130	60-140	0	0-30	
Toluene	94.21	94.70	101	92.20	98	70-130	60-140	3	0-30	
Trichloroethene	134.3	133.2	99	134.1	100	70-130	60-140	1	0-30	
Trichlorofluoromethane	140.5	129.7	92	121.6	87	63-141	50-154	6	0-30	
1,1,2-Trichloro-1,2,2-Trifluoroethane	191.6	178.5	93	164.7	86	70-136	59-147	8	0-30	
1,1,1-Trichloroethane	136.4	130.8	96	134.9	99	70-130	60-140	3	0-30	
1,1,2-Trichloroethane	136.4	134.0	98	133.7	98	70-130	60-140	0	0-30	
1,3,5-Trimethylbenzene	122.9	123.4	100	132.4	108	62-130	51-141	7	0-30	
1,1,2,2-Tetrachloroethane	171.6	181.7	106	182.3	106	63-130	52-141	0	0-30	
1,2,4-Trimethylbenzene	122.9	129.9	106	129.0	105	60-132	48-144	1	0-30	
1,2,4-Trichlorobenzene	185.5	170.3	92	161.4	87	31-151	11-171	5	0-30	
Vinyl Acetate	88.03	83.50	95	83.00	94	58-130	46-142	1	0-30	
Vinyl Chloride	63.91	59.77	94	59.74	93	70-134	59-145	0	0-30	
Isopropanol	61.45	60.72	99	57.75	94	57-135	44-148	5	0-30	

Total number of LCS compounds: 53

Total number of ME compounds: 0

Total number of ME compounds allowed: 3

LCS ME CL validation result: Pass

Summa Canister Vacuum Summary

Work Order: 17-02-1474

Page 1 of 1

Sample Name	Vacuum Out	Vacuum In	Equipment	Description
SVM27-5'	-29.50 in Hg	-1.50 in Hg	LC244	Summa Canister 1L
SVM27-10'	-29.50 in Hg	-0.40 in Hg	SLC095	Summa Canister 1L
SVM26-5'	-29.50 in Hg	0.00 in Hg	LC742	Summa Canister 1L
SVM26-10'	-29.50 in Hg	-2.20 in Hg	LC258	Summa Canister 1L
SVM25-5'	-29.50 in Hg	-2.30 in Hg	LC775	Summa Canister 1L
SVM25-10'	-29.50 in Hg	-2.50 in Hg	LC1203	Summa Canister 1L
SVM25-10' Dup	-29.50 in Hg	-0.90 in Hg	LC934	Summa Canister 1L
SVM24-5'	-29.50 in Hg	-1.00 in Hg	LC921	Summa Canister 1L
SVM24-10'	-29.50 in Hg	-2.40 in Hg	LC291	Summa Canister 1L

Sample Analysis Summary Report

Work Order: 17-02-1474

Page 1 of 1

<u>Method</u>	<u>Extraction</u>	<u>Chemist ID</u>	<u>Instrument</u>	<u>Analytical Location</u>
EPA TO-15	N/A	953	GC/MS AA	2


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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.



Calscience

7440 Lincoln Way, Garden Grove, CA 92841-1427 • (714) 895-5494
For courier service / sample drop off information, contact us26_sales@eurofins.com or call us.

AIR CHAIN-OF-CUSTODY RECORD

WO NO./LAB USE ONLY

17-02-1474

DATE: 2/16/17

PAGE: 1 OF 1

LABORATORY CLIENT: Environmental Support Technologies
 ADDRESS: 8 Goodyear, Suite 125, Irvine, CA 92618
 TEL: 949-679-9500 ashley.flores@goemds.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
 SPECIAL INSTRUCTIONS:

LABORATORY CLIENT: Former Defense Fuel Depot
 ADDRESS: 15306 Norwalk Blvd, Norwalk, Ca
 PROJECT CONTACT: Ashley Flores
 PROJECT ADDRESS: 15306 Norwalk Blvd, Norwalk, Ca
 CLIENT PROJECT NAME/NO: Former Defense Fuel Depot
 PROJECT CONTACT: Ashley Flores
 PROJECT ADDRESS: 15306 Norwalk Blvd, Norwalk, Ca
 CLIENT PROJECT NAME/NO: Former Defense Fuel Depot
 PROJECT CONTACT: Ashley Flores
 PROJECT ADDRESS: 15306 Norwalk Blvd, Norwalk, Ca

LAB USE ONLY	SAMPLE ID	FIELD ID / POINT OF COLLECTION	MATRIX	SAMPLING EQUIPMENT			START SAMPLING INFORMATION			STOP SAMPLING INFORMATION			REQUESTED ANALYSES
				Media ID	Canister Size 6L or 1L	Flow Controller ID	Date	Time (24 hr clock)	Canister Pressure (in Hg)	Date	Time (24 hr clock)	Canister Pressure (in Hg)	
1	SVM 27-5'		SV	LC244	1L	A152	2/16/17	8:30	-30	2/16/17	8:37	-1	X
2	SVM 27-10'			SLC095		A38		9:04	-30		9:11	-2	
3	SVM 26-5'			LC742		A350		9:42	-30		9:51	-3	
4	SVM 26-10'			LC258		A168		10:26	-30		10:32	-2	
5	SVM 25-5'			LC775		A394		11:00	-30		11:06	-2	
6	SVM 25-10'			LC1209		A221		11:21	-30		11:27	-2	
7	SVM 25-10' Dup			LC934		A221		11:30	-30		11:36	-2	
8	SVM 24-5'			LC921		A885		12:06 ^{11:59}	-30		12:06	-2	
9	SVM 24-10'			LC291		A285		12:21	-30		12:27	-1	

Relinquished by: (Signature) *[Signature]* Date: 2/16/17
 Relinquished by: (Signature) *[Signature]* Date: 2/16/17
 Relinquished by: (Signature) *[Signature]* Date: 2/16/17

Received by: (Signature/Affiliation) *[Signature]* Date: 2/16/17
 Received by: (Signature/Affiliation) *[Signature]* Date: 2/16/17
 Received by: (Signature/Affiliation) *[Signature]* Date: 2/16/17



SAMPLE RECEIPT CHECKLIST

COOLER 0 OF 0

CLIENT: EST

DATE: 02 / 16 / 2017

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

Thermometer ID: SC3B (CF: 0.0°C); Temperature (w/o CF): _____°C (w/ CF): _____°C; Blank Sample

Sample(s) outside temperature criteria (PM/APM contacted by: _____)

Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling

Sample(s) received at ambient temperature; placed on ice for transport by courier

Ambient Temperature: Air Filter

Checked by: 836

CUSTODY SEAL:

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

Checked by: 836

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

Checked by: 1053

SAMPLE CONDITION:

Chain-of-Custody (COC) document(s) received with samples Yes No N/A

COC document(s) received complete Yes No N/A

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 Yes No N/A

Sample container label(s) consistent with COC Yes No N/A

Sample container(s) intact and in good condition Yes No N/A

Proper containers for analyses requested Yes No N/A

Sufficient volume/mass for analyses requested Yes No N/A

Samples received within holding time Yes No N/A

Aqueous samples for certain analyses received within 15-minute holding time

pH Residual Chlorine Dissolved Sulfide Dissolved Oxygen Yes No N/A

Proper preservation chemical(s) noted on COC and/or sample container Yes No N/A

Unpreserved aqueous sample(s) received for certain analyses

Volatile Organics Total Metals Dissolved Metals

Container(s) for certain analysis free of headspace Yes No N/A

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 Yes No N/A

CONTAINER TYPE:

(Trip Blank Lot Number: _____)

Aqueous: VOA VOA_h VOA_{na2} 100PJ 100PJ_{na2} 125AGB 125AGB_h 125AGB_p 125PB

125PB_{z_{na}} 250AGB 250CGB 250CGB_s 250PB 250PB_n 500AGB 500AGJ 500AGJ_s

500PB 1AGB 1AGB_{na2} 1AGB_s 1PB 1PB_{na} _____ _____ _____ _____

Solid: 4ozCGJ 8ozCGJ 16ozCGJ Sleeve (_____) EnCores® (_____) TerraCores® (_____) _____

Air: Tedlar™ Canister Sorbent Tube PUF _____ Other Matrix (_____) : _____ _____

Container: A = Amber, B = Bottle, C = Clear, E = Envelope, G = Glass, J = Jar, P = Plastic, and Z = Ziploc/Resealable Bag

Preservative: b = buffered, f = filtered, h = HCl, n = HNO₃, na = NaOH, na₂ = Na₂S₂O₃, p = H₃PO₄, Labeled/Checked by: 1053

s = H₂SO₄, u = ultra-pure, x = Na₂SO₃+NaHSO₄.H₂O, z_{na} = Zn (CH₃CO₂)₂ + NaOH Reviewed by: 836

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APPENDIX B

ANALYTICAL RESULTS FOR TPH AND VOCs IN SOIL (0 TO 10 FEET BGS)

2015/2016 ANALYTICAL RESULTS

Table B-1
2016 Analytical Results for Gasoline Range Organics and Hydrocarbon Chain Ranges
in Soil (0 to 10 feet bgs)

Defense Fuel Support Point Norwalk
15306 Norwalk Boulevard, Norwalk, California

Sample ID	Sample Depth	Date Sampled (ft bgs)	Gasoline Range Organics (GRO) (mg/kg)	Carbon Range (C6-C12) (mg/kg)	Carbon Range (C13-C22) (mg/kg)	Carbon Range (C23-C32) (mg/kg)	Carbon Range (C33-C44) (mg/kg)	Carbon Range (C23-C44) (mg/kg)
RWQCB Site-Specific Soil Cleanup Goal (0.5 feet below ground surface)			500	500	1,000	---	---	10,000
RWQCB Site-Specific Soil Cleanup Goal (5 feet below ground surface)			500	500	1,000	---	---	10,000
RWQCB Site-Specific Soil Cleanup Goal (10 feet below ground surface)			100	100	100	---	---	1,000
EX-03-E1-1	1	3/19/2015	<0.50	<1.0	10	53	28	81
EX-03-E1-3	3	3/19/2015	<0.50	<1.0	88	440	158	597
EX-03-E2-1	1	3/19/2015	<0.50	<2.0	28	346	178	524
EX-03-E2-3	3	3/19/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-03-E2-5	5	3/19/2015	<0.50	<1.0	19	53	28	81
EX-03-S1-1	1	3/19/2015	<0.50	<1.0	1.3	12	13	25
EX-03-S1-3	3	3/19/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-03-S1-5	5	3/19/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-03-S2-1	1	3/19/2015	<0.50	<1.0	<1.0	6.9	5.9	13
EX-03-S2-3	3	3/19/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-03-S2-5	5	3/19/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-03-W1-1	1	3/19/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-03-W1-3	3	3/19/2015	<0.50	<1.0	<1.0	2.4	<1.0	2.4
EX-03-W1-5	5	3/19/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-03-W2-1	1	3/19/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-03-W2-3	3	3/19/2015	<0.50	<1.0	<1.0	3.0	<1.0	3
EX-03-W2-5	5	3/19/2015	<0.50	<1.0	23	112	50	162
EX-03-N1-1	1	3/19/2015	<0.50	<1.0	<1.0	2.3	<1.0	2.3
EX-03-N1-3	3	3/19/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-03-N1-5	5	3/19/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-03-N2-1	1	3/19/2015	<0.50	<1.0	22	91	64	155
EX-03-N2-3	3	3/19/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-03-N2-5	5	3/19/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-03-F1-5	5	3/19/2015	<0.50	<1.0	<1.0	<1.0	2.4	2.4
EX-03-F2-5	5	3/19/2015	<0.50	<1.0	7.0	47	36	83
EX-03-F3-5	5	3/19/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-03-F4-5	5	3/19/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-03-F5-5	5	3/19/2015	<0.50	<10	350	1,200	510	1,710
EX-03-F6-5	5	3/19/2015	<0.50	<1.0	76	285	111	396
EX-4-E1-1	1	4/7/2015	<0.50	<1.0	<1.0	2.5	<1.0	<1.0
EX-4-E1-3	3	4/7/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-4-E1-5	5	4/7/2015	<0.50	<1.0	<1.0	1.2	<1.0	<1.0
EX-4-E2-3	3	4/7/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-4-E2-5	5	4/7/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-4-E3-1	1	4/7/2015	<0.50	<1.0	<1.0	1.8	<1.0	<1.0
EX-4-E3-3	3	4/7/2015	<0.50	<1.0	<1.0	8.0	31	39
EX-4-E3-5	5	4/7/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-4-E4-1	1	4/7/2015	<0.50	<1.0	<1.0	2.7	<1.0	<1.0
EX-4-E4-3	3	4/7/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-4-E4-5	5	4/7/2015	<0.50	<1.0	<1.0	2.8	<1.0	<1.0
EX-4-F1-5	5	4/8/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0

Table B-1
2016 Analytical Results for Gasoline Range Organics and Hydrocarbon Chain Ranges
in Soil (0 to 10 feet bgs)

Defense Fuel Support Point Norwalk
15306 Norwalk Boulevard, Norwalk, California

Sample ID	Sample Depth	Date Sampled (ft bgs)	Gasoline Range Organics (GRO) (mg/kg)	Carbon Range (C6-C12) (mg/kg)	Carbon Range (C13-C22) (mg/kg)	Carbon Range (C23-C32) (mg/kg)	Carbon Range (C33-C44) (mg/kg)	Carbon Range (C23-C44) (mg/kg)
RWQCB Site-Specific Soil Cleanup Goal (0.5 feet below ground surface)			500	500	1,000	---	---	10,000
RWQCB Site-Specific Soil Cleanup Goal (5 feet below ground surface)			500	500	1,000	---	---	10,000
RWQCB Site-Specific Soil Cleanup Goal (10 feet below ground surface)			100	100	100	---	---	1,000
EX-4-F3-5	5	4/8/2015	<0.50	0.60	17	62	26	88
EX-4-F4-8-JD *	8	7/1/2015	<0.50	---	<10	<10	<10	---
EX-4-F5-5	5	4/8/2015	<0.50	<1.0	7.1	4.7	<1.0	<1.0
EX-4-F6-5	5	4/8/2015	<0.50	0.70	604	953	370	1,322
EX-4-F7-5	5	4/8/2015	<0.50	1.8	99	215	61	276
EX-4-F8-5	5	4/8/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-4-F9-5	5	4/8/2015	<0.50	<1.0	83	235	121	355
EX-04-F10-12 *	10	7/1/2015	<0.50	---	<10	<10	<10	---
EX-4-N1-1	1	4/7/2015	<0.50	0.55	30	363	481	844
EX-4-N1-3	3	4/7/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-4-N1-5	5	4/7/2015	<0.50	<1.0	5.2	95	228	323
EX-4-N2-1	1	4/7/2015	<0.50	0.95	201	599	260	858
EX-4-N2-3	3	4/7/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-4-N2-5	5	4/7/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-4-N3-3	3	4/7/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-4-N3-5	5	4/7/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-4-N4-1	1	4/7/2015	<0.50	<1.0	3.7	95	45	140
EX-4-N4-3	3	4/7/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-4-N4-5	5	4/7/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-4-S1-3	3	4/7/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-4-S1-5	5	4/7/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-4-S2-1	1	4/7/2015	<0.50	<1.0	1.8	43	15	58
EX-4-S2-3	3	4/7/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-4-S2-5	5	4/7/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-4-S3-1	1	4/7/2015	<0.50	<1.0	<1.0	1.4	<1.0	<1.0
EX-4-S3-3	3	4/7/2015	<0.50	<1.0	78	414	479	892
EX-4-S3-5	5	4/7/2015	<0.50	<1.0	9.6	81	2.0	83
EX-4-W1-1	1	4/7/2015	<0.50	4.7	168	194	214	408
EX-4-W1-3	3	4/7/2015	<0.50	<1.0	2.9	49	29	78
EX-4-W1-5	5	4/7/2015	<0.50	<1.0	10	66	32	98
EX-4-W2-1	1	4/7/2015	<0.50	<1.0	4.7	119	293	412
EX-4-W2-3	3	4/7/2015	<0.50	<1.0	16	137	204	340
EX-4-W3-1	1	4/7/2015	<0.50	5.0	211	569	1,040	1,609
EX-4-W3-5	5	4/7/2015	0.91	9.4	116	306	296	601
EX-4-W4-1	1	4/7/2015	<0.50	<1.0	95	457	291	748
EX-4-W4-3	3	4/7/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-4-W4-5	5	4/7/2015	<0.50	<5.0	5.5	382	1,268	1,650
EX-04-F2-12 *	2	7/1/2015	<0.50	---	<10	<10	<10	---
EX-4-E2-1-JD *	2	7/1/2015	<0.50	---	---	---	---	---
EX-4-F10-8-JD *	8	7/1/2015	<0.50	---	<10	<10	<10	---
EX-4-F11-5-JD *	5	7/1/2015	<0.50	---	<10	<10	<10	---

Table B-1
2016 Analytical Results for Gasoline Range Organics and Hydrocarbon Chain Ranges
in Soil (0 to 10 feet bgs)

Defense Fuel Support Point Norwalk
15306 Norwalk Boulevard, Norwalk, California

Sample ID	Sample Depth	Date Sampled (ft bgs)	Gasoline Range Organics (GRO) (mg/kg)	Carbon Range (C6-C12) (mg/kg)	Carbon Range (C13-C22) (mg/kg)	Carbon Range (C23-C32) (mg/kg)	Carbon Range (C33-C44) (mg/kg)	Carbon Range (C23-C44) (mg/kg)
RWQCB Site-Specific Soil Cleanup Goal (0.5 feet below ground surface)			500	500	1,000	---	---	10,000
RWQCB Site-Specific Soil Cleanup Goal (5 feet below ground surface)			500	500	1,000	---	---	10,000
RWQCB Site-Specific Soil Cleanup Goal (10 feet below ground surface)			100	100	100	---	---	1,000
EX-4-F2-5-JD *	5	7/1/2015	<0.50	---	---	---	---	---
EX-4-N3-3-JD *	3	7/1/2015	<0.50	---	<10	<10	<10	---
EX-4-S1-1-JD *	1	7/1/2015	<0.50	---	---	---	---	---
EX-4-W3-1-JD *	1	7/1/2015	<0.50	---	---	---	---	---
EX-4-W3-5-JD *	5	7/1/2015	<0.50	---	---	---	---	---
EX-5-E1-1	1	4/8/2015	<0.50	<1.0	22	121	115	236
EX-5-E1-3	3	4/8/2015	<0.50	<1.0	34	261	325	586
EX-5-E1-5	5	4/8/2015	<0.50	<1.0	4.8	52	38	90
EX-5-E2-1	1	4/8/2015	<0.50	<1.0	5.3	85	147	232
EX-5-E2-3	3	4/8/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-5-E2-5	5	4/8/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-5-F1-5	5	4/8/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-5-F2-5	5	4/8/2015	<0.50	<1.0	<1.0	1.3	<1.0	<1.0
EX-5-F3-5	5	4/8/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-5-N1-1	1	4/8/2015	<0.50	<1.0	50	276	180	456
EX-5-N1-3	3	4/8/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-5-N1-5	5	4/8/2015	<0.50	<1.0	3.7	31.5	24	55
EX-5-N2-1	1	4/8/2015	<0.50	<1.0	3.3	48	67	115
EX-5-N2-3	3	4/8/2015	<0.50	<1.0	<1.0	16	8.0	24
EX-5-N2-5	5	4/8/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-5-N3-1	1	4/8/2015	<0.50	<1.0	15	112	96	208
EX-5-N3-3	3	4/8/2015	<0.50	<1.0	21	125	73	197
EX-5-N3-5	5	4/8/2015	<0.50	<1.0	14	106	87	193
EX-5-S1-1	1	4/8/2015	<0.50	<1.0	<1.0	1.7	<1.0	<1.0
EX-5-S1-3	3	4/8/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-5-S1-5	5	4/8/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-5-S2-1	1	4/8/2015	<0.50	<1.0	<1.0	14	16	30
EX-5-S2-3	3	4/8/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-5-S2-5	5	4/8/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-5-W1-1	1	4/8/2015	<0.50	<1.0	23	285	320	604
EX-5-W1-3	3	4/8/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-5-W1-5	5	4/8/2015	<0.50	<1.0	7.5	151	151	302
EX-5-E1-3-JD *	3	7/1/2015	<0.50	---	---	---	---	---
EX-5-F4-5 *	5	7/1/2015	<0.50	---	<10	<10	<10	---
EX-5-N1-3-JD *	3	7/1/2015	<0.50	---	<10	<10	<10	---
EX-5-S1-3-JD *	3	7/1/2015	<0.50	---	<10	<10	<10	---
EX-5-W1-1-JD *	1	7/1/2015	<0.50	---	---	---	---	---
EX-14-E1-1	1	3/25/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-E1-3	3	3/25/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-E1-5	5	3/25/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-E1-8	8	3/25/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0

Table B-1
2016 Analytical Results for Gasoline Range Organics and Hydrocarbon Chain Ranges
in Soil (0 to 10 feet bgs)

Defense Fuel Support Point Norwalk
15306 Norwalk Boulevard, Norwalk, California

Sample ID	Sample Depth	Date Sampled (ft bgs)	Gasoline Range Organics (GRO) (mg/kg)	Carbon Range (C6-C12) (mg/kg)	Carbon Range (C13-C22) (mg/kg)	Carbon Range (C23-C32) (mg/kg)	Carbon Range (C33-C44) (mg/kg)	Carbon Range (C23-C44) (mg/kg)
RWQCB Site-Specific Soil Cleanup Goal (0.5 feet below ground surface)			500	500	1,000	---	---	10,000
RWQCB Site-Specific Soil Cleanup Goal (5 feet below ground surface)			500	500	1,000	---	---	10,000
RWQCB Site-Specific Soil Cleanup Goal (10 feet below ground surface)			100	100	100	---	---	1,000
EX-14-E1-10	10	3/25/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-E2-1	1	3/25/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-E2-3	3	3/25/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-E2-5	5	3/25/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-E2-8	8	3/25/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-E2-10	10	3/25/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-E3-1	1	3/25/2015	<0.50	<1.0	<1.0	2.7	<1.0	<1.0
EX-14-E3-3	3	3/25/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-E3-5	5	3/25/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-E3-8	8	3/25/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-E3-10	10	3/25/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-E4-1	1	3/25/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-E4-3	3	3/25/2015	<0.50	<1.0	0.65	8.5	5.2	14
EX-14-E4-5	5	3/25/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-E4-8	8	3/25/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-E4-10	10	3/25/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-E5-1	1	3/25/2015	<0.50	<1.0	<1.0	1.7	<1.0	<1.0
EX-14-E5-3	3	3/25/2015	<0.50	<1.0	<1.0	2.8	2.1	4.8
EX-14-E5-5	5	3/25/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-E5-8	8	3/25/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-E5-10	10	3/25/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-N1-1	1	3/25/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-N1-3	3	3/25/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-N1-5	5	3/25/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-N1-8	8	3/25/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-N1-10	10	3/25/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-N2-1	1	3/25/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-N2-3	3	3/25/2015	<0.50	3.2	8.3	25	47	72
EX-14-N2-5	5	3/25/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-N2-8	8	3/25/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-N2-10	10	3/25/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-N3-1	1	3/25/2015	<0.50	<1.0	0.55	12	38	50
EX-14-N3-3	3	3/25/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-N3-5	5	3/25/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-N3-8	8	3/25/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-N3-10	10	3/25/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-N4-1	1	3/25/2015	<0.50	<1.0	<1.0	7.1	37	44
EX-14-N4-3	3	3/25/2015	<0.50	<1.0	<1.0	6.6	37	44
EX-14-N4-5	5	3/25/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-N4-8	8	3/25/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-N4-10	10	3/25/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0

Table B-1
2016 Analytical Results for Gasoline Range Organics and Hydrocarbon Chain Ranges
in Soil (0 to 10 feet bgs)

Defense Fuel Support Point Norwalk
15306 Norwalk Boulevard, Norwalk, California

Sample ID	Sample Depth	Date Sampled (ft bgs)	Gasoline Range Organics (GRO) (mg/kg)	Carbon Range (C6-C12) (mg/kg)	Carbon Range (C13-C22) (mg/kg)	Carbon Range (C23-C32) (mg/kg)	Carbon Range (C33-C44) (mg/kg)	Carbon Range (C23-C44) (mg/kg)
RWQCB Site-Specific Soil Cleanup Goal (0.5 feet below ground surface)			500	500	1,000	---	---	10,000
RWQCB Site-Specific Soil Cleanup Goal (5 feet below ground surface)			500	500	1,000	---	---	10,000
RWQCB Site-Specific Soil Cleanup Goal (10 feet below ground surface)			100	100	100	---	---	1,000
EX-14-S1-1	1	3/25/2015	<0.50	<1.0	<1.0	5.1	8.6	14
EX-14-S1-3	3	3/25/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-S1-5	5	3/25/2015	<0.50	<1.0	<1.0	2.8	0.55	3.3
EX-14-S1-8	8	3/25/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-S1-10	10	3/25/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-S2-1	1	3/25/2015	<0.50	<1.0	<1.0	6.0	3.0	9.0
EX-14-S2-3	3	3/25/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-S2-5	5	3/25/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-S2-8	8	3/25/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-S2-10	10	3/25/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-S3-1	1	3/25/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-S3-3	3	3/25/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-S3-5	5	3/25/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-S3-8	8	3/25/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-S3-10	10	3/25/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-W1-1	1	3/25/2015	<0.50	<1.0	<1.0	1.3	4.6	5.9
EX-14-W1-3	3	3/25/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-W1-5	5	3/25/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-W1-8	8	3/25/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-W1-10	10	3/25/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-W2-1	1	3/25/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-W2-5	5	3/25/2015	<0.50	0.75	52	103	81	183
EX-14-W2-8	8	3/25/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-W2-10	10	3/25/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-W3-1	1	3/25/2015	<0.50	<1.0	47	89	122	211
EX-14-W3-3	3	3/25/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-W3-5	5	3/25/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-W3-8	8	3/25/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-W3-10	10	3/25/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-B10-10	10	3/27/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-B1-10	10	3/27/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-B2-10	10	3/27/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-B3-10	10	3/27/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-B4-10	10	3/27/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-B5-10	10	3/27/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-B6-10	10	3/27/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-B7-10	10	3/27/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-B8-10	10	3/27/2015	<0.50	<1.0	12	18	2.7	20
EX-14-B9-10	10	3/27/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
EX-14-B11-10 *	10	7/1/2015	<0.50	---	<10	<10	<10	---
EX-14-B12-10 *	10	7/1/2015	<0.50	---	<10	<10	<10	---

Table B-1
2016 Analytical Results for Gasoline Range Organics and Hydrocarbon Chain Ranges
in Soil (0 to 10 feet bgs)

Defense Fuel Support Point Norwalk
15306 Norwalk Boulevard, Norwalk, California

Sample ID	Sample Depth	Date Sampled (ft bgs)	Gasoline Range Organics (GRO) (mg/kg)	Carbon Range (C6-C12) (mg/kg)	Carbon Range (C13-C22) (mg/kg)	Carbon Range (C23-C32) (mg/kg)	Carbon Range (C33-C44) (mg/kg)	Carbon Range (C23-C44) (mg/kg)
RWQCB Site-Specific Soil Cleanup Goal (0.5 feet below ground surface)			500	500	1,000	---	---	10,000
RWQCB Site-Specific Soil Cleanup Goal (5 feet below ground surface)			500	500	1,000	---	---	10,000
RWQCB Site-Specific Soil Cleanup Goal (10 feet below ground surface)			100	100	100	---	---	1,000
EX-14-E1-3-JD *	3	7/1/2015	<0.50	---	---	---	---	---
EX-14-E5-1-JD *	1	7/1/2015	<0.50	---	---	---	---	---
EX-14-N1-1-JD *	1	7/1/2015	<0.50	---	---	---	---	---
EX-14-S1-5-JD *	5	7/1/2015	<0.50	---	<10	<10	<10	---
EX-14-S3-8-JD *	8	7/1/2015	<0.50	---	---	---	---	---
EX-14-W1-8-JD *	8	7/1/2015	<0.50	---	<10	55	55	---
EX-14-W2-3-JD *	3	7/1/2015	<0.50	---	---	---	---	---
EX-35-N1-3	3	10/20/2015	<0.50	---	<10	23	24	47
EX-35-N1-6	6	10/20/2015	<0.50	---	<10	<10	<10	<10
EX-35-N1-9	9	10/20/2015	<0.50	---	27	240	180	420
EX-35-N2-3	3	10/20/2015	<0.50	---	<10	<10	<10	<10
EX-35-N2-6	6	10/20/2015	<0.50	---	<10	<10	<10	<10
EX-35-N2-9	9	10/20/2015	<0.50	---	<10	<10	<10	<10
EX-35-N3-3	3	10/20/2015	<0.50	---	12	63	54	117
EX-35-N3-6	6	10/20/2015	<0.50	---	<10	<10	<10	<10
EX-35-N3-9	9	10/20/2015	<0.50	---	<10	<10	<10	<10
EX-35-N4-3	3	10/20/2015	<0.50	---	<10	<10	<10	<10
EX-35-N4-6	6	10/20/2015	<0.50	---	<10	<10	<10	<10
EX-35-N4-9	9	10/20/2015	<0.50	---	<10	<10	<10	<10
EX-35-N5-3	3	10/20/2015	<0.50	---	<10	<10	<10	<10
EX-35-N5-6	6	10/20/2015	<0.50	---	<10	<10	<10	<10
EX-35-N5-9	9	10/20/2015	<0.50	---	<10	<10	<10	<10
EX-35-N6-3	3	10/20/2015	<0.50	---	<10	<10	<10	<10
EX-35-N6-6	6	10/20/2015	<0.50	---	<10	<10	<10	<10
EX-35-N6-9	9	10/20/2015	<0.50	---	<10	<10	<10	<10
EX-35-N7-3	3	10/20/2015	<0.50	---	<10	<10	<10	<10
EX-35-N7-6	6	10/20/2015	<0.50	---	<10	<10	<10	<10
EX-35-N7-9	9	10/20/2015	<0.50	---	<10	<10	<10	<10
EX-35-N8-3	3	10/20/2015	<0.50	---	<10	<10	<10	<10
EX-35-N8-6	6	10/20/2015	<0.50	---	<10	<10	<10	<10
EX-35-N8-9	9	10/20/2015	<0.50	---	<10	<10	<10	<10
EX-35-W1-3	3	10/20/2015	<0.50	---	<10	<10	<10	<10
EX-35-W1-6	6	10/20/2015	<0.50	---	<10	<10	<10	<10
EX-35-W1-9	9	10/20/2015	<0.50	---	<10	<10	<10	<10
EX-35-W2-3	3	10/20/2015	<0.50	---	<10	<10	<10	<10
EX-35-W2-6	6	10/20/2015	<0.50	---	<10	17	20	37
EX-35-W2-9	9	10/20/2015	<0.50	---	<10	<10	<10	<10
EX-35-W3-3	3	10/20/2015	<0.50	---	<10	<10	<10	<10
EX-35-W3-6	6	10/20/2015	<0.50	---	<10	<10	<10	<10
EX-35-W3-9	9	10/20/2015	<0.50	---	<10	<10	<10	<10
EX-35-W4-3	3	10/20/2015	<0.50	---	<10	<10	<10	<10

Table B-1
2016 Analytical Results for Gasoline Range Organics and Hydrocarbon Chain Ranges
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Defense Fuel Support Point Norwalk
15306 Norwalk Boulevard, Norwalk, California

Sample ID	Sample Depth	Date Sampled (ft bgs)	Gasoline Range Organics (GRO) (mg/kg)	Carbon Range (C6-C12) (mg/kg)	Carbon Range (C13-C22) (mg/kg)	Carbon Range (C23-C32) (mg/kg)	Carbon Range (C33-C44) (mg/kg)	Carbon Range (C23-C44) (mg/kg)
RWQCB Site-Specific Soil Cleanup Goal (0.5 feet below ground surface)			500	500	1,000	---	---	10,000
RWQCB Site-Specific Soil Cleanup Goal (5 feet below ground surface)			500	500	1,000	---	---	10,000
RWQCB Site-Specific Soil Cleanup Goal (10 feet below ground surface)			100	100	100	---	---	1,000
EX-35-W4-6	6	10/20/2015	<0.50	---	<10	<10	<10	<10
EX-35-W4-9	9	10/20/2015	<0.50	---	<10	<10	<10	<10
EX-35-W5-3	3	10/20/2015	<0.50	---	<10	<10	<10	<10
EX-35-W5-6	6	10/20/2015	<0.50	---	<10	<10	<10	<10
EX-35-W5-9	9	10/20/2015	<0.50	---	<10	<10	<10	<10
EX-35-W6-3	3	10/20/2015	<0.50	---	<10	<10	<10	<10
EX-35-W6-6	6	10/20/2015	<0.50	---	<10	<10	<10	<10
EX-35-W6-9	9	10/20/2015	<0.50	---	<10	<10	<10	<10
EX-35-W7-3	3	10/20/2015	<0.50	---	<10	20	21	41
EX-35-W7-6	6	10/20/2015	<0.50	---	52	430	230	660
EX-35-W7-9	9	10/20/2015	<0.50	---	<10	16	21	37
EX-35-W8-3	3	10/20/2015	<0.50	---	<10	<10	<10	<10
EX-35-W8-6	6	10/20/2015	<0.50	---	<10	<10	<10	<10
EX-35-W8-9	9	10/20/2015	<0.50	---	<10	21	22	43
EX-35-W9-3	3	10/20/2015	<0.50	---	<10	<10	<10	<10
EX-35-W9-6	6	10/20/2015	<0.50	---	98	110	<50	110
EX-35-W9-9	9	10/20/2015	<0.50	---	54	350	270	620
EX-35-E10-3	3	11/17/2015	<0.50	---	<10	<10	<10	<10
EX-35-E10-6	6	11/17/2015	<0.50	---	<10	<10	<10	<10
EX-35-E10-9	9	11/17/2015	<0.50	---	<10	<10	<10	<10
EX-35-E11-3	3	11/17/2015	<0.50	---	<10	<10	<10	<10
EX-35-E11-6	6	11/17/2015	<0.50	---	<10	<10	<10	<10
EX-35-E11-9	9	11/17/2015	<0.50	---	<10	<10	<10	<10
EX-35-E1-3	3	11/17/2015	<0.50	---	<10	<10	<10	<10
EX-35-E1-6	6	11/17/2015	<0.50	---	<10	<10	<10	<10
EX-35-E1-9	9	11/17/2015	<0.50	---	<10	<10	<10	<10
EX-35-E2-3	3	11/17/2015	<0.50	---	<10	<10	<10	<10
EX-35-E2-6	6	11/17/2015	<0.50	---	<10	<10	<10	<10
EX-35-E2-9	9	11/17/2015	<0.50	---	<10	<10	<10	<10
EX-35-E3-3	3	11/17/2015	<0.50	---	<10	<10	<10	<10
EX-35-E3-6	6	11/17/2015	<0.50	---	<10	<10	<10	<10
EX-35-E3-9	9	11/17/2015	<0.50	---	<10	<10	<10	<10
EX-35-E4-3	3	11/17/2015	<0.50	---	<10	<10	<10	<10
EX-35-E4-6	6	11/17/2015	0.66	---	<10	<10	<10	<10
EX-35-E4-9	9	11/17/2015	<0.50	---	<10	<10	<10	<10
EX-35-E12-3	3	12/3/2015	<0.50	---	<10	<10	<10	<10
EX-35-E12-6	6	12/3/2015	<0.50	---	<10	<10	<10	<10
EX-35-E5-9	9	11/17/2015	0.61	---	<10	<10	<10	<10
EX-35-E6-3	3	11/17/2015	<0.50	---	<10	<10	<10	<10
EX-35-E6-6	6	11/17/2015	<0.50	---	<10	<10	<10	<10
EX-35-E6-9	9	11/17/2015	0.61	---	<10	<10	<10	<10

Table B-1
2016 Analytical Results for Gasoline Range Organics and Hydrocarbon Chain Ranges
in Soil (0 to 10 feet bgs)

Defense Fuel Support Point Norwalk
15306 Norwalk Boulevard, Norwalk, California

Sample ID	Sample Depth	Date Sampled (ft bgs)	Gasoline Range Organics (GRO) (mg/kg)	Carbon Range (C6-C12) (mg/kg)	Carbon Range (C13-C22) (mg/kg)	Carbon Range (C23-C32) (mg/kg)	Carbon Range (C33-C44) (mg/kg)	Carbon Range (C23-C44) (mg/kg)
RWQCB Site-Specific Soil Cleanup Goal (0.5 feet below ground surface)			500	500	1,000	---	---	10,000
RWQCB Site-Specific Soil Cleanup Goal (5 feet below ground surface)			500	500	1,000	---	---	10,000
RWQCB Site-Specific Soil Cleanup Goal (10 feet below ground surface)			100	100	100	---	---	1,000
EX-35-E7-3	3	11/17/2015	<0.50	---	<10	15	14	29
EX-35-E7-6	6	11/17/2015	<0.50	---	<10	<10	<10	<10
EX-35-E7-9	9	11/17/2015	<0.50	---	<10	<10	<10	<10
EX-35-E8-3	3	11/17/2015	<0.50	---	<10	<10	<10	<10
EX-35-E8-6	6	11/17/2015	<0.50	---	<10	<10	<10	<10
EX-35-E8-9	9	11/17/2015	<0.50	---	<10	<10	<10	<10
EX-35-E9-3	3	11/17/2015	<0.50	---	<10	<10	<10	<10
EX-35-E9-6	6	11/17/2015	<0.50	---	<10	<10	<10	<10
EX-35-E9-9	9	11/17/2015	<0.50	---	<10	<10	<10	<10
EX-35-S10-3	3	11/17/2015	<0.50	---	<10	<10	<10	<10
EX-35-S10-6	6	11/17/2015	<0.50	---	<10	<10	<10	<10
EX-35-S10-9	9	11/17/2015	<0.50	---	<10	<10	<10	<10
EX-35-S11-3	3	11/17/2015	<0.50	---	<10	<10	<10	<10
EX-35-S11-6	6	11/17/2015	<0.50	---	<10	<10	<10	<10
EX-35-S11-9	9	11/17/2015	<0.50	---	<10	<10	<10	<10
EX-35-S1-3	3	11/17/2015	<0.50	---	<10	<10	<10	<10
EX-35-S1-6	6	11/17/2015	<0.50	---	<10	<10	<10	<10
EX-35-S1-9	9	11/17/2015	<0.50	---	<10	<10	<10	<10
EX-35-S2-3	3	11/17/2015	<0.50	---	<10	<10	<10	<10
EX-35-S2-6	6	11/17/2015	<0.50	---	<10	<10	<10	<10
EX-35-S2-9	9	11/17/2015	<0.50	---	<10	<10	<10	<10
EX-35-S3-3	3	11/17/2015	<0.50	---	<10	<10	<10	<10
EX-35-S3-6	6	11/17/2015	<0.50	---	<10	<10	<10	<10
EX-35-S3-9	9	11/17/2015	<0.50	---	<10	<10	<10	<10
EX-35-S4-3	3	11/17/2015	<0.50	---	<10	<10	<10	<10
EX-35-S4-6	6	11/17/2015	<0.50	---	<10	<10	<10	<10
EX-35-S4-9	9	11/17/2015	<0.50	---	<10	<10	<10	<10
EX-35-S5-3	3	11/17/2015	<0.50	---	<10	<10	<10	<10
EX-35-S5-6	6	11/17/2015	<0.50	---	<10	<10	<10	<10
EX-35-S5-9	9	11/17/2015	<0.50	---	<10	<10	<10	<10
EX-35-S6-3	3	11/17/2015	<0.50	---	<10	<10	<10	<10
EX-35-S6-6	6	11/17/2015	<0.50	---	<10	<10	<10	<10
EX-35-S6-9	9	11/17/2015	<0.50	---	<10	<10	<10	<10
EX-35-S7-3	3	11/17/2015	<0.50	---	<10	<10	<10	<10
EX-35-S7-6	6	11/17/2015	<0.50	---	<10	<10	<10	<10
EX-35-S7-9	9	11/17/2015	<0.50	---	<10	<10	<10	<10
EX-35-S8-3	3	11/17/2015	<0.50	---	<10	<10	<10	<10
EX-35-S8-6	6	11/17/2015	<0.50	---	<10	<10	<10	<10
EX-35-S8-9	9	11/17/2015	<0.50	---	<10	<10	<10	<10
EX-35-S9-3	3	11/17/2015	<0.50	---	<10	<10	<10	<10
EX-35-S9-6	6	11/17/2015	<0.50	---	<10	<10	<10	<10

Table B-1
2016 Analytical Results for Gasoline Range Organics and Hydrocarbon Chain Ranges
in Soil (0 to 10 feet bgs)

Defense Fuel Support Point Norwalk
15306 Norwalk Boulevard, Norwalk, California

Sample ID	Sample Depth	Date Sampled (ft bgs)	Gasoline Range Organics (GRO) (mg/kg)	Carbon Range (C6-C12) (mg/kg)	Carbon Range (C13-C22) (mg/kg)	Carbon Range (C23-C32) (mg/kg)	Carbon Range (C33-C44) (mg/kg)	Carbon Range (C23-C44) (mg/kg)
RWQCB Site-Specific Soil Cleanup Goal (0.5 feet below ground surface)			500	500	1,000	---	---	10,000
RWQCB Site-Specific Soil Cleanup Goal (5 feet below ground surface)			500	500	1,000	---	---	10,000
RWQCB Site-Specific Soil Cleanup Goal (10 feet below ground surface)			100	100	100	---	---	1,000
EX-35-S9-9	9	11/17/2015	<0.50	---	<10	<10	<10	<10
EX-19-GP-1	---	5/22/2015	---	<1.0	<1.0	<1.0	<1.0	<1.0
EX-19-GP-2	---	5/22/2015	---	<1.0	<1.0	<1.0	<1.0	<1.0
EX-19-GP-3	---	5/22/2015	---	<1.0	<1.0	<1.0	<1.0	<1.0
EX-19-GP-4	---	5/22/2015	---	<1.0	<1.0	<1.0	<1.0	<1.0
EX-19-GP-5	---	5/22/2015	---	<1.0	<1.0	<1.0	<1.0	<1.0
EX-19-N1-3	3	9/1/2015	<0.50	---	<10	<10	<10	<10
EX-19-N1-6	6	9/1/2015	<0.50	---	<10	<10	<10	<10
EX-19-N1-9	9	9/1/2015	<0.50	---	<10	<10	<10	<10
EX-19-N2-3	3	9/1/2015	<0.50	---	<10	<10	<10	<10
EX-19-N2-6	6	9/1/2015	<0.50	---	<10	<10	<10	<10
EX-19-N2-9	9	9/1/2015	<0.50	---	<10	<10	<10	<10
EX-19-N3-3	3	9/1/2015	<0.50	---	24	130	120	250
EX-19-N3-6	6	9/1/2015	<0.50	---	<10	<10	<10	<10
EX-19-N3-9	9	9/1/2015	<0.50	---	<10	<10	<10	<10
EX-19-N4-3	3	9/1/2015	<0.50	---	11	71	24	95
EX-19-N4-6	6	9/1/2015	<0.50	---	<10	<10	<10	<10
EX-19-N4-9	9	9/1/2015	<0.50	---	<10	<10	<10	<10
EX-19-N5-3	3	9/1/2015	<0.50	---	<10	<10	<10	<10
EX-19-N5-6	6	9/1/2015	<0.50	---	<10	51	18	69
EX-19-N5-9	9	9/1/2015	<0.50	---	<10	<10	<10	<10
EX-19-N6-3	3	9/1/2015	<0.50	---	<10	10	<10	10
EX-19-N6-6	6	9/1/2015	<0.50	---	<10	35	30	65
EX-19-N6-9	9	9/1/2015	<0.50	---	19	110	61	171
EX-19-N7-3	3	9/1/2015	<0.50	---	<10	<10	<10	<10
EX-19-N7-6	6	9/1/2015	<0.50	---	<10	<10	<10	<10
EX-19-N7-9	9	9/1/2015	<0.50	---	<10	<10	<10	<10
EX-19-N8-3	3	9/1/2015	<0.50	---	<10	<10	<10	<10
EX-19-N8-6	6	9/1/2015	<0.50	---	<10	<10	<10	<10
EX-19-N8-9	9	9/1/2015	<0.50	---	<10	<10	<10	<10
EX-19-W1-3	3	9/1/2015	<0.50	---	420	390	140	530
EX-19-W1-6	6	9/1/2015	<0.50	---	24	25	12	37
EX-19-W1-9	9	9/1/2015	<0.50	---	<10	<10	<10	<10
EX-19-W2-3	3	9/1/2015	<0.50	---	<10	30	23	53
EX-19-W2-6	6	9/1/2015	<0.50	---	<10	26	24	50
EX-19-W2-9	9	9/1/2015	<0.50	---	<10	<10	<10	<10
EX-19-W3-3	3	9/1/2015	<0.50	---	32	98	110	208
EX-19-W3-6	6	9/1/2015	<0.50	---	<10	<10	<10	<10
EX-19-W3-9	9	9/1/2015	<0.50	---	<10	<10	<10	<10
EX-19-W4-3	3	9/1/2015	<0.50	---	<10	<10	<10	<10
EX-19-W4-6	6	9/1/2015	<0.50	---	<10	<10	<10	<10

Table B-1
2016 Analytical Results for Gasoline Range Organics and Hydrocarbon Chain Ranges
in Soil (0 to 10 feet bgs)

Defense Fuel Support Point Norwalk
15306 Norwalk Boulevard, Norwalk, California

Sample ID	Sample Depth	Date Sampled (ft bgs)	Gasoline Range Organics (GRO) (mg/kg)	Carbon Range (C6-C12) (mg/kg)	Carbon Range (C13-C22) (mg/kg)	Carbon Range (C23-C32) (mg/kg)	Carbon Range (C33-C44) (mg/kg)	Carbon Range (C23-C44) (mg/kg)
RWQCB Site-Specific Soil Cleanup Goal (0.5 feet below ground surface)			500	500	1,000	---	---	10,000
RWQCB Site-Specific Soil Cleanup Goal (5 feet below ground surface)			500	500	1,000	---	---	10,000
RWQCB Site-Specific Soil Cleanup Goal (10 feet below ground surface)			100	100	100	---	---	1,000
EX-19-W4-9	9	9/1/2015	<0.50	---	<10	<10	<10	<10
EX-19-W5-3	3	9/1/2015	<0.50	---	<10	<10	<10	<10
EX-19-W5-6	6	9/1/2015	<0.50	---	<10	<10	<10	<10
EX-19-W5-9	9	9/1/2015	<0.50	---	<10	<10	<10	<10
EX-19-W6-3	3	9/1/2015	<0.50	---	<10	<10	<10	<10
EX-19-W6-6	6	9/1/2015	<0.50	---	<10	<10	<10	<10
EX-19-W6-9	9	9/1/2015	<0.50	---	<10	<10	<10	<10
EX-19-E1-3	3	12/7/2015	<0.50	---	<10	<10	<10	<10
EX-19-E1-6	6	12/7/2015	<0.50	---	<10	<10	<10	<10
EX-19-E1-9	9	12/7/2015	<0.50	---	<10	<10	<10	<10
EX-19-E2-3	3	12/7/2015	<0.50	---	<10	<10	<10	<10
EX-19-E2-6	6	12/7/2015	<0.50	---	<10	<10	<10	<10
EX-19-E2-9	9	12/7/2015	<0.50	---	<10	<10	<10	<10
EX-19-E3-3	3	12/7/2015	<0.50	---	<10	<10	<10	<10
EX-19-E3-6	6	12/7/2015	<0.50	---	<10	<10	<10	<10
EX-19-E3-9	9	12/7/2015	<0.50	---	14	92	75	167
EX-19-E4-3	3	12/7/2015	<0.50	---	<10	<10	<10	<10
EX-19-E4-6	6	12/7/2015	<0.50	---	<10	<10	<10	<10
EX-19-E4-9	9	12/7/2015	<0.50	---	<10	<10	<10	<10
EX-19-E5-3	3	12/7/2015	<0.50	---	<10	<10	<10	<10
EX-19-E5-6	6	12/7/2015	<0.50	---	<10	<10	<10	<10
EX-19-E5-9	9	12/7/2015	<0.50	---	<10	<10	<10	<10
EX-19-E6-3	3	12/7/2015	<0.50	---	15	140	130	270
EX-19-E6-6	6	12/7/2015	<0.50	---	<10	<10	<10	<10
EX-19-E6-9	9	12/7/2015	<0.50	---	<10	<10	<10	<10
EX-19-E7-3	3	12/7/2015	<0.50	---	<10	<10	<10	<10
EX-19-E7-6	6	12/7/2015	<0.50	---	<10	<10	<10	<10
EX-19-E7-9	9	12/7/2015	<0.50	---	<10	<10	<10	<10
EX-19-S1-3	3	12/7/2015	<0.50	---	<10	23	16	39
EX-19-S1-6	6	12/7/2015	<0.50	---	<10	<10	<10	<10
EX-19-S1-9	9	12/7/2015	<0.50	---	<10	<10	<10	<10
EX-19-S2-3	3	12/7/2015	<0.50	---	<10	<10	<10	<10
EX-19-S2-6	6	12/7/2015	<0.50	---	<10	<10	<10	<10
EX-19-S2-9	9	12/7/2015	<0.50	---	<10	<10	<10	<10
EX-19-S3-3	3	12/7/2015	<0.50	---	<10	<10	<10	<10
EX-19-S3-6	6	12/7/2015	<0.50	---	<10	<10	<10	<10
EX-19-S3-9	9	12/7/2015	<0.50	---	<10	<10	<10	<10
EX-19-S4-3	3	12/7/2015	<0.50	---	<10	71	80	151
EX-19-S4-6	6	12/7/2015	<0.50	---	<10	27	20	47
EX-19-S4-9	9	12/7/2015	<0.50	---	<10	<10	<10	<10
EX-19-S5-3	3	12/7/2015	<0.50	---	<10	<10	<10	<10

Table B-1
2016 Analytical Results for Gasoline Range Organics and Hydrocarbon Chain Ranges
in Soil (0 to 10 feet bgs)

Defense Fuel Support Point Norwalk
15306 Norwalk Boulevard, Norwalk, California

Sample ID	Sample Depth	Date Sampled (ft bgs)	Gasoline Range Organics (GRO) (mg/kg)	Carbon Range (C6-C12) (mg/kg)	Carbon Range (C13-C22) (mg/kg)	Carbon Range (C23-C32) (mg/kg)	Carbon Range (C33-C44) (mg/kg)	Carbon Range (C23-C44) (mg/kg)
RWQCB Site-Specific Soil Cleanup Goal (0.5 feet below ground surface)			500	500	1,000	---	---	10,000
RWQCB Site-Specific Soil Cleanup Goal (5 feet below ground surface)			500	500	1,000	---	---	10,000
RWQCB Site-Specific Soil Cleanup Goal (10 feet below ground surface)			100	100	100	---	---	1,000
EX-19-S5-6	6	12/7/2015	<0.50	---	<10	<10	<10	<10
EX-19-S5-9A	9	12/21/2015	<0.50	---	<10	<10	<10	<10
EX-19-S6-3	3	12/7/2015	<0.50	---	<10	22	22	44
EX-19-S6-6	6	12/7/2015	<0.50	---	<10	<10	<10	<10
EX-19-S6-9	9	12/7/2015	<0.50	---	<10	<10	<10	<10
EX-19-S7-3	3	12/7/2015	<0.50	---	<10	<10	<10	<10
EX-19-S7-6	6	12/7/2015	<0.50	---	<10	<10	<10	<10
EX-19-S7-9	9	12/7/2015	<0.50	---	<10	<10	<10	<10
EX-19-S8-3	3	12/7/2015	<0.50	---	28	200	140	340
EX-19-S8-6	6	12/7/2015	<0.50	---	<10	<10	<10	<10
EX-19-S8-9	9	12/7/2015	<0.50	---	11	29	23	52
C00066	---	5/5/2015	<0.50	<1.0	16	97	47	144
C00067	---	5/5/2015	<0.50	<1.0	0.60	30	28	58
C00068	---	5/5/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
C00069	---	5/5/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
C00070	---	5/5/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
C00071	---	5/5/2015	<0.50	<1.0	<1.0	4.8	0.90	5.7
C00072	---	5/5/2015	<0.50	<1.0	6.3	43	26	69
C00073	---	5/5/2015	<0.50	<1.0	7.2	47	24	71
C00074	---	5/5/2015	<0.50	<1.0	15	88	46	134
C00075	---	5/5/2015	<0.50	<1.0	31	196	115	311
C00076	---	5/5/2015	<0.50	<1.0	6.0	36	23	59
C00077	---	5/5/2015	<0.50	<1.0	<1.0	4.4	<1.0	4.4
C00078	---	5/5/2015	<0.50	<1.0	0.65	10	0.80	11
C00079	---	5/5/2015	<0.50	<1.0	<1.0	2.8	<1.0	2.8
C00080	---	5/5/2015	<0.50	<1.0	<1.0	6.3	1.9	8.2
C00081	---	5/5/2015	<0.50	<1.0	11	85	76	161
C00082	---	5/5/2015	<0.50	<1.0	26	153	82	235
C00083	---	5/5/2015	<0.50	<1.0	10	14	4.0	18
C00084	---	5/5/2015	<0.50	<1.0	0.65	8.5	4.3	13
C00086	---	5/5/2015	<0.50	<1.0	17	42	22	65
C00087	---	5/5/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
C00088	---	5/5/2015	<0.50	<1.0	8.4	43	19	63
C00089	---	5/5/2015	<0.50	<1.0	0.85	14	7.5	22
CS-1-69A-L *	Lower	7/1/2015	<0.50	---	<10	<10	<10	<10
CS-1-69A-M *	Middle	7/1/2015	<0.50	---	11	120	140	260
CS-1-71A-L *	Lower	7/1/2015	<0.50	---	<10	33	32	65
CS-1-71A-M *	Middle	7/1/2015	<0.50	---	<10	21	24	45
CS-1-73A-JD *	---	7/1/2015	<0.50	---	13	100	140	240
CS-1-75A-JD *	---	7/1/2015	<0.50	---	<10	87	130	217
CS-1-75-JD *	---	7/1/2015	<0.50	---	13	120	150	270
CS-1-78A-JD *	---	7/1/2015	<0.50	---	<10	21	20	41
CS-1-85-JD *	---	7/1/2015	<0.50	---	53	290	210	500
CS-1-86A-JD *	---	7/1/2015	<0.50	---	37	200	160	360
C00121	---	5/28/2015	<0.50	<1.0	<1.0	4.8	4.3	9.1
C00122	---	5/28/2015	<0.50	<1.0	<1.0	9.2	8.5	18
C00123	---	5/28/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
C00124	---	5/28/2015	<0.50	<1.0	<1.0	5.1	3.6	8.7

Table B-1
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Defense Fuel Support Point Norwalk
15306 Norwalk Boulevard, Norwalk, California

Sample ID	Sample Depth	Date Sampled (ft bgs)	Gasoline Range Organics (GRO) (mg/kg)	Carbon Range (C6-C12) (mg/kg)	Carbon Range (C13-C22) (mg/kg)	Carbon Range (C23-C32) (mg/kg)	Carbon Range (C33-C44) (mg/kg)	Carbon Range (C23-C44) (mg/kg)
RWQCB Site-Specific Soil Cleanup Goal (0.5 feet below ground surface)			500	500	1,000	---	---	10,000
RWQCB Site-Specific Soil Cleanup Goal (5 feet below ground surface)			500	500	1,000	---	---	10,000
RWQCB Site-Specific Soil Cleanup Goal (10 feet below ground surface)			100	100	100	---	---	1,000
C00125	---	5/28/2015	<0.50	<1.0	2.8	21	22	42
C00126	---	5/28/2015	<0.50	<1.0	<1.0	8.1	12	20
C00127	---	5/28/2015	<0.50	<1.0	5.3	29	36	64
C00128	---	5/28/2015	<0.50	<1.0	2.3	21	26	47
C00129	---	5/28/2015	<0.50	<1.0	<1.0	3.2	7.9	11
C00130	---	5/28/2015	<0.50	<1.0	2.7	26	27	53
C00131	---	5/28/2015	<0.50	<1.0	<1.0	2.2	3.7	5.9
C00132	---	5/28/2015	<0.50	<1.0	<1.0	5.4	11	16
C00133	---	5/28/2015	<0.50	<1.0	<1.0	6.5	6.5	13
C00134	---	5/28/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
C00135	---	5/28/2015	<0.50	<1.0	<1.0	1.1	<1.0	1.1
C00136	---	5/28/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
C00137	---	5/28/2015	<0.50	<1.0	<1.0	6.6	6.9	14
C00138	---	5/28/2015	<0.50	<1.0	1.1	14	9.6	23
C00139	---	5/28/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
C00140	---	5/28/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
C00141	---	5/28/2015	<0.50	<1.0	1.0	5.7	0.55	6.2
C00142	---	5/28/2015	<0.50	<1.0	0.95	16	11	27
C00143	---	5/28/2015	<0.50	<1.0	<1.0	2.9	0.65	3.5
C00144	---	5/28/2015	<0.50	<1.0	2.5	16	12	28
C00145	---	5/28/2015	<0.50	<1.0	<1.0	10	10	20
C00146	---	5/28/2015	<0.50	<1.0	<1.0	2.3	0.65	2.9
C00147	---	5/28/2015	<0.50	<1.0	<1.0	7.6	5.1	13
C00148	---	5/28/2015	<0.50	<1.0	<1.0	3.3	0.85	4.1
C00149	---	5/28/2015	<0.50	<1.0	11	67	41	108
CS-2A-126A-JD *	---	7/1/2015	<0.50	---	<10	<10	<10	<10
CS-2A-129A-JD *	---	7/1/2015	<0.50	---	<10	<10	<10	<10
CS-2A-130-JD *	---	7/1/2015	<0.50	---	---	---	---	---
CS-2A-135A-JD *	---	7/1/2015	<0.50	---	<10	<10	<10	<10
CS-2A-138A-JD *	---	7/1/2015	<0.50	---	<10	18	43	61
CS-2A-142-JD *	---	7/1/2015	<0.50	---	---	---	---	---
CS-2A-143A-L *	Lower	7/1/2015	<0.50	---	<10	10	14	24
CS-2A-143A-M *	Middle	7/1/2015	<0.50	---	<10	15	16	31
CS-2A-148A-L *	Lower	7/1/2015	<0.50	---	<10	<10	<10	<10
CS-2A-148A-M *	Middle	7/1/2015	<0.50	---	<10	<10	<10	<10
C00352	---	9/21/2015	<0.50	---	<10	<10	<10	<10
C00353	---	9/21/2015	<0.50	---	<10	59	40	99
C00354	---	9/21/2015	<0.50	---	19	130	170	300
C00356	---	9/21/2015	<0.50	---	<10	12	14	26
C00357	---	9/21/2015	<0.50	---	<10	18	15	33
C00358	---	9/21/2015	<0.50	---	<10	88	160	248
C00359	---	9/21/2015	<0.50	---	<10	34	37	71
C00360	---	9/21/2015	<0.50	---	17	120	160	280
C00361	---	9/21/2015	<0.50	---	<10	12	15	27
C00362	---	9/21/2015	<0.50	---	<10	79	120	199
C00363	---	9/21/2015	<0.50	---	11	49	49	98
C00364	---	9/21/2015	<0.50	---	70	230	270	500

Table B-1
2016 Analytical Results for Gasoline Range Organics and Hydrocarbon Chain Ranges
in Soil (0 to 10 feet bgs)

Defense Fuel Support Point Norwalk
15306 Norwalk Boulevard, Norwalk, California

Sample ID	Sample Depth	Date Sampled (ft bgs)	Gasoline Range Organics (GRO) (mg/kg)	Carbon Range (C6-C12) (mg/kg)	Carbon Range (C13-C22) (mg/kg)	Carbon Range (C23-C32) (mg/kg)	Carbon Range (C33-C44) (mg/kg)	Carbon Range (C23-C44) (mg/kg)
RWQCB Site-Specific Soil Cleanup Goal (0.5 feet below ground surface)			500	500	1,000	---	---	10,000
RWQCB Site-Specific Soil Cleanup Goal (5 feet below ground surface)			500	500	1,000	---	---	10,000
RWQCB Site-Specific Soil Cleanup Goal (10 feet below ground surface)			100	100	100	---	---	1,000
C00365	---	9/21/2015	<0.50	---	<10	41	89	130
C00366	---	9/21/2015	<0.50	---	<10	24	47	71
C00367	---	9/21/2015	<0.50	---	<10	<10	<10	<10
C00368-4.5	---	9/21/2015	<0.50	---	<10	17	38	55
C00369-4.5	---	9/21/2015	<0.50	---	43	250	290	540
C00370	---	9/21/2015	<0.50	---	<10	<10	14	14
C00371	---	9/21/2015	<0.50	---	25	130	150	280
C00372	---	9/21/2015	<0.50	---	<10	48	92	140
C00373	---	9/21/2015	<0.50	---	<10	25	40	65
C00374	---	9/21/2015	<0.50	---	13	120	78	198
C00375	---	9/21/2015	<0.50	---	<10	37	26	63
C00376	---	9/21/2015	<0.50	---	<10	<10	<10	<10
C00377-4.5	---	9/21/2015	<0.50	---	25	130	66	196
C00459 *	---	11/18/2015	<0.50	---	22	200	160	360
C00460 *	---	11/18/2015	<0.50	---	17	150	150	300
C00461 *	---	11/18/2015	<0.50	---	<10	<10	<10	<10
C00462 *	---	11/18/2015	<0.50	---	<10	28	34	62
C00463 *	---	11/18/2015	<0.50	---	13	100	110	210
C00464 *	---	11/18/2015	<0.50	---	55	130	74	204
C00465 *	---	11/18/2015	<0.50	---	27	210	180	390
C00466 *	---	11/18/2015	<0.50	---	<10	<10	<10	<10
C00467 *	---	11/18/2015	<0.50	---	<10	<10	<10	<10
C00468 *	---	11/18/2015	<0.50	---	<10	46	54	100
C00388	---	9/23/2015	<0.50	---	<10	<10	<10	<10
C00389	---	9/23/2015	<0.50	---	<10	<10	<10	<10
C00390	---	9/23/2015	<0.50	---	<10	<10	<10	<10
C00391	---	9/23/2015	<0.50	---	<10	<10	<10	<10
C00392	---	9/23/2015	<0.50	---	<10	<10	<10	<10
C00393	---	9/23/2015	<0.50	---	<10	33	47	80
C00394	---	9/23/2015	<0.50	---	<10	53	82	135
C00395	---	9/23/2015	<0.50	---	19	58	79	137
C00396	---	9/23/2015	<0.50	---	<10	47	57	104
C00397	---	9/23/2015	<0.50	---	<50	86	140	226
C00398	---	9/23/2015	<0.50	---	<10	<10	<10	<10
C00399	---	9/23/2015	<0.50	---	<10	<10	<10	<10
C00400	---	9/23/2015	<0.50	---	83	220	220	440
C00401	---	9/23/2015	<0.50	---	26	150	240	390
C00402	---	9/23/2015	<0.50	---	<10	<10	<10	<10
C00403	---	9/23/2015	<0.50	---	<10	<10	16	16
C00404	---	9/23/2015	<0.50	---	<10	<10	<10	<10
C00405	---	9/23/2015	<0.50	---	<10	<10	14	14

Table B-1
2016 Analytical Results for Gasoline Range Organics and Hydrocarbon Chain Ranges
in Soil (0 to 10 feet bgs)

Defense Fuel Support Point Norwalk
15306 Norwalk Boulevard, Norwalk, California

Sample ID	Sample Depth	Date Sampled (ft bgs)	Gasoline Range Organics (GRO) (mg/kg)	Carbon Range (C6-C12) (mg/kg)	Carbon Range (C13-C22) (mg/kg)	Carbon Range (C23-C32) (mg/kg)	Carbon Range (C33-C44) (mg/kg)	Carbon Range (C23-C44) (mg/kg)
RWQCB Site-Specific Soil Cleanup Goal (0.5 feet below ground surface)			500	500	1,000	---	---	10,000
RWQCB Site-Specific Soil Cleanup Goal (5 feet below ground surface)			500	500	1,000	---	---	10,000
RWQCB Site-Specific Soil Cleanup Goal (10 feet below ground surface)			100	100	100	---	---	1,000
C00406	---	9/23/2015	<0.50	---	<10	<10	<10	<10
C00407	---	9/23/2015	<0.50	---	<10	29	39	68
C00408	---	9/23/2015	<0.50	---	<10	<10	<10	<10
C00294	---	6/4/2015	<0.50	---	66	430	290	720
C00295	---	6/4/2015	<0.50	---	81	400	290	690
C00296	---	6/4/2015	<0.50	---	25	170	190	360
C00297	---	6/4/2015	<0.50	---	18	120	130	250
C00298	---	6/4/2015	<0.50	---	18	130	140	270
C00299	---	6/4/2015	<0.50	---	20	140	150	290
C00300	---	6/4/2015	<0.50	---	<10	<10	<10	<10
C00301	---	6/4/2015	<0.50	---	12	100	120	220
C00302	---	6/4/2015	<0.50	---	18	160	160	320
C00303	---	6/4/2015	<0.50	---	<10	81	85	166
C00304	---	6/4/2015	<0.50	---	21	160	170	330
C00305	---	6/4/2015	<0.50	---	18	170	170	340
C00306	---	6/4/2015	<0.50	---	15	120	130	250
C00307	---	6/4/2015	<0.50	---	14	130	130	260
C00308	---	6/4/2015	<0.50	---	<10	99	110	209
C00309	---	6/4/2015	<0.50	---	24	160	150	310
C00310	---	6/4/2015	<0.50	---	27	200	180	380
C00311	---	6/4/2015	<0.50	---	27	170	160	330
C00312	---	6/4/2015	<0.50	---	62	360	290	650
C00313	---	6/4/2015	<0.50	---	29	220	190	410
C00040	---	4/30/2015	<0.50	1.9	39	150	90	239
C00041	---	4/30/2015	<0.50	<1.0	27	111	67	178
C00042	---	4/30/2015	<0.50	<1.0	23	107	71	177
C00043	---	4/30/2015	<0.50	<1.0	19	90	59	148
C00044	---	4/30/2015	<0.50	<1.0	<1.0	5.7	1.1	6.8
C00045	---	4/30/2015	<0.50	<1.0	31	163	81	244
C00046	---	4/30/2015	<0.50	<1.0	41	187	99	286
C00047	---	4/30/2015	<0.50	<1.0	37	194	97	291
C00048	---	4/30/2015	<0.50	6.4	93	267	109	376
C00049	---	4/30/2015	<0.50	0.55	45	125	87	212
C00050	---	4/30/2015	<0.50	<1.0	17	76	50	126
C00051	---	4/30/2015	<0.50	<1.0	17	90	80	169
C00052	---	4/30/2015	<0.50	<1.0	3.1	24	7.2	31
C00053	---	4/30/2015	<0.50	<1.0	<1.0	1.0	<1.0	1.0
C00054	---	4/30/2015	<0.50	<1.0	4.4	39	26	65
C00055	---	4/30/2015	<0.50	<1.0	18	88	49	137
C00056	---	4/30/2015	<0.50	<1.0	33	153	79	232
C00057	---	4/30/2015	<0.50	0.55	28	250	193	443
C00058	---	4/30/2015	<0.50	<1.0	6.7	49	30	79
C00059	---	4/30/2015	<0.50	<1.0	0.80	26	24	50
C00060	---	4/30/2015	<0.50	<1.0	6.2	132	117	249
C00061	---	4/30/2015	<0.50	<1.0	31	165	89	253

Table B-1
2016 Analytical Results for Gasoline Range Organics and Hydrocarbon Chain Ranges
in Soil (0 to 10 feet bgs)

Defense Fuel Support Point Norwalk
15306 Norwalk Boulevard, Norwalk, California

Sample ID	Sample Depth	Date Sampled (ft bgs)	Gasoline Range Organics (GRO) (mg/kg)	Carbon Range (C6-C12) (mg/kg)	Carbon Range (C13-C22) (mg/kg)	Carbon Range (C23-C32) (mg/kg)	Carbon Range (C33-C44) (mg/kg)	Carbon Range (C23-C44) (mg/kg)
RWQCB Site-Specific Soil Cleanup Goal (0.5 feet below ground surface)			500	500	1,000	---	---	10,000
RWQCB Site-Specific Soil Cleanup Goal (5 feet below ground surface)			500	500	1,000	---	---	10,000
RWQCB Site-Specific Soil Cleanup Goal (10 feet below ground surface)			100	100	100	---	---	1,000
C00062	---	4/30/2015	<0.50	<1.0	46	224	110	334
C00063	---	4/30/2015	<0.50	<1.0	19	107	56	163
C00064	---	4/30/2015	<0.50	<1.0	30	156	88	244
C00065	---	4/30/2015	<0.50	1.1	28	150	97	246
CS-10-40A-JD *	---	7/1/2015	<0.50	---	16	110	120	230
CS-10-42A-L *	Lower	7/1/2015	<0.50	---	26	120	120	240
CS-10-42A-M *	Middle	7/1/2015	<0.50	---	18	130	130	260
CS-10-46A-L *	Lower	7/1/2015	<0.50	---	37	220	220	440
CS-10-46A-M *	Middle	7/1/2015	<0.50	---	56	320	270	590
CS-10-48A-JD *	---	7/1/2015	<0.50	---	---	---	---	---
CS-10-54A-JD *	---	7/1/2015	<0.50	---	<10	29	26	55
CS-10-61A-JD *	---	7/1/2015	<0.50	---	31	190	170	360
CS-10-65-JD *	---	7/1/2015	<0.50	---	---	---	---	---
C00090	---	5/28/2015	<0.50	<1.0	12	68	98	165
C00091	---	5/28/2015	<0.50	<1.0	0.80	13	17	30
C00092	---	5/28/2015	<0.50	<1.0	<1.0	<1.0	1.2	1.2
C00093	---	5/28/2015	<0.50	<1.0	2.6	22	25	47
C00094	---	5/28/2015	<0.50	<1.0	6.0	35	41	76
C00095	---	5/28/2015	<0.50	<1.0	2.1	26	39	65
C00096	---	5/28/2015	<0.50	<1.0	9.2	46	42	88
C00097	---	5/28/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
C00098	---	5/28/2015	<0.50	<1.0	12	32	45	78
C00099	---	5/28/2015	<0.50	<1.0	<1.0	6.7	12	18
C00100	---	5/28/2015	<0.50	<1.0	1.5	11	6.2	17
C00101	---	5/28/2015	<0.50	<1.0	18	58	26	84
C00102	---	5/28/2015	<0.50	<1.0	<1.0	5.7	3.9	10
C00103	---	5/28/2015	<0.50	<1.0	11	58	39	98
C00104	---	5/28/2015	<0.50	<1.0	1.5	28	18	46
C00105	---	5/28/2015	<0.50	<1.0	2.2	20	17	37
C00106	---	5/28/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
C00107	---	5/28/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
C00108	---	5/28/2015	<0.50	<1.0	3.4	25	14	40
C00109	---	5/28/2015	<0.50	<1.0	2.5	18	9.7	27
C00110	---	5/28/2015	<0.50	<1.0	10	52	35	87
C00111	---	5/28/2015	<0.50	<1.0	7.0	39	28	67
C00112	---	5/28/2015	<0.50	<1.0	12	80	51	131
C00113	---	5/28/2015	<0.50	<1.0	<1.0	2.6	<1.0	2.6
C00114	---	5/28/2015	<0.50	<1.0	2.5	17	4.5	22
C00115	---	5/28/2015	<0.50	<1.0	<1.0	1.0	<1.0	1.0
C00116	---	5/28/2015	<0.50	<1.0	2.7	19	9.6	29
C00117	---	5/28/2015	<0.50	<1.0	6.8	36	23	59
C00118	---	5/28/2015	<0.50	<1.0	<1.0	6.0	3.8	10
C00119	---	5/28/2015	<0.50	<1.0	26	109	67	176

Table B-1
2016 Analytical Results for Gasoline Range Organics and Hydrocarbon Chain Ranges
in Soil (0 to 10 feet bgs)

Defense Fuel Support Point Norwalk
15306 Norwalk Boulevard, Norwalk, California

Sample ID	Sample Depth	Date Sampled (ft bgs)	Gasoline Range Organics (GRO) (mg/kg)	Carbon Range (C6-C12) (mg/kg)	Carbon Range (C13-C22) (mg/kg)	Carbon Range (C23-C32) (mg/kg)	Carbon Range (C33-C44) (mg/kg)	Carbon Range (C23-C44) (mg/kg)
RWQCB Site-Specific Soil Cleanup Goal (0.5 feet below ground surface)			500	500	1,000	---	---	10,000
RWQCB Site-Specific Soil Cleanup Goal (5 feet below ground surface)			500	500	1,000	---	---	10,000
RWQCB Site-Specific Soil Cleanup Goal (10 feet below ground surface)			100	100	100	---	---	1,000
C00120	---	5/28/2015	<0.50	<1.0	0.55	10	7.1	17
C00209	---	6/2/2015	<0.50	---	<10	<10	12	12
C00210	---	6/2/2015	<0.50	---	<10	<10	<10	<10
C00211	---	6/2/2015	<0.50	---	<10	<10	<10	<10
C00212	---	6/2/2015	<0.50	---	<10	<10	<10	<10
C00213	---	6/2/2015	<0.50	---	11	100	120	220
C00214	---	6/2/2015	<0.50	---	<10	<10	<10	<10
C00215	---	6/2/2015	<0.50	---	42	62	51	113
C00216	---	6/2/2015	<0.50	---	<10	<10	<10	<10
C00217	---	6/2/2015	<0.50	---	<10	<10	<10	<10
C00218	---	6/2/2015	<0.50	---	<10	<10	<10	<10
C00219	---	6/2/2015	<0.50	---	<10	44	46	90
C00220	---	6/2/2015	<0.50	---	<10	<10	<10	<10
C00221	---	6/2/2015	<0.50	---	<10	25	33	58
C00222	---	6/2/2015	<0.50	---	<10	12	20	32
C00223	---	6/2/2015	<0.50	---	<10	<10	<10	<10
C00224	---	6/2/2015	<0.50	---	<10	<10	<10	<10
C00225	---	6/2/2015	<0.50	---	<10	58	65	123
C00226	---	6/2/2015	<0.50	---	<10	<10	15	15
C00227	---	6/2/2015	<0.50	---	<10	<10	<10	<10
C00228	---	6/2/2015	<0.50	---	<10	29	40	69
C00229	---	6/2/2015	<0.50	---	<10	40	60	100
C00230	---	6/2/2015	<0.50	---	<10	<10	<10	<10
C00231	---	6/2/2015	<0.50	---	13	78	84	162
C00232	---	6/2/2015	<0.50	---	<10	49	58	107
C00233	---	6/2/2015	<0.50	---	<10	52	61	113
C00234	---	6/2/2015	<0.50	---	<10	55	58	113
C00235	---	6/2/2015	<0.50	---	<10	<10	21	21
C00236	---	6/2/2015	<0.50	---	13	83	81	164
C00237	---	6/2/2015	<0.50	---	<10	39	52	91
C00238	---	6/2/2015	<0.50	---	<10	21	32	53
C00239	---	6/2/2015	<0.50	---	<10	<10	<10	<10
C00240	---	6/2/2015	<0.50	---	<10	<10	<10	<10
CS-12-212A-JD *	---	7/1/2015	<0.50	---	<10	<10	<10	<10
CS-12-213-JD *	---	7/1/2015	<0.50	---	---	---	---	---
CS-12-215A-JD *	---	7/1/2015	<0.50	---	<10	<10	19	19
CS-12-218A-JD *	---	7/1/2015	<0.50	---	<10	13	41	54
CS-12-223A-JD *	---	7/1/2015	<0.50	---	<10	25	78	103
CS-12-226A-JD *	---	7/1/2015	<0.50	---	<10	21	53	74
CS-12-233A-L *	Lower	7/1/2015	<0.50	---	<10	20	55	75
CS-12-233A-M *	Middle	7/1/2015	<0.50	---	<10	49	120	169
CS-12-233-JD *	---	7/1/2015	<0.50	---	---	---	---	---
CS-12-236A-L *	Lower	7/1/2015	<0.50	---	<10	61	140	201
CS-12-236A-M *	Middle	7/1/2015	<0.50	---	<10	32	83	115
CS-12-238A-L *	Lower	7/1/2015	<0.50	---	<10	<10	11	11
CS-12-238A-M *	Middle	7/1/2015	<0.50	---	<10	<10	<10	<10
CS-12-240A-JD *	---	7/1/2015	<0.50	---	<10	<10	<10	<10
C00150	---	6/1/2015	<0.50	<1.0	31	40	19	60

Table B-1
2016 Analytical Results for Gasoline Range Organics and Hydrocarbon Chain Ranges
in Soil (0 to 10 feet bgs)

Defense Fuel Support Point Norwalk
15306 Norwalk Boulevard, Norwalk, California

Sample ID	Sample Depth	Date Sampled (ft bgs)	Gasoline Range Organics (GRO) (mg/kg)	Carbon Range (C6-C12) (mg/kg)	Carbon Range (C13-C22) (mg/kg)	Carbon Range (C23-C32) (mg/kg)	Carbon Range (C33-C44) (mg/kg)	Carbon Range (C23-C44) (mg/kg)
RWQCB Site-Specific Soil Cleanup Goal (0.5 feet below ground surface)			500	500	1,000	---	---	10,000
RWQCB Site-Specific Soil Cleanup Goal (5 feet below ground surface)			500	500	1,000	---	---	10,000
RWQCB Site-Specific Soil Cleanup Goal (10 feet below ground surface)			100	100	100	---	---	1,000
C00151	---	6/1/2015	<0.50	<1.0	16	52	26	77
C00152	---	6/1/2015	<0.50	31	46	156	78	234
C00153	---	6/1/2015	<0.50	<1.0	3.0	21	11	32
C00154	---	6/1/2015	<0.50	<1.0	7.5	44	26	70
C00155	---	6/1/2015	<0.50	<1.0	16	80	53	134
C00156	---	6/1/2015	<0.50	<1.0	15	74	43	117
C00157	---	6/1/2015	<0.50	<1.0	17	37	20	57
C00158	---	6/1/2015	<0.50	<1.0	1.7	10	7.2	17
C00159	---	6/1/2015	<0.50	<1.0	1.2	8.2	2.6	11
C00160	---	6/1/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
C00161	---	6/1/2015	<0.50	<1.0	7.9	39	22	61
C00162	---	6/1/2015	<0.50	<1.0	6.1	33	22	54
C00163	---	6/1/2015	<0.50	<1.0	<1.0	7.3	2.8	10
C00164	---	6/1/2015	<0.50	<1.0	3.4	19	9.4	29
C00165	---	6/1/2015	<0.50	<1.0	42	66	29	95
C00166	---	6/1/2015	<0.50	<1.0	7.2	33	16	49
C00167	---	6/1/2015	<0.50	<1.0	3.9	22	8.8	31
C00168	---	6/1/2015	<0.50	<1.0	7.7	52	52	104
C00169	---	6/1/2015	<0.50	1.5	38	122	69	191
C00170	---	6/1/2015	<0.50	<1.0	11	27	28	55
C00171	---	6/1/2015	<0.50	<1.0	14	57	64	121
C00172	---	6/1/2015	<0.50	<1.0	16	20	13	33
C00173	---	6/1/2015	<0.50	<1.0	<1.0	2.8	3.9	6.7
C00174	---	6/1/2015	<0.50	<1.0	14	73	63	136
C00175	---	6/1/2015	<0.50	<1.0	<1.0	2.6	2.3	4.8
C00176	---	6/1/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
C00177	---	6/1/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
C00178	---	6/1/2015	<0.50	<1.0	40	287	286	573
C00179	---	6/1/2015	<0.50	<1.0	6.7	52	49	101
C00180	---	6/1/2015	<0.50	<1.0	<1.0	2.5	0.65	3.1
C00181	---	6/1/2015	<0.50	<1.0	6.3	43	38	81
C00182	---	6/1/2015	<0.50	<1.0	8.9	46	44	90
C00183	---	6/1/2015	<0.50	<1.0	0.70	13	17	30
C00184	---	6/1/2015	<0.50	<1.0	4.0	33	32	65
C00185	---	6/1/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
C00186	---	6/1/2015	<0.50	<1.0	2.7	20	21	41
C00187	---	6/1/2015	<0.50	4.1	59	121	88	209
C00188	---	6/1/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
C00189	---	6/1/2015	<0.50	<1.0	<1.0	8.1	10	18
C00190	---	6/1/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
C00191	---	6/1/2015	<0.50	<1.0	<1.0	1.4	<1.0	1.4
C00192	---	6/1/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
C00193	---	6/1/2015	<0.50	<1.0	<1.0	7.2	2.1	9.3
C00194	---	6/1/2015	<0.50	<1.0	0.65	22	30	52

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Defense Fuel Support Point Norwalk
15306 Norwalk Boulevard, Norwalk, California

Sample ID	Sample Depth	Date Sampled (ft bgs)	Gasoline Range Organics (GRO) (mg/kg)	Carbon Range (C6-C12) (mg/kg)	Carbon Range (C13-C22) (mg/kg)	Carbon Range (C23-C32) (mg/kg)	Carbon Range (C33-C44) (mg/kg)	Carbon Range (C23-C44) (mg/kg)
RWQCB Site-Specific Soil Cleanup Goal (0.5 feet below ground surface)			500	500	1,000	---	---	10,000
RWQCB Site-Specific Soil Cleanup Goal (5 feet below ground surface)			500	500	1,000	---	---	10,000
RWQCB Site-Specific Soil Cleanup Goal (10 feet below ground surface)			100	100	100	---	---	1,000
C00195	---	6/1/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
C00196	---	6/1/2015	<0.50	<1.0	<1.0	0.60	1.6	2.2
C00197	---	6/1/2015	<0.50	<1.0	0.75	13	13	26
C00198	---	6/1/2015	<0.50	<1.0	<1.0	3.0	4.1	7.0
C00199	---	6/1/2015	<0.50	<1.0	<1.0	3.2	2.4	5.5
C00200	---	6/1/2015	<0.50	<1.0	<1.0	3.1	1.8	4.9
C00201	---	6/1/2015	<0.50	<1.0	<1.0	2.7	2.9	5.6
C00202	---	6/1/2015	<0.50	<1.0	33	195	208	402
C00203	---	6/1/2015	<0.50	<1.0	<1.0	1.4	<1.0	1.4
C00204	---	6/1/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
C00205	---	6/1/2015	<0.50	<1.0	0.90	11	10	21
C00206	---	6/1/2015	<0.50	<1.0	<1.0	1.2	<1.0	1.2
C00207	---	6/1/2015	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0
C00208	---	6/1/2015	<0.50	<1.0	10	70	74	144
CS-14-179A-JD *	---	7/1/2015	<0.50	---	11	79	72	151
CS-14-180-JD *	---	7/1/2015	<0.50	---	---	---	---	---
CS-14-183A-JD *	---	7/1/2015	<0.50	---	<10	14	14	28
CS-14-186A-JD *	---	7/1/2015	<0.50	---	<10	34	34	68
CS-14-190A-JD *	---	7/1/2015	<0.50	---	<10	<10	<10	<10
CS-14-193A-JD *	---	7/1/2015	<0.50	---	<10	17	19	36
CS-14-197A-JD *	---	7/1/2015	<0.50	---	<10	<10	<10	<10
CS-14-200A-L *	Lower	7/1/2015	<0.50	---	<10	<10	<10	<10
CS-14-200A-M *	Middle	7/1/2015	<0.50	---	<10	<10	<10	<10
CS-14-202A-L *	Lower	7/1/2015	<0.50	---	22	150	120	270
CS-14-202A-M *	Middle	7/1/2015	<0.50	---	<10	<10	<10	<10
CS-14-202-JD *	---	7/1/2015	<0.50	---	---	---	---	---
CS-14-207A-L *	Lower	7/1/2015	<0.50	---	<10	<10	<10	<10
CS-14-207A-M *	Middle	7/1/2015	<0.50	---	17	85	67	152
C00266	---	6/3/2015	<0.50	---	<10	36	35	71
C00267	---	6/3/2015	<0.50	---	39	190	200	390
C00268	---	6/3/2015	<0.50	---	<10	15	14	29
C00269	---	6/3/2015	<0.50	---	<10	23	21	44
C00270	---	6/3/2015	<0.50	---	<10	<10	<10	<10
C00271	---	6/3/2015	<0.50	---	<10	16	20	36
C00272	---	6/3/2015	<0.50	---	<10	<10	<10	<10
C00273	---	6/3/2015	<0.50	---	<10	64	69	133
C00274	---	6/3/2015	<0.50	---	<10	38	40	78
C00275	---	6/3/2015	<0.50	---	<10	22	28	50
C00276	---	6/3/2015	<0.50	---	<10	21	28	49
C00277	---	6/3/2015	<0.50	---	21	120	130	250
C00278	---	6/3/2015	<0.50	---	<10	<10	<10	<10
C00279	---	6/3/2015	<0.50	---	<10	<10	<10	<10
C00280	---	6/3/2015	<0.50	---	<10	<10	<10	<10
C00281	---	6/3/2015	<0.50	---	<10	24	28	52
C00282	---	6/3/2015	<0.50	---	<10	52	68	120
C00283	---	6/3/2015	<0.50	---	<10	<10	<10	<10

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15306 Norwalk Boulevard, Norwalk, California

Sample ID	Sample Depth	Date Sampled (ft bgs)	Gasoline Range Organics (GRO) (mg/kg)	Carbon Range (C6-C12) (mg/kg)	Carbon Range (C13-C22) (mg/kg)	Carbon Range (C23-C32) (mg/kg)	Carbon Range (C33-C44) (mg/kg)	Carbon Range (C23-C44) (mg/kg)
RWQCB Site-Specific Soil Cleanup Goal (0.5 feet below ground surface)			500	500	1,000	---	---	10,000
RWQCB Site-Specific Soil Cleanup Goal (5 feet below ground surface)			500	500	1,000	---	---	10,000
RWQCB Site-Specific Soil Cleanup Goal (10 feet below ground surface)			100	100	100	---	---	1,000
C00284	---	6/3/2015	<0.50	---	<10	27	35	62
C00285	---	6/4/2015	<0.50	---	<10	<10	<10	<10
C00286	---	6/4/2015	<0.50	---	<10	<10	<10	<10
C00287	---	6/4/2015	<0.50	---	<10	<10	<10	<10
C00288	---	6/4/2015	<0.50	---	47	31	<10	31
C00289	---	6/4/2015	<0.50	---	<10	<10	<10	<10
C00290	---	6/4/2015	<0.50	---	26	35	23	58
C00291	---	6/4/2015	<0.50	---	<10	<10	<10	<10
C00292	---	6/4/2015	<0.50	---	<10	<10	<10	<10
C00293	---	6/4/2015	<0.50	---	<10	<10	<10	<10
C00378	---	9/22/2015	<0.50	---	<10	68	68	136
C00379	---	9/22/2015	<0.50	---	<10	24	31	55
C00381	---	9/22/2015	<0.50	---	<10	22	27	49
C00382	---	9/22/2015	<0.50	---	<10	<10	<10	<31
C00383	---	9/22/2015	<0.50	---	<10	12	14	26
C00384	---	9/22/2015	<0.50	---	17	140	140	280
C00385	---	9/22/2015	<0.50	---	23	190	170	360
C00386	---	9/22/2015	<0.50	---	<10	<10	<10	<31
C00314	---	9/21/2015	<0.50	---	<10	11	13	24
C00315	---	9/21/2015	<0.50	---	<10	47	63	110
C00316	---	9/21/2015	<0.50	---	<10	80	120	200
C00317	---	9/21/2015	<0.50	---	19	160	170	330
C00318	---	9/21/2015	<0.50	---	<10	<10	14	14
C00319	---	9/21/2015	<0.50	---	99	300	280	580
C00320	---	9/21/2015	<0.50	---	<10	<10	<10	<10
C00321	---	9/21/2015	<0.50	---	<10	20	37	57
C00322	---	9/21/2015	<0.50	---	<10	50	76	126
C00323	---	9/21/2015	<0.50	---	60	320	300	620
C00324	---	9/21/2015	<0.50	---	<10	24	37	61
C00325	---	9/21/2015	<0.50	---	<10	<10	12	12
C00326	---	9/21/2015	<0.50	---	<10	<10	<10	<10
C00327	---	9/21/2015	<0.50	---	<10	31	39	70
C00328	---	9/21/2015	<0.50	---	<10	<10	<10	<10
C00329	---	9/21/2015	<0.50	---	<10	11	19	30
C00330	---	9/21/2015	<0.50	---	<10	<10	<10	<10
C00331	---	9/21/2015	<0.50	---	<10	<10	14	14
C00332	---	9/21/2015	<0.50	---	<10	20	25	45
C00333	---	9/21/2015	<0.50	---	<10	17	31	48
C00334	---	9/21/2015	<0.50	---	79	210	98	308
C00335	---	9/21/2015	<0.50	---	13	65	58	123
C00336	---	9/21/2015	<0.50	---	24	110	79	189

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RWQCB Site-Specific Soil Cleanup Goal (0.5 feet below ground surface)			500	500	1,000	---	---	10,000
RWQCB Site-Specific Soil Cleanup Goal (5 feet below ground surface)			500	500	1,000	---	---	10,000
RWQCB Site-Specific Soil Cleanup Goal (10 feet below ground surface)			100	100	100	---	---	1,000
C00337	---	9/21/2015	<0.50	---	<10	30	22	52
C00338	---	9/21/2015	<0.50	---	30	130	92	222
C00339	---	9/21/2015	<0.50	---	37	160	110	270
C00340	---	9/21/2015	<0.50	---	73	160	100	260
C00341	---	9/21/2015	<0.50	---	12	65	51	116
C00342	---	9/21/2015	<0.50	---	11	59	46	105
C00343	---	9/21/2015	<0.50	---	<10	<10	<10	<10
C00344	---	9/21/2015	<0.50	---	<10	46	34	80
C00345	---	9/21/2015	<0.50	---	11	71	35	106
C00346	---	9/21/2015	<0.50	---	<10	20	21	41
C00347	---	9/21/2015	<0.50	---	<10	24	22	46
C00348	---	9/21/2015	<0.50	---	<10	<10	<10	<10
C00349	---	9/21/2015	<0.50	---	<10	<10	<10	<10
C00350	---	9/21/2015	<0.50	---	<10	35	24	59
C00410	---	10/27/2015	<0.50	---	40	160	120	280
C00411	---	10/27/2015	<0.50	---	<10	<10	<10	<10
C00412	---	10/27/2015	<0.50	---	<10	<10	<10	<10
C00413	---	10/27/2015	<0.50	---	<10	39	25	64
C00414	---	10/27/2015	<0.50	---	<10	<10	<10	<10
C00415	---	10/27/2015	<0.50	---	<10	<10	<10	<10
C00416	---	10/27/2015	<0.50	---	<10	<10	<10	<10
C00417	---	10/27/2015	<0.50	---	<10	32	33	65
C00418	---	10/27/2015	<0.50	---	<10	12	<10	12
C00419	---	10/27/2015	<0.50	---	18	89	61	150
C00420	---	10/27/2015	<0.50	---	<10	23	15	38
C00421	---	10/27/2015	<0.50	---	<10	<10	<10	<10
C00422	---	10/27/2015	<0.50	---	14	31	20	51
C00423	---	10/27/2015	<0.50	---	<10	<10	<10	<10
C00424	---	10/27/2015	<0.50	---	<10	<10	<10	<10
C00425	---	10/27/2015	<0.50	---	<10	<10	<10	<10
C00426	---	10/27/2015	<0.50	---	<10	39	30	69
C00427	---	10/27/2015	<0.50	---	13	110	85	195
C00428	---	10/27/2015	<0.50	---	<10	<10	<10	<10
C00429	---	10/27/2015	<0.50	---	<10	<10	<10	<10
C00430	---	10/27/2015	<0.50	---	<10	<10	<10	<10
C00431	---	10/27/2015	<0.50	---	<10	<10	<10	<10
C00432	---	10/27/2015	<0.50	---	67	120	58	178
C00433	---	10/27/2015	<0.50	---	<10	23	17	40
C00434	---	10/27/2015	<0.50	---	<10	33	31	64
C00435	---	10/27/2015	<0.50	---	<10	<10	<10	<10
C00436	---	10/28/2015	<0.50	---	<10	<10	<10	<10

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RWQCB Site-Specific Soil Cleanup Goal (0.5 feet below ground surface)			500	500	1,000	---	---	10,000
RWQCB Site-Specific Soil Cleanup Goal (5 feet below ground surface)			500	500	1,000	---	---	10,000
RWQCB Site-Specific Soil Cleanup Goal (10 feet below ground surface)			100	100	100	---	---	1,000
C00437	---	10/28/2015	<0.50	---	<10	35	22	57
C00438	---	10/28/2015	<0.50	---	<10	<10	<10	<10
C00439	---	10/28/2015	<0.50	---	<10	67	51	118
C00440	---	10/28/2015	<0.50	---	<10	<10	<10	<10
C00441	---	10/28/2015	<0.50	---	<10	27	22	49
C00442	---	10/28/2015	<0.50	---	<10	24	20	44
C00443	---	10/28/2015	<0.50	---	18	99	75	174
C00444	---	10/28/2015	<0.50	---	<10	41	31	72
C00445	---	10/28/2015	<0.50	---	11	74	54	128
C00446	---	10/28/2015	<0.50	---	<10	50	35	85
C00447	---	10/28/2015	<0.50	---	25	140	96	236
C00448	---	10/28/2015	<0.50	---	<10	24	18	42
C00449	---	10/28/2015	<0.50	---	<10	14	<10	14
C00450	---	10/28/2015	<0.50	---	<10	11	<10	11
C00451	---	10/28/2015	<0.50	---	<10	<10	<10	<10
C00452	---	10/28/2015	<0.50	---	<10	<10	<10	<10
C00473	---	12/7/2015	<0.50	---	<10	10	<10	10
C00474	---	12/7/2015	<0.50	---	<10	30	39	69
C00475	---	12/7/2015	<0.50	---	<10	57	63	120
C00476	---	12/7/2015	<0.50	---	<10	43	49	92
C00477	---	12/7/2015	<0.50	---	14	83	71	154
C00478	---	12/7/2015	<0.50	---	<10	26	40	66
C00479	---	12/7/2015	<0.50	---	<10	33	61	94
C00480	---	12/7/2015	<0.50	---	<10	40	50	90
C00481	---	12/7/2015	<0.50	---	<10	10	<10	10
C00482	---	12/7/2015	<0.50	---	<10	88	85	173
C00483	---	12/7/2015	<0.50	---	29	270	210	480
C00484	---	12/7/2015	<0.50	---	10	86	84	170
C00485	---	12/7/2015	<0.50	---	29	170	130	300
C00486	---	12/7/2015	<0.50	---	<10	17	19	36
C00487	---	12/7/2015	<0.50	---	<10	26	28	54
C00488	---	12/7/2015	<0.50	---	22	68	74	142
C00489	---	12/7/2015	<0.50	---	13	110	110	220
C00490	---	12/7/2015	<0.50	---	<10	85	94	179
C00491	---	12/7/2015	<0.50	---	<10	89	110	199
C00492	---	12/7/2015	<0.50	---	12	130	140	270
C00493	---	12/7/2015	<0.50	---	84	150	110	260
C00494	---	12/7/2015	<0.50	---	<10	49	47	96
C00495	---	12/7/2015	<0.50	---	<10	120	86	206
C00496	---	12/7/2015	<0.50	---	<10	180	210	390
C00497	---	12/7/2015	<0.50	---	54	330	210	540

Table B-1
2016 Analytical Results for Gasoline Range Organics and Hydrocarbon Chain Ranges
in Soil (0 to 10 feet bgs)

Defense Fuel Support Point Norwalk
15306 Norwalk Boulevard, Norwalk, California

Sample ID	Sample Depth	Date Sampled (ft bgs)	Gasoline Range Organics (GRO) (mg/kg)	Carbon Range (C6-C12) (mg/kg)	Carbon Range (C13-C22) (mg/kg)	Carbon Range (C23-C32) (mg/kg)	Carbon Range (C33-C44) (mg/kg)	Carbon Range (C23-C44) (mg/kg)
RWQCB Site-Specific Soil Cleanup Goal (0.5 feet below ground surface)			500	500	1,000	---	---	10,000
RWQCB Site-Specific Soil Cleanup Goal (5 feet below ground surface)			500	500	1,000	---	---	10,000
RWQCB Site-Specific Soil Cleanup Goal (10 feet below ground surface)			100	100	100	---	---	1,000
C00498	---	12/7/2015	<0.50	---	30	240	190	430
C00499	---	12/7/2015	<0.50	---	<10	76	91	167
C00500	---	12/7/2015	<0.50	---	11	94	88	182
C00501	---	12/7/2015	<0.50	---	<10	31	47	78
C00502	---	12/7/2015	<0.50	---	<10	50	54	104
C00503	---	12/7/2015	<0.50	---	<10	29	33	62
C00504	---	12/7/2015	<0.50	---	<10	91	92	183
C00506	---	12/7/2015	<0.50	---	<10	53	56	109
C00507	---	12/7/2015	<0.50	---	<10	72	64	136
C00508	---	12/15/2015	<0.50	---	<10	<10	<10	<10
C00509	---	12/15/2015	<0.50	---	<10	20	12	32
C00510	---	12/15/2015	<0.50	---	<10	120	100	220
C00511	---	12/15/2015	<0.50	---	<10	13	12	25
C00512	---	12/15/2015	<0.50	---	<10	58	41	99
C00513	---	12/15/2015	<0.50	---	<10	33	25	58
C00514	---	12/15/2015	<0.50	---	16	10	<10	10
C00515	---	12/15/2015	<0.50	---	<10	11	<10	11
C00516	---	12/15/2015	<0.50	---	<10	30	19	49
C00517	---	12/15/2015	<0.50	---	<10	11	<10	11
C00518	---	12/15/2015	<0.50	---	<10	10	<10	10
C00519	---	12/15/2015	<0.50	---	<10	39	36	75
C00520	---	12/15/2015	<0.50	---	<10	<10	<10	<10
C00521	---	12/15/2015	<0.50	---	<10	13	11	24
C00522	---	12/15/2015	<0.50	---	<10	<10	<10	<10
C00523	---	12/15/2015	<0.50	---	20	160	96	256
C00524	---	12/15/2015	<0.50	---	<10	70	50	120
C00525	---	12/15/2015	<0.50	---	22	380	130	510
C00526	---	12/15/2015	<0.50	---	<10	<10	<10	<10
C00527	---	12/15/2015	<0.50	---	40	23	<10	23
C00528	---	12/15/2015	<0.50	---	<10	37	40	77
C00529	---	12/15/2015	<0.50	---	<10	<10	<10	<10
C00530	---	12/15/2015	<0.50	---	<10	<10	<10	<10
C00532	---	12/15/2015	<0.50	---	13	48	31	79
C00533	---	12/15/2015	<0.50	---	39	200	150	350
C00534	---	12/15/2015	<0.50	---	<10	16	10	26
C00535	---	12/15/2015	<0.50	---	<10	14	<10	14
C00536	---	12/15/2015	<0.50	---	<10	<10	<10	<10
C00537	---	12/15/2015	0.63	---	<10	<10	<10	<10
C00538	---	12/15/2015	<0.50	---	<10	20	<10	20
C00539	---	12/15/2015	0.65	---	12	140	110	250
C00540	---	12/15/2015	<0.50	---	<10	41	30	71

Table B-1
2016 Analytical Results for Gasoline Range Organics and Hydrocarbon Chain Ranges
in Soil (0 to 10 feet bgs)

Defense Fuel Support Point Norwalk
15306 Norwalk Boulevard, Norwalk, California

Sample ID	Sample Depth	Date Sampled (ft bgs)	Gasoline Range Organics (GRO) (mg/kg)	Carbon Range (C6-C12) (mg/kg)	Carbon Range (C13-C22) (mg/kg)	Carbon Range (C23-C32) (mg/kg)	Carbon Range (C33-C44) (mg/kg)	Carbon Range (C23-C44) (mg/kg)
RWQCB Site-Specific Soil Cleanup Goal (0.5 feet below ground surface)			500	500	1,000	---	---	10,000
RWQCB Site-Specific Soil Cleanup Goal (5 feet below ground surface)			500	500	1,000	---	---	10,000
RWQCB Site-Specific Soil Cleanup Goal (10 feet below ground surface)			100	100	100	---	---	1,000
C00541	---	12/15/2015	<0.50	---	99	340	180	520
C00542	---	12/15/2015	<0.50	---	<10	30	20	50
C00543	---	12/15/2015	<0.50	---	14	130	88	218
C00544	---	12/15/2015	1.30	---	70	88	58	146
C00545	---	12/15/2015	<0.50	---	15	28	13	41
C00546	---	12/15/2015	<0.50	---	<10	<10	<10	<10
C00547	---	12/15/2015	<0.50	---	11	30	22	52
C00548	---	12/15/2015	<0.50	---	39	110	86	196
C00549	---	12/15/2015	<0.50	---	57	150	120	270
C00550	---	12/15/2015	<0.50	---	25	61	41	102
C00551	---	12/15/2015	<0.50	---	11	32	24	56
C00552	---	12/15/2015	<0.50	---	36	16	<10	16
C00505-A	---	1/7/2016	<0.50	---	<10	11	<10	11
C00505-B	---	1/7/2016	<0.50	---	<10	<10	<10	<10
C00505-C	---	1/7/2016	<0.50	---	28	77	57	134
C00505-D	---	1/7/2016	<0.50	---	<10	120	170	290
C00531A	---	1/21/2016	<0.50	---	12	87	100	187
C00531B	---	1/21/2016	<0.50	---	<10	<10	<10	<10
C00531C	---	1/21/2016	<0.50	---	<10	<10	<10	<10
C00531D	---	1/21/2016	<0.50	---	15	120	110	230
Number of Samples			952	360	936	936	936	923
Number of Detections			7	18	277	497	470	498
Detection Frequency			1%	5%	30%	53%	50%	54%
Mean			0.77	4.2	30	83	76	154
Standard Deviation			0.26	7.2	54	112	104	202
Minimum Detected Concentration			0.61	0.55	0.55	0.60	0.55	1.0
Maximum Detected Concentration			1.3	31	604	1,200	1,268	1,710

Notes: All concentrations are presented in milligrams per kilogram (mg/kg).
Detections are shown in **bold**.
C13-C22 = carbon chains ranging from C13 through C22.
ft bgs = feet below ground surface.
<10 = not detected at or above the indicated laboratory reporting limit.
RWQCB = Regional Water Quality Control Board.
Hydrocarbon Chain Identification by EPA Method 8015B(M).
GRO by EPA Method 8260B/5035.
-- = not applicable.
* = resampled locations.

Table B-2
2016 Analytical Results for Volatile Organic Compounds (VOCs) in Soil (0 to 10 feet bgs)
 Defense Fuel Support Point Norwalk
 15306 Norwalk Boulevard, Norwalk, California

Sample ID	Sample Depth (ft bgs)	Date Sampled	Acetone (mg/kg)	tert-Amyl Methyl Ether (TAME) (mg/kg)	Benzene (mg/kg)	Bromobenzene (mg/kg)	Bromochloromethane (mg/kg)	Bromodichloromethane (mg/kg)	Bromoform (mg/kg)	Bromomethane (mg/kg)	2-Butanone (MEK) (mg/kg)	tert-Butyl alcohol (TBA) (mg/kg)	sec-Butylbenzene (mg/kg)	tert-Butylbenzene (mg/kg)	n-Butylbenzene (mg/kg)	Carbon Disulfide (mg/kg)	Carbon Tetrachloride (mg/kg)	Chlorobenzene (mg/kg)	Chloroethane (mg/kg)	Chloroform (mg/kg)	Chloromethane (mg/kg)	2-Chlorotoluene (mg/kg)	4-Chlorotoluene (mg/kg)	1,2-Dibromo-3-chloropropane (mg/kg)	Dibromochloromethane (mg/kg)	1,2-Dibromoethane (EDB) (mg/kg)	Dibromomethane (mg/kg)	1,2-Dichlorobenzene (mg/kg)	1,3-Dichlorobenzene (mg/kg)	1,4-Dichlorobenzene (mg/kg)	Dichlorodifluoromethane (R12) (mg/kg)	1,1-Dichloroethane (mg/kg)	1,2-Dichloroethane (EDC) (mg/kg)	trans-1,2-Dichloroethylene (mg/kg)	cis-1,2-Dichloroethylene (mg/kg)	1,1-Dichloroethylene (mg/kg)	1,2-Dichloropropane (mg/kg)	1,3-Dichloropropane (mg/kg)								
RWQCB Site-Specific Soil Cleanup Goal (0.5 feet below ground surface)			0.994	0.005	0.013	0.005	0.005	0.005	0.005	0.005	0.05	0.02	2.22	1.78	3.4	0.046	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005			
RWQCB Site-Specific Soil Cleanup Goal (5 feet below ground surface)			1.28	0.005	0.011	0.005	0.005	0.005	0.005	0.005	0.05	0.02	0.129	0.11	0.179	0.023	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
EX-03-E1-1	1	3/19/2015	<0.050	<0.0050	<0.0020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	

Table B-2
2016 Analytical Results for Volatile Organic Compounds (VOCs) in Soil (0 to 10 feet bgs)
 Defense Fuel Support Point Norwalk
 15306 Norwalk Boulevard, Norwalk, California

Sample ID	Sample Depth (ft bgs)	Date Sampled	Acetone (mg/kg)	tert-Amyl Methyl Ether (TAME) (mg/kg)	Benzene (mg/kg)	Bromobenzene (mg/kg)	Bromochloromethane (mg/kg)	Bromodichloromethane (mg/kg)	Bromoform (mg/kg)	Bromomethane (mg/kg)	2-Butanone (MEK) (mg/kg)	tert-Butyl alcohol (TBA) (mg/kg)	sec-Butylbenzene (mg/kg)	tert-Butylbenzene (mg/kg)	n-Butylbenzene (mg/kg)	Carbon Disulfide (mg/kg)	Carbon Tetrachloride (mg/kg)	Chlorobenzene (mg/kg)	Chloroethane (mg/kg)	Chloroform (mg/kg)	Chloromethane (mg/kg)	2-Chlorotoluene (mg/kg)	4-Chlorotoluene (mg/kg)	1,2-Dibromo-3-chloropropane (mg/kg)	Dibromochloromethane (mg/kg)	1,2-Dibromoethane (EDB) (mg/kg)	Dibromomethane (mg/kg)	1,2-Dichlorobenzene (mg/kg)	1,3-Dichlorobenzene (mg/kg)	1,4-Dichlorobenzene (mg/kg)	Dichlorodifluoromethane (R12) (mg/kg)	1,1-Dichloroethane (mg/kg)	1,2-Dichloroethane (EDC) (mg/kg)	trans-1,2-Dichloroethylene (mg/kg)	cis-1,2-Dichloroethylene (mg/kg)	1,1-Dichloroethylene (mg/kg)	1,2-Dichloropropane (mg/kg)	1,3-Dichloropropane (mg/kg)									
RWQCB Site-Specific Soil Cleanup Goal (0.5 feet below ground surface)			0.994	0.005	0.013	0.005	0.005	0.005	0.005	0.005	0.05	0.02	2.22	1.78	3.4	0.046	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005			
RWQCB Site-Specific Soil Cleanup Goal (5 feet below ground surface)			1.28	0.005	0.011	0.005	0.005	0.005	0.005	0.005	0.05	0.02	0.129	0.11	0.179	0.023	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
EX-4-S2-1	1	4/7/2015	<0.050	<0.0050	<0.0020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	

Table B-2
2016 Analytical Results for Volatile Organic Compounds (VOCs) in Soil (0 to 10 feet bgs)
 Defense Fuel Support Point Norwalk
 15306 Norwalk Boulevard, Norwalk, California

Sample ID	Sample Depth (ft bgs)	Date Sampled	Acetone (mg/kg)	tert-Amyl Methyl Ether (TAME) (mg/kg)	Benzene (mg/kg)	Bromobenzene (mg/kg)	Bromochloromethane (mg/kg)	Bromodichloromethane (mg/kg)	Bromoform (mg/kg)	Bromomethane (mg/kg)	2-Butanone (MEK) (mg/kg)	tert-Butyl alcohol (TBA) (mg/kg)	sec-Butylbenzene (mg/kg)	tert-Butylbenzene (mg/kg)	n-Butylbenzene (mg/kg)	Carbon Disulfide (mg/kg)	Carbon Tetrachloride (mg/kg)	Chlorobenzene (mg/kg)	Chloroethane (mg/kg)	Chloroform (mg/kg)	Chloromethane (mg/kg)	2-Chlorotoluene (mg/kg)	4-Chlorotoluene (mg/kg)	1,2-Dibromo-3-chloropropane (mg/kg)	Dibromochloromethane (mg/kg)	1,2-Dibromoethane (EDB) (mg/kg)	Dibromomethane (mg/kg)	1,2-Dichlorobenzene (mg/kg)	1,3-Dichlorobenzene (mg/kg)	1,4-Dichlorobenzene (mg/kg)	Dichlorodifluoromethane (R12) (mg/kg)	1,1-Dichloroethane (mg/kg)	1,2-Dichloroethane (EDC) (mg/kg)	trans-1,2-Dichloroethylene (mg/kg)	cis-1,2-Dichloroethylene (mg/kg)	1,1-Dichloroethylene (mg/kg)	1,2-Dichloropropane (mg/kg)	1,3-Dichloropropane (mg/kg)						
RWQCB Site-Specific Soil Cleanup Goal (0.5 feet below ground surface)			0.994	0.005	0.013	0.005	0.005	0.005	0.005	0.005	0.05	0.02	2.22	1.78	3.4	0.046	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005		
RWQCB Site-Specific Soil Cleanup Goal (5 feet below ground surface)			1.28	0.005	0.011	0.005	0.005	0.005	0.005	0.005	0.05	0.02	0.129	0.11	0.179	0.023	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
EX-35-W5-3	3	10/20/2015	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
EX-35-S3-3	3	11/17/2015	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
EX-35-S3-6	6	11/17/2015	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050

Table B-2
2016 Analytical Results for Volatile Organic Compounds (VOCs) in Soil (0 to 10 feet bgs)
 Defense Fuel Support Point Norwalk
 15306 Norwalk Boulevard, Norwalk, California

Sample ID	Sample Depth (ft bgs)	Date Sampled	Acetone (mg/kg)	tert-Amyl Methyl Ether (TAME) (mg/kg)	Benzene (mg/kg)	Bromobenzene (mg/kg)	Bromochloromethane (mg/kg)	Bromodichloromethane (mg/kg)	Bromoflorm (mg/kg)	Bromomethane (mg/kg)	2-Butanone (MEK) (mg/kg)	tert-Butyl alcohol (TBA) (mg/kg)	sec-Butylbenzene (mg/kg)	tert-Butylbenzene (mg/kg)	n-Butylbenzene (mg/kg)	Carbon Disulfide (mg/kg)	Carbon Tetrachloride (mg/kg)	Chlorobenzene (mg/kg)	Chloroethane (mg/kg)	Chloroform (mg/kg)	Chloromethane (mg/kg)	2-Chlorotoluene (mg/kg)	4-Chlorotoluene (mg/kg)	1,2-Dibromo-3-chloropropane (mg/kg)	Dibromochloromethane (mg/kg)	1,2-Dibromoethane (EDB) (mg/kg)	Dibromomethane (mg/kg)	1,2-Dichlorobenzene (mg/kg)	1,3-Dichlorobenzene (mg/kg)	1,4-Dichlorobenzene (mg/kg)	Dichlorodifluoromethane (R12) (mg/kg)	1,1-Dichloroethane (mg/kg)	1,2-Dichloroethane (EDC) (mg/kg)	trans-1,2-Dichloroethylene (mg/kg)	cis-1,2-Dichloroethylene (mg/kg)	1,1-Dichloroethylene (mg/kg)	1,2-Dichloropropane (mg/kg)	1,3-Dichloropropane (mg/kg)					
RWQCB Site-Specific Soil Cleanup Goal (0.5 feet below ground surface)			0.994	0.005	0.013	0.005	0.005	0.005	0.005	0.005	0.05	0.02	2.22	1.78	3.4	0.046	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005		
RWQCB Site-Specific Soil Cleanup Goal (5 feet below ground surface)			1.28	0.005	0.011	0.005	0.005	0.005	0.005	0.005	0.05	0.02	0.129	0.11	0.179	0.023	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
EX-35-S3-9	9	11/17/2015	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
EX-19-N7-9	9	9/1/2015	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	

Table B-2
2016 Analytical Results for Volatile Organic Compounds (VOCs) in Soil (0 to 10 feet bgs)
 Defense Fuel Support Point Norwalk
 15306 Norwalk Boulevard, Norwalk, California

Sample ID	Sample Depth (ft bgs)	Date Sampled	Acetone (mg/kg)	tert-Amyl Methyl Ether (TAME) (mg/kg)	Benzene (mg/kg)	Bromobenzene (mg/kg)	Bromochloromethane (mg/kg)	Bromodichloromethane (mg/kg)	Bromoform (mg/kg)	Bromomethane (mg/kg)	2-Butanone (MEK) (mg/kg)	tert-Butyl alcohol (TBA) (mg/kg)	sec-Butylbenzene (mg/kg)	tert-Butylbenzene (mg/kg)	n-Butylbenzene (mg/kg)	Carbon Disulfide (mg/kg)	Carbon Tetrachloride (mg/kg)	Chlorobenzene (mg/kg)	Chloroethane (mg/kg)	Chloroform (mg/kg)	Chloromethane (mg/kg)	2-Chlorotoluene (mg/kg)	4-Chlorotoluene (mg/kg)	1,2-Dibromo-3-chloropropane (mg/kg)	Dibromochloromethane (mg/kg)	1,2-Dibromoethane (EDB) (mg/kg)	Dibromomethane (mg/kg)	1,2-Dichlorobenzene (mg/kg)	1,3-Dichlorobenzene (mg/kg)	1,4-Dichlorobenzene (mg/kg)	Dichlorodifluoromethane (R12) (mg/kg)	1,1-Dichloroethane (mg/kg)	1,2-Dichloroethane (EDC) (mg/kg)	trans-1,2-Dichloroethylene (mg/kg)	cis-1,2-Dichloroethylene (mg/kg)	1,1-Dichloroethylene (mg/kg)	1,2-Dichloropropane (mg/kg)	1,3-Dichloropropane (mg/kg)						
RWQCB Site-Specific Soil Cleanup Goal (0.5 feet below ground surface)			0.994	0.005	0.013	0.005	0.005	0.005	0.005	0.005	0.05	0.02	2.22	1.78	3.4	0.046	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005		
RWQCB Site-Specific Soil Cleanup Goal (5 feet below ground surface)			1.28	0.005	0.011	0.005	0.005	0.005	0.005	0.005	0.05	0.02	0.129	0.11	0.179	0.023	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
EX-19-E1-6	6	12/7/2015	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
C00066	---	5/5/2015	<0.050	<0.0050	<0.0020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
C00083	---	5/5/2015	<0.050	<0.0050	<0.0020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	

Table B-2
2016 Analytical Results for Volatile Organic Compounds (VOCs) in Soil (0 to 10 feet bgs)
 Defense Fuel Support Point Norwalk
 15306 Norwalk Boulevard, Norwalk, California

Sample ID	Sample Depth (ft bgs)	Date Sampled	2,2-Dichloropropane (mg/kg)	1,1-Dichloropropylene (mg/kg)	trans-1,3-Dichloropropylene (mg/kg)	cis-1,3-Dichloropropylene (mg/kg)	Diisopropyl ether (DIPE) (mg/kg)	Ethylbenzene (mg/kg)	Ethyl-tert-Butyl Ether (ETBE) (mg/kg)	Hexachlorobutadiene (mg/kg)	2-Hexanone (MEK) (mg/kg)	Isopropylbenzene (mg/kg)	4-Isopropyltoluene (mg/kg)	4-Methyl-2-pentanone (MIBK) (mg/kg)	Methylene Chloride (mg/kg)	Methyl-tert-Butyl Ether (MTBE) (mg/kg)	Naphthalene (mg/kg)	n-Propylbenzene (mg/kg)	Styrene (mg/kg)	1,1,1,2-Tetrachloroethane (mg/kg)	1,1,2,2-Tetrachloroethane (mg/kg)	Tetrachloroethylene (PCE) (mg/kg)	Toluene (mg/kg)	1,1,2-Trichloro-1,2,2-trifluoroethane (R113) (mg/kg)	1,2,3-Trichlorobenzene (mg/kg)	1,2,4-Trichlorobenzene (mg/kg)	1,1,1-Trichloroethane (mg/kg)	1,1,2-Trichloroethane (mg/kg)	Trichloroethylene (TCE) (mg/kg)	Trichlorofluoromethane (R11) (mg/kg)	1,2,3-Trichloropropane (mg/kg)	1,2,4-Trimethylbenzene (mg/kg)	1,3,5-Trimethylbenzene (mg/kg)	Vinyl Chloride (mg/kg)	o-Xylene (mg/kg)	m,p-Xylenes (mg/kg)	Gasoline Range Organics (GRO) (mg/kg)		
RWQCB Site-Specific Soil Cleanup Goal (0.5 feet below ground surface)			0.005	0.005	0.005	0.005	0.424	1.44	0.005	0.01	0.05	4.78	0.005	0.05	0.05	0.005	0.231	1.87	0.399	0.005	0.005	0.005	0.444	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	1.8	1.77	0.005	--	--	500	
RWQCB Site-Specific Soil Cleanup Goal (5 feet below ground surface)			0.005	0.005	0.005	0.005	0.212	1.07	0.005	0.01	0.05	0.303	0.005	0.05	0.05	0.005	0.012	0.114	0.03	0.005	0.005	0.005	0.356	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.12	0.118	0.005	--	--	100
EX-19-E1-6	6	12/7/2015	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0050	<0.010	<0.050	<0.0050	<0.0050	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0020	<0.0020	<0.50

Table B-2
2016 Analytical Results for Volatile Organic Compounds (VOCs) in Soil (0 to 10 feet bgs)
 Defense Fuel Support Point Norwalk
 15306 Norwalk Boulevard, Norwalk, California

Sample ID	Sample Depth (ft bgs)	Date Sampled	Acetone (mg/kg)	tert-Amyl Methyl Ether (TAME) (mg/kg)	Benzene (mg/kg)	Bromobenzene (mg/kg)	Bromochloromethane (mg/kg)	Bromodichloromethane (mg/kg)	Bromoform (mg/kg)	Bromomethane (mg/kg)	2-Butanone (MEK) (mg/kg)	tert-Butyl alcohol (TBA) (mg/kg)	sec-Butylbenzene (mg/kg)	tert-Butylbenzene (mg/kg)	n-Butylbenzene (mg/kg)	Carbon Disulfide (mg/kg)	Carbon Tetrachloride (mg/kg)	Chlorobenzene (mg/kg)	Chloroethane (mg/kg)	Chloroform (mg/kg)	Chloromethane (mg/kg)	2-Chlorotoluene (mg/kg)	4-Chlorotoluene (mg/kg)	1,2-Dibromo-3-chloropropane (mg/kg)	Dibromochloromethane (mg/kg)	1,2-Dibromoethane (EDB) (mg/kg)	Dibromomethane (mg/kg)	1,2-Dichlorobenzene (mg/kg)	1,3-Dichlorobenzene (mg/kg)	1,4-Dichlorobenzene (mg/kg)	Dichlorodifluoromethane (R12) (mg/kg)	1,1-Dichloroethane (mg/kg)	1,2-Dichloroethane (EDC) (mg/kg)	trans-1,2-Dichloroethylene (mg/kg)	cis-1,2-Dichloroethylene (mg/kg)	1,1-Dichloroethylene (mg/kg)	1,2-Dichloropropane (mg/kg)	1,3-Dichloropropane (mg/kg)									
RWQCB Site-Specific Soil Cleanup Goal (0.5 feet below ground surface)			0.994	0.005	0.013	0.005	0.005	0.005	0.005	0.005	0.05	0.02	2.22	1.78	3.4	0.046	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005					
RWQCB Site-Specific Soil Cleanup Goal (5 feet below ground surface)			1.28	0.005	0.011	0.005	0.005	0.005	0.005	0.005	0.05	0.02	0.129	0.11	0.179	0.023	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005		
C00084	---	5/5/2015	<0.050	<0.0050	<0.0020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050		
C00352	---	9/21/2015	0.063	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050		
C00353	---	9/21/2015	0.076	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050		
C00354	---	9/21/2015	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
C00355	---	9/21/2015	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
C00356	---	9/21/2015	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
C00357	---	9/21/2015	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
C00358	---	9/21/2015	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
C00359	---	9/21/2015	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
C00360	---	9/21/2015	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050

Table B-2
2016 Analytical Results for Volatile Organic Compounds (VOCs) in Soil (0 to 10 feet bgs)
 Defense Fuel Support Point Norwalk
 15306 Norwalk Boulevard, Norwalk, California

Sample ID	Sample Depth (ft bgs)	Date Sampled	Acetone (mg/kg)	tert-Amyl Methyl Ether (TAME) (mg/kg)	Benzene (mg/kg)	Bromobenzene (mg/kg)	Bromochloromethane (mg/kg)	Bromodichloromethane (mg/kg)	Bromoform (mg/kg)	Bromomethane (mg/kg)	2-Butanone (MEK) (mg/kg)	tert-Butyl alcohol (TBA) (mg/kg)	sec-Butylbenzene (mg/kg)	tert-Butylbenzene (mg/kg)	n-Butylbenzene (mg/kg)	Carbon Disulfide (mg/kg)	Carbon Tetrachloride (mg/kg)	Chlorobenzene (mg/kg)	Chloroethane (mg/kg)	Chloroform (mg/kg)	Chloromethane (mg/kg)	2-Chlorotoluene (mg/kg)	4-Chlorotoluene (mg/kg)	1,2-Dibromo-3-chloropropane (mg/kg)	Dibromochloromethane (mg/kg)	1,2-Dibromoethane (EDB) (mg/kg)	Dibromomethane (mg/kg)	1,2-Dichlorobenzene (mg/kg)	1,3-Dichlorobenzene (mg/kg)	1,4-Dichlorobenzene (mg/kg)	Dichlorodifluoromethane (R12) (mg/kg)	1,1-Dichloroethane (mg/kg)	1,2-Dichloroethane (EDC) (mg/kg)	trans-1,2-Dichloroethylene (mg/kg)	cis-1,2-Dichloroethylene (mg/kg)	1,1-Dichloroethylene (mg/kg)	1,2-Dichloropropane (mg/kg)	1,3-Dichloropropane (mg/kg)							
RWQCB Site-Specific Soil Cleanup Goal (0.5 feet below ground surface)			0.994	0.005	0.013	0.005	0.005	0.005	0.005	0.005	0.05	0.02	2.22	1.78	3.4	0.046	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005			
RWQCB Site-Specific Soil Cleanup Goal (5 feet below ground surface)			1.28	0.005	0.011	0.005	0.005	0.005	0.005	0.005	0.05	0.02	0.129	0.11	0.179	0.023	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
C00361	---	9/21/2015	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
C00043	---	4/30/2015	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050

Table B-2
2016 Analytical Results for Volatile Organic Compounds (VOCs) in Soil (0 to 10 feet bgs)
 Defense Fuel Support Point Norwalk
 15306 Norwalk Boulevard, Norwalk, California

Sample ID	Sample Depth (ft bgs)	Date Sampled	Acetone (mg/kg)	tert-Amyl Methyl Ether (TAME) (mg/kg)	Benzene (mg/kg)	Bromobenzene (mg/kg)	Bromochloromethane (mg/kg)	Bromodichloromethane (mg/kg)	Bromoform (mg/kg)	Bromomethane (mg/kg)	2-Butanone (MEK) (mg/kg)	tert-Butyl alcohol (TBA) (mg/kg)	sec-Butylbenzene (mg/kg)	tert-Butylbenzene (mg/kg)	n-Butylbenzene (mg/kg)	Carbon Disulfide (mg/kg)	Carbon Tetrachloride (mg/kg)	Chlorobenzene (mg/kg)	Chloroethane (mg/kg)	Chloroform (mg/kg)	Chloromethane (mg/kg)	2-Chlorotoluene (mg/kg)	4-Chlorotoluene (mg/kg)	1,2-Dibromo-3-chloropropane (mg/kg)	Dibromochloromethane (mg/kg)	1,2-Dibromoethane (EDB) (mg/kg)	Dibromomethane (mg/kg)	1,2-Dichlorobenzene (mg/kg)	1,3-Dichlorobenzene (mg/kg)	1,4-Dichlorobenzene (mg/kg)	Dichlorodifluoromethane (R12) (mg/kg)	1,1-Dichloroethane (mg/kg)	1,2-Dichloroethane (EDC) (mg/kg)	trans-1,2-Dichloroethylene (mg/kg)	cis-1,2-Dichloroethylene (mg/kg)	1,1-Dichloroethylene (mg/kg)	1,2-Dichloropropane (mg/kg)	1,3-Dichloropropane (mg/kg)					
RWQCB Site-Specific Soil Cleanup Goal (0.5 feet below ground surface)			0.994	0.005	0.013	0.005	0.005	0.005	0.005	0.005	0.05	0.02	2.22	1.78	3.4	0.046	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005		
RWQCB Site-Specific Soil Cleanup Goal (5 feet below ground surface)			1.28	0.005	0.011	0.005	0.005	0.005	0.005	0.005	0.05	0.02	0.129	0.11	0.179	0.023	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
C00044	---	4/30/2015	<0.050	<0.0050	<0.0020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
C00118	---	5/28/2015	<0.050	<0.0050	<0.0020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
C00119	---	5/28/2015	<0.050	<0.0050	<0.0020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
C00120	---	5/28/2015	<0.050	<0.0050	<0.0020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050

Table B-2
2016 Analytical Results for Volatile Organic Compounds (VOCs) in Soil (0 to 10 feet bgs)
 Defense Fuel Support Point Norwalk
 15306 Norwalk Boulevard, Norwalk, California

Sample ID	Sample Depth (ft bgs)	Date Sampled	2,2-Dichloropropane (mg/kg)	1,1-Dichloropropylene (mg/kg)	trans-1,3-Dichloropropylene (mg/kg)	cis-1,3-Dichloropropylene (mg/kg)	Diisopropyl ether (DIPE) (mg/kg)	Ethylbenzene (mg/kg)	Ethyl-tert-Butyl Ether (ETBE) (mg/kg)	Hexachlorobutadiene (mg/kg)	2-Hexanone (MEK) (mg/kg)	Isopropylbenzene (mg/kg)	4-Isopropyltoluene (mg/kg)	4-Methyl-2-pentanone (MIBK) (mg/kg)	Methylene Chloride (mg/kg)	Methyl-tert-Butyl Ether (MTBE) (mg/kg)	Naphthalene (mg/kg)	n-Propylbenzene (mg/kg)	Styrene (mg/kg)	1,1,1,2-Tetrachloroethane (mg/kg)	1,1,2,2-Tetrachloroethane (mg/kg)	Tetrachloroethylene (PCE) (mg/kg)	Toluene (mg/kg)	1,1,2-Trichloro-1,2,2-trifluoroethane (R113) (mg/kg)	1,2,3-Trichlorobenzene (mg/kg)	1,2,4-Trichlorobenzene (mg/kg)	1,1,1-Trichloroethane (mg/kg)	1,1,2-Trichloroethane (mg/kg)	Trichloroethylene (TCE) (mg/kg)	Trichlorofluoromethane (R11) (mg/kg)	1,2,3-Trichloropropane (mg/kg)	1,2,4-Trimethylbenzene (mg/kg)	1,3,5-Trimethylbenzene (mg/kg)	Vinyl Chloride (mg/kg)	o-Xylene (mg/kg)	m,p-Xylenes (mg/kg)	Gasoline Range Organics (GRO) (mg/kg)			
RWQCB Site-Specific Soil Cleanup Goal (0.5 feet below ground surface)			0.005	0.005	0.005	0.005	0.424	1.44	0.005	0.01	0.05	4.78	0.005	0.05	0.05	0.005	0.231	1.87	0.399	0.005	0.005	0.005	0.444	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	1.8	1.77	0.005	--	--	500		
RWQCB Site-Specific Soil Cleanup Goal (5 feet below ground surface)			0.005	0.005	0.005	0.005	0.212	1.07	0.005	0.01	0.05	0.303	0.005	0.05	0.05	0.005	0.012	0.114	0.03	0.005	0.005	0.005	0.356	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.12	0.118	0.005	--	--	100		
C00044	---	4/30/2015	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0050	<0.010	<0.050	<0.0050	<0.0050	<0.050	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0020	<0.0020	<0.50	
C00120	---	5/28/2015	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0050	<0.010	<0.050	<0.0050	<0.0050	<0.050	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0020	<0.0020	<0.50

Table B-2
2016 Analytical Results for Volatile Organic Compounds (VOCs) in Soil (0 to 10 feet bgs)
 Defense Fuel Support Point Norwalk
 15306 Norwalk Boulevard, Norwalk, California

Sample ID	Sample Depth (ft bgs)	Date Sampled	Acetone (mg/kg)	tert-Amyl Methyl Ether (TAME) (mg/kg)	Benzene (mg/kg)	Bromobenzene (mg/kg)	Bromochloromethane (mg/kg)	Bromodichloromethane (mg/kg)	Bromofluoromethane (mg/kg)	Bromomethane (mg/kg)	2-Butanone (MEK) (mg/kg)	tert-Butyl alcohol (TBA) (mg/kg)	sec-Butylbenzene (mg/kg)	tert-Butylbenzene (mg/kg)	n-Butylbenzene (mg/kg)	Carbon Disulfide (mg/kg)	Carbon Tetrachloride (mg/kg)	Chlorobenzene (mg/kg)	Chloroethane (mg/kg)	Chloroform (mg/kg)	Chloromethane (mg/kg)	2-Chlorotoluene (mg/kg)	4-Chlorotoluene (mg/kg)	1,2-Dibromo-3-chloropropane (mg/kg)	Dibromochloromethane (mg/kg)	1,2-Dibromoethane (EDB) (mg/kg)	Dibromomethane (mg/kg)	1,2-Dichlorobenzene (mg/kg)	1,3-Dichlorobenzene (mg/kg)	1,4-Dichlorobenzene (mg/kg)	Dichlorodifluoromethane (R12) (mg/kg)	1,1-Dichloroethane (mg/kg)	1,2-Dichloroethane (EDC) (mg/kg)	trans-1,2-Dichloroethylene (mg/kg)	cis-1,2-Dichloroethylene (mg/kg)	1,1-Dichloroethylene (mg/kg)	1,2-Dichloropropane (mg/kg)	1,3-Dichloropropane (mg/kg)						
RWQCB Site-Specific Soil Cleanup Goal (0.5 feet below ground surface)			0.994	0.005	0.013	0.005	0.005	0.005	0.005	0.005	0.05	0.02	2.22	1.78	3.4	0.046	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005		
RWQCB Site-Specific Soil Cleanup Goal (5 feet below ground surface)			1.28	0.005	0.011	0.005	0.005	0.005	0.005	0.005	0.05	0.02	0.129	0.11	0.179	0.023	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
C00209	---	6/2/2015	<0.050	<0.0050	<0.0020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
C00165	---	6/1/2015	<0.050	<0.0050	<0.0020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050

Table B-2
2016 Analytical Results for Volatile Organic Compounds (VOCs) in Soil (0 to 10 feet bgs)
 Defense Fuel Support Point Norwalk
 15306 Norwalk Boulevard, Norwalk, California

Sample ID	Sample Depth (ft bgs)	Date Sampled	2,2-Dichloropropane (mg/kg)	1,1-Dichloroethylene (mg/kg)	trans-1,3-Dichloroethylene (mg/kg)	cis-1,3-Dichloroethylene (mg/kg)	Diisopropyl ether (DIPE) (mg/kg)	Ethylbenzene (mg/kg)	Ethyl-tert-Butyl Ether (ETBE) (mg/kg)	Hexachlorobutadiene (mg/kg)	2-Hexanone (MEK) (mg/kg)	Isopropylbenzene (mg/kg)	4-Isopropyltoluene (mg/kg)	4-Methyl-2-pentanone (MIBK) (mg/kg)	Methylene Chloride (mg/kg)	Methyl-tert-Butyl Ether (MTBE) (mg/kg)	Naphthalene (mg/kg)	n-Propylbenzene (mg/kg)	Styrene (mg/kg)	1,1,1,2-Tetrachloroethane (mg/kg)	1,1,2,2-Tetrachloroethane (mg/kg)	Tetrachloroethylene (PCE) (mg/kg)	Toluene (mg/kg)	1,1,2-Trichloro-1,2,2-trifluoroethane (R113) (mg/kg)	1,2,3-Trichlorobenzene (mg/kg)	1,2,4-Trichlorobenzene (mg/kg)	1,1,1-Trichloroethane (mg/kg)	1,1,2-Trichloroethane (mg/kg)	Trichloroethylene (TCE) (mg/kg)	Trichlorofluoromethane (R11) (mg/kg)	1,2,3-Trichloropropane (mg/kg)	1,2,4-Trimethylbenzene (mg/kg)	1,3,5-Trimethylbenzene (mg/kg)	Vinyl Chloride (mg/kg)	o-Xylene (mg/kg)	m,p-Xylenes (mg/kg)	Gasoline Range Organics (GRO) (mg/kg)			
RWQCB Site-Specific Soil Cleanup Goal (0.5 feet below ground surface)			0.005	0.005	0.005	0.005	0.424	1.44	0.005	0.01	0.05	4.78	0.005	0.05	0.05	0.005	0.231	1.87	0.399	0.005	0.005	0.005	0.444	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	1.8	1.77	0.005	--	--	500	
RWQCB Site-Specific Soil Cleanup Goal (5 feet below ground surface)			0.005	0.005	0.005	0.005	0.212	1.07	0.005	0.01	0.05	0.303	0.005	0.05	0.05	0.005	0.012	0.114	0.03	0.005	0.005	0.005	0.356	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.12	0.118	0.005	--	--	100		
C00209	---	6/2/2015	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0050	<0.010	<0.050	<0.0050	<0.0050	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0020	<0.0020	<0.50	
C00165	---	6/1/2015	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0050	<0.010	<0.050	<0.0050	<0.0050	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0020	<0.0020	<0.50

Table B-2
2016 Analytical Results for Volatile Organic Compounds (VOCs) in Soil (0 to 10 feet bgs)
 Defense Fuel Support Point Norwalk
 15306 Norwalk Boulevard, Norwalk, California

Sample ID	Sample Depth (ft bgs)	Date Sampled	Acetone (mg/kg)	tert-Amyl Methyl Ether (TAME) (mg/kg)	Benzene (mg/kg)	Bromobenzene (mg/kg)	Bromochloromethane (mg/kg)	Bromodichloromethane (mg/kg)	Bromoform (mg/kg)	Bromomethane (mg/kg)	2-Butanone (MEK) (mg/kg)	tert-Butyl alcohol (TBA) (mg/kg)	sec-Butylbenzene (mg/kg)	tert-Butylbenzene (mg/kg)	n-Butylbenzene (mg/kg)	Carbon Disulfide (mg/kg)	Carbon Tetrachloride (mg/kg)	Chlorobenzene (mg/kg)	Chloroethane (mg/kg)	Chloroform (mg/kg)	Chloromethane (mg/kg)	2-Chlorotoluene (mg/kg)	4-Chlorotoluene (mg/kg)	1,2-Dibromo-3-chloropropane (mg/kg)	Dibromochloromethane (mg/kg)	1,2-Dibromoethane (EDB) (mg/kg)	Dibromomethane (mg/kg)	1,2-Dichlorobenzene (mg/kg)	1,3-Dichlorobenzene (mg/kg)	1,4-Dichlorobenzene (mg/kg)	Dichlorodifluoromethane (R12) (mg/kg)	1,1-Dichloroethane (mg/kg)	1,2-Dichloroethane (EDC) (mg/kg)	trans-1,2-Dichloroethylene (mg/kg)	cis-1,2-Dichloroethylene (mg/kg)	1,1-Dichloroethylene (mg/kg)	1,2-Dichloropropane (mg/kg)	1,3-Dichloropropane (mg/kg)					
RWQCB Site-Specific Soil Cleanup Goal (0.5 feet below ground surface)			0.994	0.005	0.013	0.005	0.005	0.005	0.005	0.005	0.05	0.02	2.22	1.78	3.4	0.046	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005		
RWQCB Site-Specific Soil Cleanup Goal (5 feet below ground surface)			1.28	0.005	0.011	0.005	0.005	0.005	0.005	0.005	0.05	0.02	0.129	0.11	0.179	0.023	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
C00166	---	6/1/2015	<0.050	<0.0050	<0.0020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
C00270	---	6/3/2015	<0.050	<0.0050	<0.0020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050

Table B-2
2016 Analytical Results for Volatile Organic Compounds (VOCs) in Soil (0 to 10 feet bgs)
 Defense Fuel Support Point Norwalk
 15306 Norwalk Boulevard, Norwalk, California

Sample ID	Sample Depth (ft bgs)	Date Sampled	Acetone (mg/kg)	tert-Amyl Methyl Ether (TAME) (mg/kg)	Benzene (mg/kg)	Bromobenzene (mg/kg)	Bromochloromethane (mg/kg)	Bromodichloromethane (mg/kg)	Bromoform (mg/kg)	Bromomethane (mg/kg)	2-Butanone (MEK) (mg/kg)	tert-Butyl alcohol (TBA) (mg/kg)	sec-Butylbenzene (mg/kg)	tert-Butylbenzene (mg/kg)	n-Butylbenzene (mg/kg)	Carbon Disulfide (mg/kg)	Carbon Tetrachloride (mg/kg)	Chlorobenzene (mg/kg)	Chloroethane (mg/kg)	Chloroform (mg/kg)	Chloromethane (mg/kg)	2-Chlorotoluene (mg/kg)	4-Chlorotoluene (mg/kg)	1,2-Dibromo-3-chloropropane (mg/kg)	Dibromochloromethane (mg/kg)	1,2-Dibromoethane (EDB) (mg/kg)	Dibromomethane (mg/kg)	1,2-Dichlorobenzene (mg/kg)	1,3-Dichlorobenzene (mg/kg)	1,4-Dichlorobenzene (mg/kg)	Dichlorodifluoromethane (R12) (mg/kg)	1,1-Dichloroethane (mg/kg)	1,2-Dichloroethane (EDC) (mg/kg)	trans-1,2-Dichloroethylene (mg/kg)	cis-1,2-Dichloroethylene (mg/kg)	1,1-Dichloroethylene (mg/kg)	1,2-Dichloropropane (mg/kg)	1,3-Dichloropropane (mg/kg)							
RWQCB Site-Specific Soil Cleanup Goal (0.5 feet below ground surface)			0.994	0.005	0.013	0.005	0.005	0.005	0.005	0.005	0.05	0.02	2.22	1.78	3.4	0.046	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005			
RWQCB Site-Specific Soil Cleanup Goal (5 feet below ground surface)			1.28	0.005	0.011	0.005	0.005	0.005	0.005	0.005	0.05	0.02	0.129	0.11	0.179	0.023	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
C00271	---	6/3/2015	<0.050	<0.0050	<0.0020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
C00343	---	9/21/2015	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050

Table B-2
2016 Analytical Results for Volatile Organic Compounds (VOCs) in Soil (0 to 10 feet bgs)
 Defense Fuel Support Point Norwalk
 15306 Norwalk Boulevard, Norwalk, California

Sample ID	Sample Depth (ft bgs)	Date Sampled	2,2-Dichloropropane (mg/kg)	1,1-Dichloropropylene (mg/kg)	trans-1,3-Dichloropropylene (mg/kg)	cis-1,3-Dichloropropylene (mg/kg)	Diisopropyl ether (DIPE) (mg/kg)	Ethylbenzene (mg/kg)	Ethyl-tert-Butyl Ether (ETBE) (mg/kg)	Hexachlorobutadiene (mg/kg)	2-Hexanone (MBK) (mg/kg)	Isopropylbenzene (mg/kg)	4-Isopropyltoluene (mg/kg)	4-Methyl-2-pentanone (MIBK) (mg/kg)	Methylene Chloride (mg/kg)	Methyl-tert-Butyl Ether (MTBE) (mg/kg)	Naphthalene (mg/kg)	n-Propylbenzene (mg/kg)	Styrene (mg/kg)	1,1,1,2-Tetrachloroethane (mg/kg)	1,1,2,2-Tetrachloroethane (mg/kg)	Tetrachloroethylene (PCE) (mg/kg)	Toluene (mg/kg)	1,1,2-Trichloro-1,2,2-trifluoroethane (R113) (mg/kg)	1,2,3-Trichlorobenzene (mg/kg)	1,2,4-Trichlorobenzene (mg/kg)	1,1,1-Trichloroethane (mg/kg)	1,1,2-Trichloroethane (mg/kg)	Trichloroethylene (TCE) (mg/kg)	Trichlorofluoromethane (R11) (mg/kg)	1,2,3-Trichloropropane (mg/kg)	1,2,4-Trimethylbenzene (mg/kg)	1,3,5-Trimethylbenzene (mg/kg)	Vinyl Chloride (mg/kg)	o-Xylene (mg/kg)	m,p-Xylenes (mg/kg)	Gasoline Range Organics (GRO) (mg/kg)			
RWQCB Site-Specific Soil Cleanup Goal (0.5 feet below ground surface)			0.005	0.005	0.005	0.005	0.424	1.44	0.005	0.01	0.05	4.78	0.005	0.05	0.05	0.005	0.231	1.87	0.399	0.005	0.005	0.005	0.444	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	1.8	1.77	0.005	--	--	500	
RWQCB Site-Specific Soil Cleanup Goal (5 feet below ground surface)			0.005	0.005	0.005	0.005	0.212	1.07	0.005	0.01	0.05	0.303	0.005	0.05	0.05	0.005	0.012	0.114	0.03	0.005	0.005	0.005	0.356	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.12	0.118	0.005	--	--	100	
C00271	---	6/3/2015	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0050	<0.010	<0.050	<0.0050	<0.0050	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0020	<0.0020	<0.50	
C00272	---	6/3/2015	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0050	<0.010	<0.050	<0.0050	<0.0050	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0020	<0.0020	<0.50
C00273	---	6/3/2015	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0050	<0.010	<0.050	<0.0050	<0.0050	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0020	<0.0020	<0.50	
C00343	---	9/21/2015	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0050	<0.010	<0.050	<0.0050	<0.0050	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0020	<0.0020	<0.50	

Table B-2
2016 Analytical Results for Volatile Organic Compounds (VOCs) in Soil (0 to 10 feet bgs)
 Defense Fuel Support Point Norwalk
 15306 Norwalk Boulevard, Norwalk, California

Sample ID	Sample Depth (ft bgs)	Date Sampled	Acetone (mg/kg)	tert-Amyl Methyl Ether (TAME) (mg/kg)	Benzene (mg/kg)	Bromobenzene (mg/kg)	Bromochloromethane (mg/kg)	Bromodichloromethane (mg/kg)	Bromoform (mg/kg)	Bromomethane (mg/kg)	2-Butanone (MEK) (mg/kg)	tert-Butyl alcohol (TBA) (mg/kg)	sec-Butylbenzene (mg/kg)	tert-Butylbenzene (mg/kg)	n-Butylbenzene (mg/kg)	Carbon Disulfide (mg/kg)	Carbon Tetrachloride (mg/kg)	Chlorobenzene (mg/kg)	Chloroethane (mg/kg)	Chloroform (mg/kg)	Chloromethane (mg/kg)	2-Chlorotoluene (mg/kg)	4-Chlorotoluene (mg/kg)	1,2-Dibromo-3-chloropropane (mg/kg)	Dibromochloromethane (mg/kg)	1,2-Dibromoethane (EDB) (mg/kg)	Dibromomethane (mg/kg)	1,2-Dichlorobenzene (mg/kg)	1,3-Dichlorobenzene (mg/kg)	1,4-Dichlorobenzene (mg/kg)	Dichlorodifluoromethane (R12) (mg/kg)	1,1-Dichloroethane (mg/kg)	1,2-Dichloroethane (EDC) (mg/kg)	trans-1,2-Dichloroethylene (mg/kg)	cis-1,2-Dichloroethylene (mg/kg)	1,1-Dichloroethylene (mg/kg)	1,2-Dichloropropane (mg/kg)	1,3-Dichloropropane (mg/kg)						
RWQCB Site-Specific Soil Cleanup Goal (0.5 feet below ground surface)			0.994	0.005	0.013	0.005	0.005	0.005	0.005	0.005	0.05	0.02	2.22	1.78	3.4	0.046	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005		
RWQCB Site-Specific Soil Cleanup Goal (5 feet below ground surface)			1.28	0.005	0.011	0.005	0.005	0.005	0.005	0.005	0.05	0.02	0.129	0.11	0.179	0.023	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
C00485	---	12/7/2015	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
C00548	---	12/15/2015	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050

Table B-2
2016 Analytical Results for Volatile Organic Compounds (VOCs) in Soil (0 to 10 feet bgs)
 Defense Fuel Support Point Norwalk
 15306 Norwalk Boulevard, Norwalk, California

Sample ID	Sample Depth (ft bgs)	Date Sampled	Acetone (mg/kg)	tert-Amyl Methyl Ether (TAME) (mg/kg)	Benzene (mg/kg)	Bromobenzene (mg/kg)	Bromochloromethane (mg/kg)	Bromodichloromethane (mg/kg)	Bromoform (mg/kg)	Bromomethane (mg/kg)	2-Butanone (MEK) (mg/kg)	tert-Butyl alcohol (TBA) (mg/kg)	sec-Butylbenzene (mg/kg)	tert-Butylbenzene (mg/kg)	n-Butylbenzene (mg/kg)	Carbon Disulfide (mg/kg)	Carbon Tetrachloride (mg/kg)	Chlorobenzene (mg/kg)	Chloroethane (mg/kg)	Chloroform (mg/kg)	Chloromethane (mg/kg)	2-Chlorotoluene (mg/kg)	4-Chlorotoluene (mg/kg)	1,2-Dibromo-3-chloropropane (mg/kg)	Dibromochloromethane (mg/kg)	1,2-Dibromoethane (EDB) (mg/kg)	Dibromomethane (mg/kg)	1,2-Dichlorobenzene (mg/kg)	1,3-Dichlorobenzene (mg/kg)	1,4-Dichlorobenzene (mg/kg)	Dichlorodifluoromethane (R12) (mg/kg)	1,1-Dichloroethane (mg/kg)	1,2-Dichloroethane (EDC) (mg/kg)	trans-1,2-Dichloroethylene (mg/kg)	cis-1,2-Dichloroethylene (mg/kg)	1,1-Dichloroethylene (mg/kg)	1,2-Dichloropropane (mg/kg)	1,3-Dichloropropane (mg/kg)						
RWQCB Site-Specific Soil Cleanup Goal (0.5 feet below ground surface)			0.994	0.005	0.013	0.005	0.005	0.005	0.005	0.005	0.05	0.02	2.22	1.78	3.4	0.046	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005		
RWQCB Site-Specific Soil Cleanup Goal (5 feet below ground surface)			1.28	0.005	0.011	0.005	0.005	0.005	0.005	0.005	0.05	0.02	0.129	0.11	0.179	0.023	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
C00549	---	12/15/2015	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
C00550	---	12/15/2015	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
C00551	---	12/15/2015	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
C00552	---	12/15/2015	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
C00505-A	---	1/7/2016	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
C00505-B	---	1/7/2016	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
C00505-C	---	1/7/2016	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
C00505-D	---	1/7/2016	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
C00531A	---	1/21/2016	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
C00531B	---	1/21/2016	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
C00531C	---	1/21/2016	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
C00531D	---	1/21/2016	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Number of Samples			942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	
Number of Detections			51	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Detection Frequency			5%	0%	0%	0%	0%	0%	0%	0%	0.11%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Mean			0.071	ND	ND	ND	ND	ND	ND	ND	0.023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Standard Deviation			0.021	ND	ND	ND	ND	ND	ND	ND	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Minimum Detected Concentration			0.051	ND	ND	ND	ND	ND	ND	ND	0.023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Maximum Detected Concentration			0.13	ND	ND	ND	ND	ND	ND	ND	0.023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	

**Table B-2
2016 Analytical Results for Volatile Organic Compounds (VOCs) in Soil (0 to 10 feet bgs)
Defense Fuel Support Point Norwalk
15306 Norwalk Boulevard, Norwalk, California**

Sample ID	Sample Depth (ft bgs)	Date Sampled	2,2-Dichloropropane (mg/kg)	1,1-Dichloropropylene (mg/kg)	trans-1,3-Dichloropropylene (mg/kg)	cis-1,3-Dichloropropylene (mg/kg)	Diisopropyl ether (DIPE) (mg/kg)	Ethylbenzene (mg/kg)	Ethyl-tert-Butyl Ether (ETBE) (mg/kg)	Hexachlorobutadiene (mg/kg)	2-Hexanone (MEK) (mg/kg)	Isopropylbenzene (mg/kg)	4-Isopropyltoluene (mg/kg)	4-Methyl-2-pentanone (MIBK) (mg/kg)	Methylene Chloride (mg/kg)	Methyl-tert-Butyl Ether (MTBE) (mg/kg)	Naphthalene (mg/kg)	n-Propylbenzene (mg/kg)	Styrene (mg/kg)	1,1,1,2-Tetrachloroethane (mg/kg)	1,1,2,2-Tetrachloroethane (mg/kg)	Tetrachloroethylene (PCE) (mg/kg)	Toluene (mg/kg)	1,1,2-Trichloro-1,2,2-trifluoroethane (R113) (mg/kg)	1,2,3-Trichlorobenzene (mg/kg)	1,2,4-Trichlorobenzene (mg/kg)	1,1,1-Trichloroethane (mg/kg)	1,1,2-Trichloroethane (mg/kg)	Trichloroethylene (TCE) (mg/kg)	Trichlorofluoromethane (R11) (mg/kg)	1,2,3-Trichloropropane (mg/kg)	1,2,4-Trimethylbenzene (mg/kg)	1,3,5-Trimethylbenzene (mg/kg)	Vinyl chloride (mg/kg)	o-Xylene (mg/kg)	m,p-Xylenes (mg/kg)	Gasoline Range Organics (GRO) (mg/kg)			
RWQCB Site-Specific Soil Cleanup Goal (0.5 feet below ground surface)			0.005	0.005	0.005	0.005	0.424	1.44	0.005	0.01	0.05	4.78	0.005	0.05	0.05	0.005	0.231	1.87	0.399	0.005	0.005	0.005	0.444	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	1.8	1.77	0.005	--	--	500			
RWQCB Site-Specific Soil Cleanup Goal (5 feet below ground surface)			0.005	0.005	0.005	0.005	0.212	1.07	0.005	0.01	0.05	0.303	0.005	0.05	0.05	0.005	0.012	0.114	0.03	0.005	0.005	0.005	0.356	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.12	0.118	0.005	--	--	100				
C00549	---	12/15/2015	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0050	<0.010	<0.050	<0.0050	<0.0050	<0.050	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0020	<0.0020	<0.50		
C00550	---	12/15/2015	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0050	<0.010	<0.050	<0.0050	<0.0050	<0.050	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0020	<0.0020	<0.50	
C00551	---	12/15/2015	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0050	<0.010	<0.050	<0.0050	<0.0050	<0.050	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0020	<0.0020	<0.50	
C00552	---	12/15/2015	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0050	<0.010	<0.050	<0.0050	<0.0050	<0.050	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0020	<0.0020	<0.50	
C00505-A	---	1/7/2016	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0050	<0.010	<0.050	<0.0050	<0.0050	<0.050	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0020	<0.0020	<0.50
C00505-B	---	1/7/2016	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0050	<0.010	<0.050	<0.0050	<0.0050	<0.050	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0021	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0020	<0.0020	<0.50
C00505-C	---	1/7/2016	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0050	<0.010	<0.050	<0.0050	<0.0050	<0.050	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0026	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0020	<0.0020	<0.50
C00505-D	---	1/7/2016	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0050	<0.010	<0.050	<0.0050	<0.0050	<0.050	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0030	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0020	<0.0020	<0.50
C00531A	---	1/21/2016	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0050	<0.010	<0.050	<0.0050	<0.0050	<0.050	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0020	<0.0020	<0.50	
C00531B	---	1/21/2016	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0050	<0.010	<0.050	<0.0050	<0.0050	<0.050	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0030	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0020	<0.0020	<0.50
C00531C	---	1/21/2016	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0050	<0.010	<0.050	<0.0050	<0.0050	<0.050	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0022	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0020	<0.0020	<0.50
C00531D	---	1/21/2016	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0050	<0.010	<0.050	<0.0050	<0.0050	<0.050	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0020	<0.0020	<0.50
Number of Samples			942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	
Number of Detections			0	0	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	98	0	0	0	0	0	0	0	0	5	0	0	13	76	7			
Detection Frequency			0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	8%	1%				
Mean			ND	ND	ND	ND	ND	0.0027	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0029	ND	ND	ND	ND	ND	ND	ND	0.0053	ND	ND	0.0066	0.0055	0.77				
Standard Deviation			ND	ND	ND	ND	ND	0.0012	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0010	ND	ND	ND	ND	ND	ND	ND	0.0022	ND	ND	0.0018	0.0062	0.26				
Minimum Detected Concentration			ND	ND	ND	ND	ND	0.0020	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0020	ND	ND	ND	ND	ND	ND	ND	0.0050	ND	ND	0.0025	0.0020	0.61				
Maximum Detected Concentration			ND	ND	ND	ND	ND	0.0059	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0073	ND	ND	ND	ND	ND	ND	ND	0.0056	ND	ND	0.0089	0.024	1.3				

Notes: All concentrations are presented in milligrams per kilogram (mg/kg).
Detections are shown in **bold**.
ft bgs = feet below ground surface.
<0.050 = not detected at or above the indicated laboratory reporting limit.
GRO and VOCs by EPA Method 8260B/5035.
--- = not applicable.
ND = not detected.
NE = not estimated.
* = resampled locations.

2017 ANALYTICAL RESULTS

Table B-3
2017 Analytical Results for Gasoline Range Organics and Hydrocarbon Chain Ranges
in Soil (0 to 10 feet bgs)

Defense Fuel Support Point Norwalk
15306 Norwalk Boulevard, Norwalk, California

Sample ID	Sample Depth (ft bgs)	Sample Date	Gasoline Range Organics (GRO) (mg/kg)	Carbon Range C13-C22 (mg/kg)	Carbon Range C23-C32 (mg/kg)	Carbon Range C32-C44 (mg/kg)	Carbon Range C32-C44 (mg/kg)
RWQCB Site-Specific Soil Cleanup Goal (0.5 feet below ground surface)			500	1,000	---	---	10,000
RWQCB Site-Specific Soil Cleanup Goal (5 feet below ground surface)			500	1,000	---	---	10,000
RWQCB Site-Specific Soil Cleanup Goal (10 feet below ground surface)			100	100	---	---	1,000
SB-24-5'	5	2/15/2017	<0.50	<10	<10	<10	<10
SB-24-10'	10	2/15/2017	<0.50	<10	<10	<10	<10
SB-25-5'	5	2/15/2017	<0.50	<10	<10	<10	<10
SB-25-10'	10	2/15/2017	<0.50	<10	<10	<10	<10
SB-26-5'	5	2/15/2017	<0.50	<10	<10	<10	<10
SB-26-10'	10	2/15/2017	<0.50	<10	<10	<10	<10
SB-27-5'	5	2/15/2017	<0.50	<10	<10	<10	<10
SB-27-10'	10	2/15/2017	<0.50	<10	<10	<10	<10

Notes: All concentrations are presented in milligrams per kilogram (mg/kg).
Detections are shown in **bold**.
C13-C22 = carbon chains ranging from C13 through C22.
ft bgs = feet below ground surface.
<0.50 = not detected at or above the indicated laboratory reporting limit.
RWQCB = Regional Water Quality Control Board.
Hydrocarbon Chain Identification by EPA Method 8015B(M).
GRO by EPA Method 8260B/5035.

Table B-4
2017 Analytical Results for Volatile Organic Compounds (VOCs) in Soil (0 to 10 feet bgs)
 Defense Fuel Support Point Norwalk
 15306 Norwalk Boulevard, Norwalk, California

Sample ID	Sample Depth (ft bgs)	Sample Date	Acetone (mg/kg)	tert-Amyl Methyl Ether (TAME) (mg/kg)	Benzene (mg/kg)	Bromobenzene (mg/kg)	Bromochloromethane (mg/kg)	Bromodichloromethane (mg/kg)	Bromoform (mg/kg)	Bromomethane (mg/kg)	2-Butanone (MEK) (mg/kg)	tert-Butyl alcohol (TBA) (mg/kg)	sec-Butylbenzene (mg/kg)	tert-Butylbenzene (mg/kg)	n-Butylbenzene (mg/kg)	Carbon Disulfide (mg/kg)	Carbon Tetrachloride (mg/kg)	Chlorobenzene (mg/kg)	Chloroethane (mg/kg)	Chloroform (mg/kg)	Chloromethane (mg/kg)	2-Chlorotoluene (mg/kg)	4-Chlorotoluene (mg/kg)	1,2-Dibromo-3-chloropropane (mg/kg)	Dibromochloromethane (mg/kg)	1,2-Dibromoethane (EDB) (mg/kg)	Dibromomethane (mg/kg)	1,2-Dichlorobenzene (mg/kg)	1,3-Dichlorobenzene (mg/kg)	1,4-Dichlorobenzene (mg/kg)	Dichlorodifluoromethane (R12) (mg/kg)	1,1-Dichloroethane (mg/kg)	1,2-Dichloroethane (EDC) (mg/kg)	trans-1,2-Dichloroethylene (mg/kg)	cis-1,2-Dichloroethylene (mg/kg)	1,1-Dichloroethylene (mg/kg)	1,2-Dichloropropane (mg/kg)	1,3-Dichloropropane (mg/kg)							
RWQCB Site-Specific Soil Cleanup Goal (0.5 feet below ground surface)			0.994	0.005	0.013	0.005	0.005	0.005	0.005	0.005	0.05	0.02	2.22	1.78	3.4	0.046	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005			
RWQCB Site-Specific Soil Cleanup Goal (5 feet below ground surface)			1.28	0.005	0.011	0.005	0.005	0.005	0.005	0.005	0.05	0.02	0.129	0.11	0.179	0.023	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
SB-24-5'	5	2/15/2017	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
SB-24-10'	10	2/15/2017	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
SB-25-5'	5	2/15/2017	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
SB-25-10'	10	2/15/2017	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
SB-26-5'	5	2/15/2017	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
SB-26-10'	10	2/15/2017	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
SB-27-5'	5	2/15/2017	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
SB-27-10'	10	2/15/2017	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Number of Samples			8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	
Number of Detections			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Detection Frequency			0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Mean			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Standard Deviation			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Minimum Detected Concentration			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Detected Concentration			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table B-4
2017 Analytical Results for Volatile Organic Compounds (VOCs) in Soil (0 to 10 feet bgs)
 Defense Fuel Support Point Norwalk
 15306 Norwalk Boulevard, Norwalk, California

Sample ID	Sample Depth (ft bgs)	Sample Date	2,2-Dichloropropane (mg/kg)	1,1-Dichloropropylene (mg/kg)	trans-1,3-Dichloropropylene (mg/kg)	cis-1,3-Dichloropropylene (mg/kg)	Diisopropyl ether (DIPE) (mg/kg)	Ethylbenzene (mg/kg)	Ethyl-tert-Butyl Ether (ETBE) (mg/kg)	Hexachlorobutadiene (mg/kg)	2-Hexanone (MBK) (mg/kg)	Isopropylbenzene (mg/kg)	4-Isopropyltoluene (mg/kg)	4-Methyl-2-pentanone (MIBK) (mg/kg)	Methylene Chloride (mg/kg)	Methyl-tert-Butyl Ether (MTBE) (mg/kg)	Naphthalene (mg/kg)	n-Propylbenzene (mg/kg)	Styrene (mg/kg)	1,1,1,2-Tetrachloroethane (mg/kg)	1,1,2,2-Tetrachloroethane (mg/kg)	Tetrachloroethylene (PCE) (mg/kg)	Toluene (mg/kg)	1,1,2-Trichloro-1,2,2-trifluoroethane (R113) (mg/kg)	1,2,3-Trichlorobenzene (mg/kg)	1,2,4-Trichlorobenzene (mg/kg)	1,1,1-Trichloroethane (mg/kg)	1,1,2-Trichloroethane (mg/kg)	Trichloroethylene (TCE) (mg/kg)	Trichlorofluoromethane (R11) (mg/kg)	1,2,3-Trichloropropane (mg/kg)	1,2,4-Trimethylbenzene (mg/kg)	1,3,5-Trimethylbenzene (mg/kg)	Vinyl chloride (mg/kg)	o-Xylene (mg/kg)	m,p-Xylenes (mg/kg)	Gasoline Range Organics (GRO) (mg/kg)		
RWQCB Site-Specific Soil Cleanup Goal (0.5 feet below ground surface)			0.005	0.005	0.005	0.005	0.424	1.44	0.005	0.01	0.05	4.78	0.005	0.05	0.05	0.005	0.231	1.87	0.399	0.005	0.005	0.005	0.444	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	1.8	1.77	0.005	--	--	500		
RWQCB Site-Specific Soil Cleanup Goal (5 feet below ground surface)			0.005	0.005	0.005	0.005	0.212	1.07	0.005	0.01	0.05	0.303	0.005	0.05	0.05	0.005	0.012	0.114	0.03	0.005	0.005	0.005	0.356	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.12	0.118	0.005	---	---	100		
SB-24-5'	5	2/15/2017	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0050	<0.010	<0.050	<0.0050	<0.0050	<0.0050	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0020	<0.0020	<0.50
SB-24-10'	10	2/15/2017	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0050	<0.010	<0.050	<0.0050	<0.0050	<0.0050	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0020	<0.0020	<0.50
SB-25-5'	5	2/15/2017	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0050	<0.010	<0.050	<0.0050	<0.0050	<0.0050	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0020	<0.0020	<0.50
SB-25-10'	10	2/15/2017	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0050	<0.010	<0.050	<0.0050	<0.0050	<0.0050	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0020	<0.0020	<0.50
SB-26-5'	5	2/15/2017	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0050	<0.010	<0.050	<0.0050	<0.0050	<0.0050	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0020	<0.0020	<0.50
SB-26-10'	10	2/15/2017	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0050	<0.010	<0.050	<0.0050	<0.0050	<0.0050	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0020	<0.0020	<0.50
SB-27-5'	5	2/15/2017	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0050	<0.010	<0.050	<0.0050	<0.0050	<0.0050	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0020	<0.0020	<0.50	
SB-27-10'	10	2/15/2017	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0050	<0.010	<0.050	<0.0050	<0.0050	<0.0050	<0.050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0020	<0.0020	<0.50	
Number of Samples			8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
Number of Detections			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Detection Frequency			0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Mean			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Standard Deviation			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Minimum Detected Concentration			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Detected Concentration			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes: All concentrations are presented in milligrams per kilogram (mg/kg).
 Detections are shown in **bold**.
 <0.050 = not detected at or above the indicated laboratory reporting limit.
 GRO and VOCs by EPA Method 8260B/5035.
 ft bgs = feet below ground surface.
 RWQCB = Regional Water Quality Control Board.
 --- = not applicable.
 ND = not detected.
 NE = not estimated.

APPENDIX C

ANALYTICAL RESULTS FOR VOCS IN SOIL GAS

2015/2016 ANALYTICAL RESULTS

Table C-1
2016 Analytical Results for Volatile Organic Compounds (VOCs) in Soil Gas
 Defense Fuel Support Point Norwalk
 15306 Norwalk Blvd, Norwalk, CA 90650

Sample ID	Depth (ft bgs)	Date Sampled	Acetone ($\mu\text{g}/\text{m}^3$)	Benzene ($\mu\text{g}/\text{m}^3$)	Toluene ($\mu\text{g}/\text{m}^3$)	Ethylbenzene ($\mu\text{g}/\text{m}^3$)	m,p-Xylene ($\mu\text{g}/\text{m}^3$)	o-Xylene ($\mu\text{g}/\text{m}^3$)	2- Butanone (MEK) ($\mu\text{g}/\text{m}^3$)	4- Ethyltoluene ($\mu\text{g}/\text{m}^3$)	1,2,4- Trimethylbenzene ($\mu\text{g}/\text{m}^3$)
SV-1-5	5	03/11/16	140	<16	<38	<22	<44	<22	<60	<50	<50
SV-14-5	5	03/09/16	61	<16	<38	<22	<44	<22	<60	<50	<50
SV-17-5	5	03/09/16	<48	<16	<38	<22	<44	<22	<60	<50	<50
SV-18-5	5	03/08/16	83	30	120	<22	66	<22	<60	<50	<50
SV-19-5	5	03/09/16	<48	<16	<38	<22	<44	<22	<60	<50	<50
SV-20-5	5	03/09/16	<48	<16	<38	<22	<44	<22	<60	<50	<50
SV-21-5	5	03/09/16	<48	<16	<38	<22	<44	<22	<60	<50	<50
SV-22-5	5	03/09/16	<48	<16	<38	<22	<44	<22	<60	<50	<50
SV-23-5	5	03/08/16	<48	<16	<38	<22	<44	<22	<60	<50	<50
SV-24-5	5	03/10/16	86	28	110	<22	57	<22	<60	<50	<50
SV-24-5 REP	5	03/10/16	170	29	110	<22	48	<22	<60	<50	<50
SV-25-5	5	03/09/16	<48	<16	<38	<22	<44	<22	<60	<50	<50
SV-26-5	5	03/09/16	67	<16	<38	<22	<44	<22	<60	<50	<50
SV-27-5	5	03/08/16	<48	<16	<38	<22	<44	<22	<60	<50	<50
SV-28-5	5	03/10/16	<48	<16	<38	<22	<44	<22	<60	<50	<50
SV-29-5	5	03/08/16	58	<16	40	<22	<44	<22	<60	<50	<50
SV-3-5	5	03/11/16	59	<16	<38	<22	<44	<22	<60	<50	<50
SV-30-5	5	03/08/16	<48	<16	<38	<22	<44	<22	<60	<50	<50
SV-31-5	5	03/10/16	<48	<16	<38	<22	<44	<22	<60	<50	<50
SV-32-5	5	03/08/16	55	<16	66	<22	<44	<22	<60	<50	<50
SV-32-5 REP	5	03/08/16	63	<16	70	<22	<44	<22	<60	<50	<50
SV-35-5	5	03/11/16	54	<16	<38	<22	<44	<22	<60	<50	<50
SV-38-5	5	03/10/16	190	<16	<38	<22	<44	<22	<60	<50	<50
SV-4-5	5	03/11/16	75	<16	<38	<22	<44	<22	<60	<50	<50
SV-41-5	5	03/10/16	100	<16	<38	<22	<44	<22	<60	<50	<50
SV-5-5	5	03/11/16	54	<16	<38	<22	<44	<22	<60	<50	<50
SV-5-5 REP	5	03/11/16	75	<16	<38	<22	<44	<22	<60	<50	<50
SV-94-5	5	03/10/16	<48	<16	<38	<22	<44	<22	<60	<50	<50
SV-96-5	5	03/10/16	<48	<16	<38	<22	<44	<22	<60	<50	<50
Number of Samples			29	29	29	29	29	29	29	29	29
Number of Detections			16	3	6	0	3	0	0	0	0
Detection Frequency			55%	10%	21%	0%	10%	0%	0%	0%	0%
Mean			87	29	86	ND	57	ND	ND	ND	ND
Standard Deviation			43	1.0	32	ND	9.0	ND	ND	ND	ND
Minimum Detected Concentration			54	28	40	ND	48	ND	ND	ND	ND
Maximum Detected Concentration			190	30	120	ND	66	ND	ND	ND	ND

Table C-1
2016 Analytical Results for Volatile Organic Compounds (VOCs) in Soil Gas
 Defense Fuel Support Point Norwalk
 15306 Norwalk Blvd, Norwalk, CA 90650

Sample ID	Depth (ft bgs)	Date Sampled	Acetone ($\mu\text{g}/\text{m}^3$)	Benzene ($\mu\text{g}/\text{m}^3$)	Toluene ($\mu\text{g}/\text{m}^3$)	Ethylbenzene ($\mu\text{g}/\text{m}^3$)	m,p-Xylene ($\mu\text{g}/\text{m}^3$)	o-Xylene ($\mu\text{g}/\text{m}^3$)	2- Butanone (MEK) ($\mu\text{g}/\text{m}^3$)	4- Ethyltoluene ($\mu\text{g}/\text{m}^3$)	1,2,4- Trimethylbenzene ($\mu\text{g}/\text{m}^3$)
SV-1-10	10	03/11/16	<48	98	<38	<22	<44	<22	<60	<50	<50
SV-14-10	10	03/09/16	96	<16	110	29	66	31	<60	<50	<50
SV-17-10	10	03/09/16	59	49	200	27	75	28	<60	<50	<50
SV-18-10	10	03/08/16	69	34	130	27	60	31	<60	<50	<50
SV-19-10	10	03/09/16	51	38	200	33	93	35	<60	<50	<50
SV-19-10 REP	10	03/09/16	49	34	190	27	86	<22	<60	<50	<50
SV-20-10	10	03/09/16	77	65	390	56	170	48	<60	<50	<50
SV-21-10	10	03/09/16	63	72	380	43	190	51	<60	<50	<50
SV-22-10	10	03/09/16	100	53	230	36	120	34	<60	<50	<50
SV-23-10	10	03/08/16	72	39	150	<22	48	<22	<60	<50	<50
SV-24-10	10	03/10/16	320	18	96	<22	51	<22	<60	<50	<50
SV-25-10	10	03/09/16	<48	42	260	69	270	74	<60	59	52
SV-26-10	10	03/09/16	<48	<16	<38	<22	46	<22	<60	<50	<50
SV-27-10	10	03/08/16	<48	<16	<38	<22	<44	<22	<60	<50	<50
SV-28-10	10	03/10/16	150	<16	<38	<22	<44	<22	<60	<50	<50
SV-29-10	10	03/08/16	<48	<16	41	<22	<44	<22	<60	<50	<50
SV-3-10	10	03/11/16	57	<16	<38	<22	<44	<22	<60	<50	<50
SV-30-10	10	03/08/16	<48	<16	<38	<22	<44	<22	<60	<50	<50
SV-31-10	10	03/10/16	<48	<16	<38	<22	<44	<22	<60	<50	<50
SV-32-10	10	03/08/16	<48	<16	<38	<22	<44	<22	<60	<50	<50
SV-35-10	10	03/11/16	52	<16	<38	<22	<44	<22	<60	<50	<50
SV-38-10	10	03/10/16	91	<16	40	<22	<44	<22	<60	<50	<50
SV-4-10	10	03/11/16	130	<16	<38	<22	<44	<22	<60	<50	<50
SV-41-10	10	03/10/16	100	<16	<38	<22	<44	<22	<60	<50	<50
SV-5-10	10	03/11/16	530	<16	<38	<22	<44	<22	70	<50	<50
SV-94-10	10	03/10/16	<48	31	140	26	89	28	<60	<50	<50
SV-96-10	10	03/10/16	<48	33	140	25	84	29	77	<50	<50
Number of Samples			27	27	27	27	27	27	27	27	27
Number of Detections			17	13	15	11	14	10	2	1	1
Detection Frequency			63%	48%	56%	41%	52%	37%	7%	4%	4%
Mean			122	47	180	36	103	39	74	NE	NE
Standard Deviation			123	21	104	14	65	15	4.9	NE	NE
Minimum Detected Concentration			49	18	40	25	46	28	70	59	52
Maximum Detected Concentration			530	98	390	69	270	74	77	59	52

Notes: Analytes detected during the 2016 site investigation in soil gas are included in this table.
 Detected concentrations are shown in **bold**.
 ft bgs = feet below ground surface.
 $\mu\text{g}/\text{m}^3$ = micrograms per cubic meter.
 <48 = not detected at or above the indicated laboratory reporting limit.
 ND = not detected.
 NE = not estimated.

2017 ANALYTICAL RESULTS

Table C-2
2017 Analytical Results for Volatile Organic Compounds (VOCs) in Soil Gas
 Defense Fuel Support Point Norwalk
 15306 Norwalk Blvd, Norwalk, CA 90650

Sample ID	Depth (ft bgs)	Date Sampled	Acetone (µg/m ³)	Benzene (µg/m ³)	Toluene (µg/m ³)	Ethylbenzene (µg/m ³)	Tetrachloroethene (µg/m ³)	Trichloroethene (µg/m ³)	4-Methyl-2- Pentanone (µg/m ³)	m,p-Xylene (µg/m ³)	o-Xylene (µg/m ³)	2-Butanone (MEK) (µg/m ³)	Carbon Disulfide (µg/m ³)	1,3- Dichlorobenzene (µg/m ³)	Ethanol (µg/m ³)	Isopropanol (µg/m ³)	4-Ethyltoluene (µg/m ³)	1,2,4- Trimethylbenzene (µg/m ³)	1,3,5- Trimethylbenzene (µg/m ³)
SVM24-5	5	02/16/17	32	2.5	28	8.9	7.3	<2.7	<6.1	35	13	5.9	<6.2	320	170	23	4.0	15	4.1
SVM25-5	5	02/16/17	84	15	220	71	<3.7	3.9	10	270	90	31	<6.8	230	190	23	42	120	40
SVM26-5	5	02/16/17	98	2.4	29	9.6	<3.4	<2.7	8.3	41	16	41	<6.2	280	240	29	6.1	23	5.5
SVM27-5	5	02/16/17	40	2.2	24	6.7	<3.4	<2.7	<6.1	26	10	11	<6.2	170	220	31	3.3	12	3.3
Number of Samples			4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Number of Detections			4	4	4	4	1	1	2	4	4	4	0	4	4	4	4	4	4
Detection Frequency			100%	100%	100%	100%	25%	25%	50%	100%	100%	100%	0%	100%	100%	100%	100%	100%	100%
Mean			64	6	75	24	7.3	3.9	9.2	93	32	22	ND	250	205	27	14	43	13
Standard Deviation			32	6.3	97	31	NE	NE	1.2	118	39	17	ND	65	31	4.1	19	52	18
Minimum Detected Concentration			32	2.2	24	6.7	7.3	3.9	8.3	26	10	5.9	ND	170	170	23	3.3	12	3.3
Maximum Detected Concentration			98	15	220	71	7.3	3.9	10	270	90	41	ND	320	240	31	42	120	40
SVM24-10	10	02/16/17	37	25	390	90	10	<3.1	<7.1	300	91	9.9	<7.2	210	140	20	24	58	24
SVM25-10	10	02/16/17	110	20	350	120	<3.6	<2.8	18	440	160	48	9.5	210	160	25	73	220	72
SVM25-10 DUP	10	02/16/17	120	21	370	140	<3.5	<2.7	19	510	190	53	7.4	250	160	22	85	270	79
SVM26-10	10	02/16/17	97	63	640	150	<3.7	<2.9	11	520	200	38	20	270	190	26	57	150	50
SVM27-10	10	02/16/17	62	20	300	99	7.6	<2.7	<6.1	370	130	31	11	210	110	24	46	120	42
Number of Samples			5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Number of Detections			5	5	5	5	2	0	3	5	5	5	4	5	5	5	5	5	5
Detection Frequency			100%	100%	100%	100%	40%	0%	60%	100%	100%	100%	80%	100%	100%	100%	100%	100%	100%
Mean			85	30	410	120	8.8	ND	16	428	154	36	12	230	152	23	57	164	53
Standard Deviation			35	19	133	26	1.7	ND	4.4	94	45	17	5.6	28	29	2.4	24	83	22
Minimum Detected Concentration			37	20	300	90	7.6	ND	11	300	91	10	7.4	210	110	20	24	58	24
Maximum Detected Concentration			120	63	640	150	10	ND	19	520	200	53	20	270	190	26	85	270	79

Notes: Analytes detected during the 2017 additional site investigation in soil gas are included in this table.
 Detected concentrations are shown in **bold**.
 ft bgs = feet below ground surface.
 µg/m³ = micrograms per cubic meter.
 <3.7 = not detected at or above the indicated laboratory reporting limit.
 ND = not detected.
 NE = not estimated.

APPENDIX D

PROUCL STATISTICAL EVALUATION

TOTAL PETROLEUM HYDROCARBONS IN SOIL (0 TO 10 FEET BGS)

**ProUCL Statistical Evaluation of Total Petroleum Hydrocarbons (C6-C12) in Soil (0 to 10 feet bgs)
(Data in milligrams per kilogram [mg/kg])**

Defense Fuel Support Point Norwalk

15306 Norwalk Boulevard

Norwalk, California

General Statistics

Total Number of Observations	360	Number of Distinct Observations	19
		Number of Missing Observations	396
Number of Detects	18	Number of Non-Detects	342
Number of Distinct Detects	16	Number of Distinct Non-Detects	4
Minimum Detect	0.55	Minimum Non-Detect	1
Maximum Detect	31.4	Maximum Non-Detect	10
Variance Detects	52.31	Percent Non-Detects	95%
Mean Detects	4.164	SD Detects	7.232
Median Detects	1.625	CV Detects	1.737
Skewness Detects	3.495	Kurtosis Detects	13.31
Mean of Logged Detects	0.663	SD of Logged Detects	1.166

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.524	Shapiro Wilk GOF Test	
5% Shapiro Wilk Critical Value	0.897	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.309	Lilliefors GOF Test	
5% Lilliefors Critical Value	0.202	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.84	KM Standard Error of Mean	0.108
KM SD	1.753	95% KM (BCA) UCL	1.053
95% KM (t) UCL	1.018	95% KM (Percentile Bootstrap) UCL	1.034
95% KM (z) UCL	1.018	95% KM Bootstrap t UCL	1.206
90% KM Chebyshev UCL	1.164	95% KM Chebyshev UCL	1.311
97.5% KM Chebyshev UCL	1.515	99% KM Chebyshev UCL	1.916

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.043	Anderson-Darling GOF Test	
5% A-D Critical Value	0.777	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.203	Kolmogorov-Smirnov GOF	
5% K-S Critical Value	0.211	Detected data appear Gamma Distributed at 5% Significance Level	

Detected data follow Appr. Gamma Distribution at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.78	k star (bias corrected MLE)	0.687
Theta hat (MLE)	5.34	Theta star (bias corrected MLE)	6.062
nu hat (MLE)	28.07	nu star (bias corrected)	24.73
Mean (detects)	4.164		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.576
Maximum	31.4	Median	0.01
SD	1.999	CV	3.473
k hat (MLE)	0.253	k star (bias corrected MLE)	0.253
Theta hat (MLE)	2.273	Theta star (bias corrected MLE)	2.275
nu hat (MLE)	182.4	nu star (bias corrected)	182.2
Adjusted Level of Significance (β)	0.0493		
Approximate Chi Square Value (182.22, α)	152	Adjusted Chi Square Value (182.22, β)	151.9
95% Gamma Approximate UCL (use when n>=50)	0.69	95% Gamma Adjusted UCL (use when n<50)	0.691

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.84	SD (KM)	1.753
Variance (KM)	3.071	SE of Mean (KM)	0.108
k hat (KM)	0.23	k star (KM)	0.229

nu hat (KM)	165.3	nu star (KM)	165.2
theta hat (KM)	3.658	theta star (KM)	3.659
80% gamma percentile (KM)	1.18	90% gamma percentile (KM)	2.533
95% gamma percentile (KM)	4.167	99% gamma percentile (KM)	8.571
Gamma Kaplan-Meier (KM) Statistics			
Approximate Chi Square Value (165.22, α)	136.5	Adjusted Chi Square Value (165.22, β)	136.4
95% Gamma Approximate KM-UCL (use when $n \geq 50$)	1.016	95% Gamma Adjusted KM-UCL (use when $n < 50$)	1.017
Lognormal GOF Test on Detected Observations Only			
Shapiro Wilk Test Statistic	0.911	Shapiro Wilk GOF Test	
5% Shapiro Wilk Critical Value	0.897	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.14	Lilliefors GOF Test	
5% Lilliefors Critical Value	0.202	Detected Data appear Lognormal at 5% Significance Level	
Detected Data appear Lognormal at 5% Significance Level			
Lognormal ROS Statistics Using Imputed Non-Detects			
Mean in Original Scale	0.969	Mean in Log Scale	-0.41
SD in Original Scale	1.822	SD in Log Scale	0.791
95% t UCL (assumes normality of ROS data)	1.128	95% Percentile Bootstrap UCL	1.15
95% BCA Bootstrap UCL	1.222	95% Bootstrap t UCL	1.293
95% H-UCL (Log ROS)	0.985		
Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution			
KM Mean (logged)	-0.374	KM Geo Mean	0.688
KM SD (logged)	0.395	95% Critical H Value (KM-Log)	1.748
KM Standard Error of Mean (logged)	0.0751	95% H-UCL (KM -Log)	0.772
KM SD (logged)	0.395	95% Critical H Value (KM-Log)	1.748
KM Standard Error of Mean (logged)	0.0751		
DL/2 Statistics			
DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.703	Mean in Log Scale	-0.613
SD in Original Scale	1.782	SD in Log Scale	0.416
95% t UCL (Assumes normality)	0.858	95% H-Stat UCL	0.614
DL/2 is not a recommended method, provided for comparisons and historical reasons			
Nonparametric Distribution Free UCL Statistics			
Detected Data appear Approximate Gamma Distributed at 5% Significance Level			
Suggested UCL to Use			
95% KM Approximate Gamma UCL	1.016		

**ProUCL Statistical Evaluation of Total Petroleum Hydrocarbons (C13-C22) in Soil (0 to 10 feet bgs)
(Data in milligrams per kilogram [mg/kg])**

Defense Fuel Support Point Norwalk

15306 Norwalk Boulevard

Norwalk, California

General Statistics

Total Number of Observations	936	Number of Distinct Observations	187
		Number of Missing Observations	39
Number of Detects	277	Number of Non-Detects	659
Number of Distinct Detects	186	Number of Distinct Non-Detects	3
Minimum Detect	0.55	Minimum Non-Detect	1
Maximum Detect	603.7	Maximum Non-Detect	50
Variance Detects	2947	Percent Non-Detects	70.41%
Mean Detects	29.6	SD Detects	54.29
Median Detects	16.8	CV Detects	1.834
Skewness Detects	6.793	Kurtosis Detects	58.78
Mean of Logged Detects	2.679	SD of Logged Detects	1.255

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.448	Normal GOF Test on Detected Observations Only
5% Shapiro Wilk P Value	0	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.296	Lilliefors GOF Test
5% Lilliefors Critical Value	0.0536	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	9.7	KM Standard Error of Mean	1.058
KM SD	32.22	95% KM (BCA) UCL	11.66
95% KM (t) UCL	11.44	95% KM (Percentile Bootstrap) UCL	11.59
95% KM (z) UCL	11.44	95% KM Bootstrap t UCL	12.06
90% KM Chebyshev UCL	12.87	95% KM Chebyshev UCL	14.31
97.5% KM Chebyshev UCL	16.31	99% KM Chebyshev UCL	20.23

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	4.022	Anderson-Darling GOF Test
5% A-D Critical Value	0.793	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.109	Kolmogorov-Smirnov GOF
5% K-S Critical Value	0.0568	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.833	k star (bias corrected MLE)	0.826
Theta hat (MLE)	35.55	Theta star (bias corrected MLE)	35.83
nu hat (MLE)	461.3	nu star (bias corrected)	457.6
Mean (detects)	29.6		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	8.813
Maximum	603.7	Median	0.01
SD	32.43	CV	3.68
k hat (MLE)	0.167	k star (bias corrected MLE)	0.167
Theta hat (MLE)	52.77	Theta star (bias corrected MLE)	52.71
nu hat (MLE)	312.6	nu star (bias corrected)	313
Adjusted Level of Significance (β)	0.0497		
Approximate Chi Square Value (312.98, α)	273	Adjusted Chi Square Value (312.98, β)	272.9
95% Gamma Approximate UCL (use when $n \geq 50$)	10.1	95% Gamma Adjusted UCL (use when $n < 50$)	10.11

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	9.7	SD (KM)	32.22
Variance (KM)	1038	SE of Mean (KM)	1.058
k hat (KM)	0.0907	k star (KM)	0.0911

nu hat (KM)	169.7	nu star (KM)	170.5
theta hat (KM)	107	theta star (KM)	106.5
80% gamma percentile (KM)	5.826	90% gamma percentile (KM)	24.74
95% gamma percentile (KM)	56.5	99% gamma percentile (KM)	161.4
Gamma Kaplan-Meier (KM) Statistics			
Approximate Chi Square Value (170.51, α)	141.3	Adjusted Chi Square Value (170.51, β)	141.3
95% Gamma Approximate KM-UCL (use when $n \geq 50$)	11.7	95% Gamma Adjusted KM-UCL (use when $n < 50$)	11.71
Lognormal GOF Test on Detected Observations Only			
Shapiro Wilk Approximate Test Statistic	0.953	Shapiro Wilk GOF Test	
5% Shapiro Wilk P Value	1.3107E-8	Detected Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.121	Lilliefors GOF Test	
5% Lilliefors Critical Value	0.0536	Detected Data Not Lognormal at 5% Significance Level	
Detected Data Not Lognormal at 5% Significance Level			
Lognormal ROS Statistics Using Imputed Non-Detects			
Mean in Original Scale	9.999	Mean in Log Scale	0.722
SD in Original Scale	32.16	SD in Log Scale	1.819
95% t UCL (assumes normality of ROS data)	11.73	95% Percentile Bootstrap UCL	11.92
95% BCA Bootstrap UCL	12.41	95% Bootstrap t UCL	12.48
95% H-UCL (Log ROS)	12.76		
Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution			
KM Mean (logged)	0.734	KM Geo Mean	2.083
KM SD (logged)	1.545	95% Critical H Value (KM-Log)	2.581
KM Standard Error of Mean (logged)	0.0642	95% H-UCL (KM -Log)	7.83
KM SD (logged)	1.545	95% Critical H Value (KM-Log)	2.581
KM Standard Error of Mean (logged)	0.0642		
DL/2 Statistics			
DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	11.31	Mean in Log Scale	1.421
SD in Original Scale	31.85	SD in Log Scale	1.393
95% t UCL (Assumes normality)	13.02	95% H-Stat UCL	12.2
DL/2 is not a recommended method, provided for comparisons and historical reasons			
Nonparametric Distribution Free UCL Statistics			
Data do not follow a Discernible Distribution at 5% Significance Level			
Suggested UCL to Use			
95% KM (Chebyshev) UCL	14.31		

**ProUCL Statistical Evaluation of Total Petroleum Hydrocarbons (C23-C32) in Soil (0 to 10 feet bgs)
(Data in milligrams per kilogram [mg/kg])**

Defense Fuel Support Point Norwalk

15306 Norwalk Boulevard

Norwalk, California

General Statistics

Total Number of Observations	936	Number of Distinct Observations	293
		Number of Missing Observations	39
Number of Detects	497	Number of Non-Detects	439
Number of Distinct Detects	293	Number of Distinct Non-Detects	2
Minimum Detect	0.6	Minimum Non-Detect	1
Maximum Detect	1200	Maximum Non-Detect	10
Variance Detects	12535	Percent Non-Detects	46.9%
Mean Detects	82.95	SD Detects	112
Median Detects	44	CV Detects	1.35
Skewness Detects	4.118	Kurtosis Detects	28.59
Mean of Logged Detects	3.682	SD of Logged Detects	1.358

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.664	Normal GOF Test on Detected Observations Only
5% Shapiro Wilk P Value	0	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.231	Lilliefors GOF Test
5% Lilliefors Critical Value	0.0401	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	44.71	KM Standard Error of Mean	2.982
KM SD	91.11	95% KM (BCA) UCL	49.45
95% KM (t) UCL	49.61	95% KM (Percentile Bootstrap) UCL	49.58
95% KM (z) UCL	49.61	95% KM Bootstrap t UCL	50.25
90% KM Chebyshev UCL	53.65	95% KM Chebyshev UCL	57.7
97.5% KM Chebyshev UCL	63.33	99% KM Chebyshev UCL	74.37

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.853	Anderson-Darling GOF Test
5% A-D Critical Value	0.794	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.0591	Kolmogorov-Smirnov GOF
5% K-S Critical Value	0.0421	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.805	k star (bias corrected MLE)	0.802
Theta hat (MLE)	103	Theta star (bias corrected MLE)	103.5
nu hat (MLE)	800.3	nu star (bias corrected)	796.8
Mean (detects)	82.95		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
 GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
 For such situations, GROS method may yield incorrect values of UCLs and BTVs
 This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	44.05
Maximum	1200	Median	2.8
SD	91.46	CV	2.076
k hat (MLE)	0.186	k star (bias corrected MLE)	0.187
Theta hat (MLE)	236.3	Theta star (bias corrected MLE)	236.1
nu hat (MLE)	349	nu star (bias corrected)	349.2
Adjusted Level of Significance (β)	0.0497		
Approximate Chi Square Value (349.24, α)	306.9	Adjusted Chi Square Value (349.24, β)	306.9
95% Gamma Approximate UCL (use when $n \geq 50$)	50.12	95% Gamma Adjusted UCL (use when $n < 50$)	50.13

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	44.71	SD (KM)	91.11
Variance (KM)	8300	SE of Mean (KM)	2.982
k hat (KM)	0.241	k star (KM)	0.241

nu hat (KM)	450.7	nu star (KM)	450.6
theta hat (KM)	185.7	theta star (KM)	185.7
80% gamma percentile (KM)	64.03	90% gamma percentile (KM)	134.5
95% gamma percentile (KM)	218.8	99% gamma percentile (KM)	444.4
Gamma Kaplan-Meier (KM) Statistics			
Approximate Chi Square Value (450.63, α)	402.4	Adjusted Chi Square Value (450.63, β)	402.3
95% Gamma Approximate KM-UCL (use when $n \geq 50$)	50.06	95% Gamma Adjusted KM-UCL (use when $n < 50$)	50.07
Lognormal GOF Test on Detected Observations Only			
Shapiro Wilk Approximate Test Statistic	0.964	Shapiro Wilk GOF Test	
5% Shapiro Wilk P Value	2.7372E-9	Detected Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.0499	Lilliefors GOF Test	
5% Lilliefors Critical Value	0.0401	Detected Data Not Lognormal at 5% Significance Level	
Detected Data Not Lognormal at 5% Significance Level			
Lognormal ROS Statistics Using Imputed Non-Detects			
Mean in Original Scale	45.45	Mean in Log Scale	2.212
SD in Original Scale	90.81	SD in Log Scale	2.03
95% t UCL (assumes normality of ROS data)	50.34	95% Percentile Bootstrap UCL	50.26
95% BCA Bootstrap UCL	50.98	95% Bootstrap t UCL	51.04
95% H-UCL (Log ROS)	87.89		
Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution			
KM Mean (logged)	1.896	KM Geo Mean	6.657
KM SD (logged)	2.21	95% Critical H Value (KM-Log)	3.271
KM Standard Error of Mean (logged)	0.0768	95% H-UCL (KM -Log)	96.9
KM SD (logged)	2.21	95% Critical H Value (KM-Log)	3.271
KM Standard Error of Mean (logged)	0.0768		
DL/2 Statistics			
DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	45.71	Mean in Log Scale	2.36
SD in Original Scale	90.68	SD in Log Scale	1.871
95% t UCL (Assumes normality)	50.59	95% H-Stat UCL	72.89
DL/2 is not a recommended method, provided for comparisons and historical reasons			
Nonparametric Distribution Free UCL Statistics			
Data do not follow a Discernible Distribution at 5% Significance Level			
Suggested UCL to Use			
95% KM (Chebyshev) UCL	57.7		

**ProUCL Statistical Evaluation of Total Petroleum Hydrocarbons (C33-C44) in Soil (0 to 10 feet bgs)
(Data in milligrams per kilogram [mg/kg])**

Defense Fuel Support Point Norwalk

15306 Norwalk Boulevard

Norwalk, California

General Statistics

Total Number of Observations	936	Number of Distinct Observations	261
		Number of Missing Observations	39
Number of Detects	470	Number of Non-Detects	466
Number of Distinct Detects	260	Number of Distinct Non-Detects	3
Minimum Detect	0.55	Minimum Non-Detect	1
Maximum Detect	1268	Maximum Non-Detect	50
Variance Detects	10911	Percent Non-Detects	49.79%
Mean Detects	76.13	SD Detects	104.5
Median Detects	44.4	CV Detects	1.372
Skewness Detects	5.638	Kurtosis Detects	51.73
Mean of Logged Detects	3.676	SD of Logged Detects	1.289

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.609	Normal GOF Test on Detected Observations Only
5% Shapiro Wilk P Value	0	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.235	Lilliefors GOF Test
5% Lilliefors Critical Value	0.0412	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	38.88	KM Standard Error of Mean	2.713
KM SD	82.88	95% KM (BCA) UCL	43.07
95% KM (t) UCL	43.35	95% KM (Percentile Bootstrap) UCL	43.74
95% KM (z) UCL	43.34	95% KM Bootstrap t UCL	44.1
90% KM Chebyshev UCL	47.02	95% KM Chebyshev UCL	50.7
97.5% KM Chebyshev UCL	55.82	99% KM Chebyshev UCL	65.87

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.509	Anderson-Darling GOF Test
5% A-D Critical Value	0.79	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.0549	Kolmogorov-Smirnov GOF
5% K-S Critical Value	0.0433	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.892	k star (bias corrected MLE)	0.888
Theta hat (MLE)	85.35	Theta star (bias corrected MLE)	85.77
nu hat (MLE)	838.4	nu star (bias corrected)	834.4
Mean (detects)	76.13		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	38.23
Maximum	1268	Median	0.6
SD	83.21	CV	2.176
k hat (MLE)	0.182	k star (bias corrected MLE)	0.183
Theta hat (MLE)	209.5	Theta star (bias corrected MLE)	209.4
nu hat (MLE)	341.6	nu star (bias corrected)	341.8
Adjusted Level of Significance (β)	0.0497		
Approximate Chi Square Value (341.84, α)	300	Adjusted Chi Square Value (341.84, β)	299.9
95% Gamma Approximate UCL (use when $n \geq 50$)	43.56	95% Gamma Adjusted UCL (use when $n < 50$)	43.57

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	38.88	SD (KM)	82.88
Variance (KM)	6868	SE of Mean (KM)	2.713
k hat (KM)	0.22	k star (KM)	0.22

nu hat (KM)	412	nu star (KM)	412
theta hat (KM)	176.7	theta star (KM)	176.7
80% gamma percentile (KM)	53.67	90% gamma percentile (KM)	117.5
95% gamma percentile (KM)	195.2	99% gamma percentile (KM)	406.2
Gamma Kaplan-Meier (KM) Statistics			
Approximate Chi Square Value (412.01, α)	366	Adjusted Chi Square Value (412.01, β)	365.9
95% Gamma Approximate KM-UCL (use when $n \geq 50$)	43.77	95% Gamma Adjusted KM-UCL (use when $n < 50$)	43.78
Lognormal GOF Test on Detected Observations Only			
Shapiro Wilk Approximate Test Statistic	0.955	Shapiro Wilk GOF Test	
5% Shapiro Wilk P Value	9.992E-16	Detected Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.0638	Lilliefors GOF Test	
5% Lilliefors Critical Value	0.0412	Detected Data Not Lognormal at 5% Significance Level	
Detected Data Not Lognormal at 5% Significance Level			
Lognormal ROS Statistics Using Imputed Non-Detects			
Mean in Original Scale	39.93	Mean in Log Scale	2.216
SD in Original Scale	82.46	SD in Log Scale	1.909
95% t UCL (assumes normality of ROS data)	44.37	95% Percentile Bootstrap UCL	44.61
95% BCA Bootstrap UCL	45.01	95% Bootstrap t UCL	45.15
95% H-UCL (Log ROS)	68.24		
Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution			
KM Mean (logged)	1.788	KM Geo Mean	5.977
KM SD (logged)	2.16	95% Critical H Value (KM-Log)	3.218
KM Standard Error of Mean (logged)	0.0791	95% H-UCL (KM -Log)	77.38
KM SD (logged)	2.16	95% Critical H Value (KM-Log)	3.218
KM Standard Error of Mean (logged)	0.0791		
DL/2 Statistics			
DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	39.95	Mean in Log Scale	2.248
SD in Original Scale	82.44	SD in Log Scale	1.871
95% t UCL (Assumes normality)	44.39	95% H-Stat UCL	65.08
DL/2 is not a recommended method, provided for comparisons and historical reasons			
Nonparametric Distribution Free UCL Statistics			
Data do not follow a Discernible Distribution at 5% Significance Level			
Suggested UCL to Use			
95% KM (Chebyshev) UCL	50.7		

**ProUCL Statistical Evaluation of Total Petroleum Hydrocarbons (C23-C44) in Soil (0 to 10 feet bgs)
(Data in milligrams per kilogram [mg/kg])**

Defense Fuel Support Point Norwalk

15306 Norwalk Boulevard

Norwalk, California

General Statistics

Total Number of Observations	923	Number of Distinct Observations	356
		Number of Missing Observations	52
Number of Detects	498	Number of Non-Detects	425
Number of Distinct Detects	356	Number of Distinct Non-Detects	3
Minimum Detect	1	Minimum Non-Detect	1
Maximum Detect	1710	Maximum Non-Detect	31
Variance Detects	40732	Percent Non-Detects	46.05%
Mean Detects	154.4	SD Detects	201.8
Median Detects	80.65	CV Detects	1.307
Skewness Detects	3.655	Kurtosis Detects	20.38
Mean of Logged Detects	4.308	SD of Logged Detects	1.377

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.671	Normal GOF Test on Detected Observations Only
5% Shapiro Wilk P Value	0	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.224	Lilliefors GOF Test
5% Lilliefors Critical Value	0.0401	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	83.97	KM Standard Error of Mean	5.488
KM SD	166.6	95% KM (BCA) UCL	93.61
95% KM (t) UCL	93.01	95% KM (Percentile Bootstrap) UCL	93.34
95% KM (z) UCL	93	95% KM Bootstrap t UCL	94.35
90% KM Chebyshev UCL	100.4	95% KM Chebyshev UCL	107.9
97.5% KM Chebyshev UCL	118.2	99% KM Chebyshev UCL	138.6

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.302	Anderson-Darling GOF Test
5% A-D Critical Value	0.794	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.0572	Kolmogorov-Smirnov GOF
5% K-S Critical Value	0.0421	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.811	k star (bias corrected MLE)	0.807
Theta hat (MLE)	190.4	Theta star (bias corrected MLE)	191.3
nu hat (MLE)	807.4	nu star (bias corrected)	803.8
Mean (detects)	154.4		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	83.29
Maximum	1710	Median	9.3
SD	167	CV	2.005
k hat (MLE)	0.178	k star (bias corrected MLE)	0.178
Theta hat (MLE)	468.8	Theta star (bias corrected MLE)	468.4
nu hat (MLE)	328	nu star (bias corrected)	328.3
Adjusted Level of Significance (β)	0.0497		
Approximate Chi Square Value (328.25, α)	287.3	Adjusted Chi Square Value (328.25, β)	287.2
95% Gamma Approximate UCL (use when $n \geq 50$)	95.17	95% Gamma Adjusted UCL (use when $n < 50$)	95.19

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	83.97	SD (KM)	166.6
Variance (KM)	27740	SE of Mean (KM)	5.488
k hat (KM)	0.254	k star (KM)	0.254

nu hat (KM)	469.3	nu star (KM)	469.1
theta hat (KM)	330.3	theta star (KM)	330.5
80% gamma percentile (KM)	122.7	90% gamma percentile (KM)	251.7
95% gamma percentile (KM)	404.5	99% gamma percentile (KM)	810.2
Gamma Kaplan-Meier (KM) Statistics			
Approximate Chi Square Value (469.06, α)	419.8	Adjusted Chi Square Value (469.06, β)	419.8
95% Gamma Approximate KM-UCL (use when $n \geq 50$)	93.82	95% Gamma Adjusted KM-UCL (use when $n < 50$)	93.83
Lognormal GOF Test on Detected Observations Only			
Shapiro Wilk Approximate Test Statistic	0.956	Shapiro Wilk GOF Test	
5% Shapiro Wilk P Value	1.554E-15	Detected Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.0644	Lilliefors GOF Test	
5% Lilliefors Critical Value	0.0401	Detected Data Not Lognormal at 5% Significance Level	
Detected Data Not Lognormal at 5% Significance Level			
Lognormal ROS Statistics Using Imputed Non-Detects			
Mean in Original Scale	85.55	Mean in Log Scale	2.824
SD in Original Scale	165.9	SD in Log Scale	2.063
95% t UCL (assumes normality of ROS data)	94.54	95% Percentile Bootstrap UCL	94.67
95% BCA Bootstrap UCL	96.85	95% Bootstrap t UCL	95.45
95% H-UCL (Log ROS)	174.7		
Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution			
KM Mean (logged)	2.406	KM Geo Mean	11.09
KM SD (logged)	2.321	95% Critical H Value (KM-Log)	3.392
KM Standard Error of Mean (logged)	0.0784	95% H-UCL (KM -Log)	212.3
KM SD (logged)	2.321	95% Critical H Value (KM-Log)	3.392
KM Standard Error of Mean (logged)	0.0784		
DL/2 Statistics			
DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	84.87	Mean in Log Scale	2.691
SD in Original Scale	166.2	SD in Log Scale	2.158
95% t UCL (Assumes normality)	93.88	95% H-Stat UCL	190.1
DL/2 is not a recommended method, provided for comparisons and historical reasons			
Nonparametric Distribution Free UCL Statistics			
Data do not follow a Discernible Distribution at 5% Significance Level			
Suggested UCL to Use			
95% KM (Chebyshev) UCL	107.9		

VOLATILE ORGANIC COMPOUNDS IN SOIL (0 TO 10 FEET BGS)

**ProUCL Statistical Evaluation of Acetone in Soil (0 to 10 feet bgs)
(Data in milligrams per kilogram [mg/kg])**

Defense Fuel Support Point Norwalk

15306 Norwalk Boulevard

Norwalk, California

General Statistics

Total Number of Observations	942	Number of Distinct Observations	30
		Number of Missing Observations	19
Number of Detects	51	Number of Non-Detects	891
Number of Distinct Detects	29	Number of Distinct Non-Detects	1
Minimum Detect	0.051	Minimum Non-Detect	0.05
Maximum Detect	0.13	Maximum Non-Detect	0.05
Variance Detects	4.4195E-4	Percent Non-Detects	94.59%
Mean Detects	0.0706	SD Detects	0.021
Median Detects	0.064	CV Detects	0.298
Skewness Detects	1.245	Kurtosis Detects	0.672
Mean of Logged Detects	-2.688	SD of Logged Detects	0.268

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.827	Normal GOF Test on Detected Observations Only
5% Shapiro Wilk P Value	9.4901E-8	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.194	Lilliefors GOF Test
5% Lilliefors Critical Value	0.123	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.0511	KM Standard Error of Mean	2.2145E-4
KM SD	0.00673	95% KM (BCA) UCL	0.0515
95% KM (t) UCL	0.0515	95% KM (Percentile Bootstrap) UCL	0.0515
95% KM (z) UCL	0.0515	95% KM Bootstrap t UCL	0.0515
90% KM Chebyshev UCL	0.0518	95% KM Chebyshev UCL	0.0521
97.5% KM Chebyshev UCL	0.0525	99% KM Chebyshev UCL	0.0533

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	2.325	Anderson-Darling GOF Test
5% A-D Critical Value	0.749	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.171	Kolmogorov-Smirnov GOF
5% K-S Critical Value	0.124	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	13.47	k star (bias corrected MLE)	12.69
Theta hat (MLE)	0.00524	Theta star (bias corrected MLE)	0.00557
nu hat (MLE)	1374	nu star (bias corrected)	1295
Mean (detects)	0.0706		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.0153
Maximum	0.13	Median	0.01
SD	0.0155	CV	1.012
k hat (MLE)	2.531	k star (bias corrected MLE)	2.523
Theta hat (MLE)	0.00604	Theta star (bias corrected MLE)	0.00605
nu hat (MLE)	4768	nu star (bias corrected)	4754
Adjusted Level of Significance (β)	0.0497		
Approximate Chi Square Value (N/A, α)	4595	Adjusted Chi Square Value (N/A, β)	4595
95% Gamma Approximate UCL (use when $n \geq 50$)	0.0158	95% Gamma Adjusted UCL (use when $n < 50$)	0.0158

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0511	SD (KM)	0.00673
Variance (KM)	4.5289E-5	SE of Mean (KM)	2.2145E-4
k hat (KM)	57.7	k star (KM)	57.51

nu hat (KM)	108702	nu star (KM)	108357
theta hat (KM)	8.8597E-4	theta star (KM)	8.8879E-4
80% gamma percentile (KM)	0.0567	90% gamma percentile (KM)	0.0599
95% gamma percentile (KM)	0.0627	99% gamma percentile (KM)	0.0681
Gamma Kaplan-Meier (KM) Statistics			
Approximate Chi Square Value (N/A, α)	107592	Adjusted Chi Square Value (N/A, β)	107591
95% Gamma Approximate KM-UCL (use when $n \geq 50$)	0.0515	95% Gamma Adjusted KM-UCL (use when $n < 50$)	0.0515
Lognormal GOF Test on Detected Observations Only			
Shapiro Wilk Approximate Test Statistic	0.871	Shapiro Wilk GOF Test	
5% Shapiro Wilk P Value	9.7279E-6	Detected Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.156	Lilliefors GOF Test	
5% Lilliefors Critical Value	0.123	Detected Data Not Lognormal at 5% Significance Level	
Detected Data Not Lognormal at 5% Significance Level			
Lognormal ROS Statistics Using Imputed Non-Detects			
Mean in Original Scale	0.0194	Mean in Log Scale	-4.228
SD in Original Scale	0.0167	SD in Log Scale	0.76
95% t UCL (assumes normality of ROS data)	0.0203	95% Percentile Bootstrap UCL	0.0204
95% BCA Bootstrap UCL	0.0204	95% Bootstrap t UCL	0.0203
95% H-UCL (Log ROS)	0.0204		
Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution			
KM Mean (logged)	-2.979	KM Geo Mean	0.0508
KM SD (logged)	0.0931	95% Critical H Value (KM-Log)	N/A
KM Standard Error of Mean (logged)	0.00306	95% H-UCL (KM -Log)	N/A
KM SD (logged)	0.0931	95% Critical H Value (KM-Log)	N/A
KM Standard Error of Mean (logged)	0.00306		
DL/2 Statistics			
DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.0275	Mean in Log Scale	-3.635
SD in Original Scale	0.0114	SD in Log Scale	0.235
95% t UCL (Assumes normality)	0.0281	95% H-Stat UCL	0.0275
DL/2 is not a recommended method, provided for comparisons and historical reasons			
Nonparametric Distribution Free UCL Statistics			
Data do not follow a Discernible Distribution at 5% Significance Level			
Suggested UCL to Use			
95% KM (t) UCL	0.0515	KM H-UCL	N/A
95% KM (BCA) UCL	0.0515		

**ProUCL Statistical Evaluation of Ethylbenzene in Soil (0 to 10 feet bgs)
(Data in milligrams per kilogram [mg/kg])**

Defense Fuel Support Point Norwalk
15306 Norwalk Boulevard
Norwalk, California

General Statistics

Total Number of Observations	942	Number of Distinct Observations	7
		Number of Missing Observations	19
Number of Detects	10	Number of Non-Detects	932
Number of Distinct Detects	7	Number of Distinct Non-Detects	1
Minimum Detect	0.002	Minimum Non-Detect	0.002
Maximum Detect	0.0059	Maximum Non-Detect	0.002
Variance Detects	1.3329E-6	Percent Non-Detects	98.94%
Mean Detects	0.00268	SD Detects	0.00115
Median Detects	0.0023	CV Detects	0.431
Skewness Detects	2.935	Kurtosis Detects	8.927
Mean of Logged Detects	-5.976	SD of Logged Detects	0.312

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.549	Shapiro Wilk GOF Test
5% Shapiro Wilk Critical Value	0.842	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.393	Lilliefors GOF Test
5% Lilliefors Critical Value	0.262	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.00201	KM Standard Error of Mean	4.5551E-6
KM SD	1.3263E-4	95% KM (BCA) UCL	0.00202
95% KM (t) UCL	0.00201	95% KM (Percentile Bootstrap) UCL	0.00202
95% KM (z) UCL	0.00201	95% KM Bootstrap t UCL	0.00203
90% KM Chebyshev UCL	0.00202	95% KM Chebyshev UCL	0.00203
97.5% KM Chebyshev UCL	0.00204	99% KM Chebyshev UCL	0.00205

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.635	Anderson-Darling GOF Test
5% A-D Critical Value	0.726	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.348	Kolmogorov-Smirnov GOF
5% K-S Critical Value	0.267	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	9.364	k star (bias corrected MLE)	6.622
Theta hat (MLE)	2.8619E-4	Theta star (bias corrected MLE)	4.0472E-4
nu hat (MLE)	187.3	nu star (bias corrected)	132.4
Mean (detects)	0.00268		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.002	Mean	0.00992
Maximum	0.01	Median	0.01
SD	7.5903E-4	CV	0.0765
k hat (MLE)	74.19	k star (bias corrected MLE)	73.96
Theta hat (MLE)	1.3374E-4	Theta star (bias corrected MLE)	1.3416E-4
nu hat (MLE)	139781	nu star (bias corrected)	139337
Adjusted Level of Significance (β)	0.0497		
Approximate Chi Square Value (N/A, α)	138470	Adjusted Chi Square Value (N/A, β)	138468
95% Gamma Approximate UCL (use when $n \geq 50$)	0.00998	95% Gamma Adjusted UCL (use when $n < 50$)	0.00998

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.00201	SD (KM)	1.3263E-4
Variance (KM)	1.7591E-8	SE of Mean (KM)	4.5551E-6
k hat (KM)	229	k star (KM)	228.3

nu hat (KM)	431494	nu star (KM)	430121
theta hat (KM)	8.7640E-6	theta star (KM)	8.7919E-6
80% gamma percentile (KM)	0.00212	90% gamma percentile (KM)	0.00218
95% gamma percentile (KM)	0.00223	99% gamma percentile (KM)	0.00233
Gamma Kaplan-Meier (KM) Statistics			
Approximate Chi Square Value (N/A, α)	428597	Adjusted Chi Square Value (N/A, β)	428594
95% Gamma Approximate KM-UCL (use when $n \geq 50$)	0.00201	95% Gamma Adjusted KM-UCL (use when $n < 50$)	0.00201
Lognormal GOF Test on Detected Observations Only			
Shapiro Wilk Test Statistic	0.657	Shapiro Wilk GOF Test	
5% Shapiro Wilk Critical Value	0.842	Detected Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.321	Lilliefors GOF Test	
5% Lilliefors Critical Value	0.262	Detected Data Not Lognormal at 5% Significance Level	
Detected Data Not Lognormal at 5% Significance Level			
Lognormal ROS Statistics Using Imputed Non-Detects			
Mean in Original Scale	2.4793E-4	Mean in Log Scale	-8.932
SD in Original Scale	3.7745E-4	SD in Log Scale	1.126
95% t UCL (assumes normality of ROS data)	2.6818E-4	95% Percentile Bootstrap UCL	2.6942E-4
95% BCA Bootstrap UCL	2.7031E-4	95% Bootstrap t UCL	2.7050E-4
95% H-UCL (Log ROS)	2.6981E-4		
Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution			
KM Mean (logged)	-6.212	KM Geo Mean	0.00201
KM SD (logged)	0.0391	95% Critical H Value (KM-Log)	N/A
KM Standard Error of Mean (logged)	0.00134	95% H-UCL (KM -Log)	N/A
KM SD (logged)	0.0391	95% Critical H Value (KM-Log)	N/A
KM Standard Error of Mean (logged)	0.00134		
DL/2 Statistics			
DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.00102	Mean in Log Scale	-6.898
SD in Original Scale	2.0597E-4	SD in Log Scale	0.1
95% t UCL (Assumes normality)	0.00103	95% H-Stat UCL	0.00102
DL/2 is not a recommended method, provided for comparisons and historical reasons			
Nonparametric Distribution Free UCL Statistics			
Data do not follow a Discernible Distribution at 5% Significance Level			
Suggested UCL to Use			
95% KM (t) UCL	0.00201	KM H-UCL	N/A
95% KM (BCA) UCL	0.00202		

**ProUCL Statistical Evaluation of Toluene in Soil (0 to 10 feet bgs)
(Data in milligrams per kilogram [mg/kg])**

Defense Fuel Support Point Norwalk

15306 Norwalk Boulevard

Norwalk, California

General Statistics

Total Number of Observations	942	Number of Distinct Observations	27
		Number of Missing Observations	19
Number of Detects	98	Number of Non-Detects	844
Number of Distinct Detects	27	Number of Distinct Non-Detects	1
Minimum Detect	0.002	Minimum Non-Detect	0.002
Maximum Detect	0.0073	Maximum Non-Detect	0.002
Variance Detects	1.0299E-6	Percent Non-Detects	89.6%
Mean Detects	0.00287	SD Detects	0.00101
Median Detects	0.00255	CV Detects	0.354
Skewness Detects	2.143	Kurtosis Detects	5.717
Mean of Logged Detects	-5.902	SD of Logged Detects	0.292

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.772	Normal GOF Test on Detected Observations Only
5% Shapiro Wilk P Value	0	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.196	Lilliefors GOF Test
5% Lilliefors Critical Value	0.0897	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.00209	KM Standard Error of Mean	1.3746E-5
KM SD	4.1972E-4	95% KM (BCA) UCL	0.00212
95% KM (t) UCL	0.00211	95% KM (Percentile Bootstrap) UCL	0.00211
95% KM (z) UCL	0.00211	95% KM Bootstrap t UCL	0.00212
90% KM Chebyshev UCL	0.00213	95% KM Chebyshev UCL	0.00215
97.5% KM Chebyshev UCL	0.00218	99% KM Chebyshev UCL	0.00223

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	3.971	Anderson-Darling GOF Test
5% A-D Critical Value	0.752	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.157	Kolmogorov-Smirnov GOF
5% K-S Critical Value	0.0903	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	10.71	k star (bias corrected MLE)	10.39
Theta hat (MLE)	2.6777E-4	Theta star (bias corrected MLE)	2.7605E-4
nu hat (MLE)	2099	nu star (bias corrected)	2036
Mean (detects)	0.00287		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.002	Mean	0.00926
Maximum	0.01	Median	0.01
SD	0.0022	CV	0.238
k hat (MLE)	8.815	k star (bias corrected MLE)	8.788
Theta hat (MLE)	0.00105	Theta star (bias corrected MLE)	0.00105
nu hat (MLE)	16608	nu star (bias corrected)	16556
Adjusted Level of Significance (β)	0.0497		
Approximate Chi Square Value (N/A, α)	16258	Adjusted Chi Square Value (N/A, β)	16258
95% Gamma Approximate UCL (use when $n \geq 50$)	0.00943	95% Gamma Adjusted UCL (use when $n < 50$)	0.00943

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.00209	SD (KM)	4.1972E-4
Variance (KM)	1.7617E-7	SE of Mean (KM)	1.3746E-5
k hat (KM)	24.8	k star (KM)	24.72

nu hat (KM)	46724	nu star (KM)	46577
theta hat (KM)	8.4281E-5	theta star (KM)	8.4548E-5
80% gamma percentile (KM)	0.00243	90% gamma percentile (KM)	0.00264
95% gamma percentile (KM)	0.00283	99% gamma percentile (KM)	0.00319
Gamma Kaplan-Meier (KM) Statistics			
Approximate Chi Square Value (N/A, α)	46076	Adjusted Chi Square Value (N/A, β)	46075
95% Gamma Approximate KM-UCL (use when $n \geq 50$)	0.00211	95% Gamma Adjusted KM-UCL (use when $n < 50$)	0.00211
Lognormal GOF Test on Detected Observations Only			
Shapiro Wilk Approximate Test Statistic	0.872	Shapiro Wilk GOF Test	
5% Shapiro Wilk P Value	6.241E-12	Detected Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.142	Lilliefors GOF Test	
5% Lilliefors Critical Value	0.0897	Detected Data Not Lognormal at 5% Significance Level	
Detected Data Not Lognormal at 5% Significance Level			
Lognormal ROS Statistics Using Imputed Non-Detects			
Mean in Original Scale	9.9859E-4	Mean in Log Scale	-7.177
SD in Original Scale	8.2528E-4	SD in Log Scale	0.734
95% t UCL (assumes normality of ROS data)	0.00104	95% Percentile Bootstrap UCL	0.00104
95% BCA Bootstrap UCL	0.00104	95% Bootstrap t UCL	0.00105
95% H-UCL (Log ROS)	0.00105		
Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution			
KM Mean (logged)	-6.182	KM Geo Mean	0.00207
KM SD (logged)	0.134	95% Critical H Value (KM-Log)	1.663
KM Standard Error of Mean (logged)	0.00438	95% H-UCL (KM -Log)	0.0021
KM SD (logged)	0.134	95% Critical H Value (KM-Log)	1.663
KM Standard Error of Mean (logged)	0.00438		
DL/2 Statistics			
DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.00119	Mean in Log Scale	-6.803
SD in Original Scale	6.5691E-4	SD in Log Scale	0.321
95% t UCL (Assumes normality)	0.00123	95% H-Stat UCL	0.00119
DL/2 is not a recommended method, provided for comparisons and historical reasons			
Nonparametric Distribution Free UCL Statistics			
Data do not follow a Discernible Distribution at 5% Significance Level			
Suggested UCL to Use			
95% KM (t) UCL	0.00211	KM H-UCL	0.0021
95% KM (BCA) UCL	0.00212		

**ProUCL Statistical Evaluation of 1,2,4-Trimethylbenzene in Soil (0 to 10 feet bgs)
(Data in milligrams per kilogram [mg/kg])**

Defense Fuel Support Point Norwalk

15306 Norwalk Boulevard

Norwalk, California

General Statistics

Total Number of Observations	942	Number of Distinct Observations	4
		Number of Missing Observations	19
Number of Detects	5	Number of Non-Detects	937
Number of Distinct Detects	4	Number of Distinct Non-Detects	1
Minimum Detect	0.005	Minimum Non-Detect	0.005
Maximum Detect	0.0056	Maximum Non-Detect	0.005
Variance Detects	4.7000E-8	Percent Non-Detects	99.47%
Mean Detects	0.00528	SD Detects	2.1679E-4
Median Detects	0.0053	CV Detects	0.0411
Skewness Detects	0.422	Kurtosis Detects	1.435
Mean of Logged Detects	-5.244	SD of Logged Detects	0.0409

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.951	Shapiro Wilk GOF Test
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.263	Lilliefors GOF Test
5% Lilliefors Critical Value	0.343	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.005	KM Standard Error of Mean	9.0227E-7
KM SD	2.4769E-5	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.005	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.005	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.005	95% KM Chebyshev UCL	0.00501
97.5% KM Chebyshev UCL	0.00501	99% KM Chebyshev UCL	0.00501

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.296	Anderson-Darling GOF Test
5% A-D Critical Value	0.678	detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.254	Kolmogorov-Smirnov GOF
5% K-S Critical Value	0.357	detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	745.6	k star (bias corrected MLE)	298.4
Theta hat (MLE)	7.0815E-6	Theta star (bias corrected MLE)	1.7696E-5
nu hat (MLE)	7456	nu star (bias corrected)	2984
Mean (detects)	0.00528		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.005	Mean	0.00997
Maximum	0.01	Median	0.01
SD	3.4344E-4	CV	0.0344
k hat (MLE)	565.1	k star (bias corrected MLE)	563.3
Theta hat (MLE)	1.7651E-5	Theta star (bias corrected MLE)	1.7707E-5
nu hat (MLE)	1064698	nu star (bias corrected)	1061309
Adjusted Level of Significance (β)	0.0497		
Approximate Chi Square Value (N/A, α)	1058914	Adjusted Chi Square Value (N/A, β)	1058910
95% Gamma Approximate UCL (use when $n \geq 50$)	0.01	95% Gamma Adjusted UCL (use when $n < 50$)	0.01

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.005	SD (KM)	2.4769E-5
Variance (KM)	6.135E-10	SE of Mean (KM)	9.0227E-7
k hat (KM)	40774	k star (KM)	40644

nu hat (KM)	76817954	nu star (KM)	76573312
theta hat (KM)	1.2266E-7	theta star (KM)	1.2306E-7
80% gamma percentile (KM)	0.00502	90% gamma percentile (KM)	0.00503
95% gamma percentile (KM)	0.00504	99% gamma percentile (KM)	0.00506
Gamma Kaplan-Meier (KM) Statistics			
Approximate Chi Square Value (N/A, α)	76552958	Adjusted Chi Square Value (N/A, β)	76552927
95% Gamma Approximate KM-UCL (use when $n \geq 50$)	0.005	95% Gamma Adjusted KM-UCL (use when $n < 50$)	0.005
Lognormal GOF Test on Detected Observations Only			
Shapiro Wilk Test Statistic	0.955	Shapiro Wilk GOF Test	
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.257	Lilliefors GOF Test	
5% Lilliefors Critical Value	0.343	Detected Data appear Lognormal at 5% Significance Level	
Detected Data appear Lognormal at 5% Significance Level			
Lognormal ROS Statistics Using Imputed Non-Detects			
Mean in Original Scale	0.0031	Mean in Log Scale	-5.794
SD in Original Scale	6.0543E-4	SD in Log Scale	0.193
95% t UCL (assumes normality of ROS data)	0.00314	95% Percentile Bootstrap UCL	0.00314
95% BCA Bootstrap UCL	0.00314	95% Bootstrap t UCL	0.00314
95% H-UCL (Log ROS)	0.00314		
Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution			
KM Mean (logged)	-5.298	KM Geo Mean	0.005
KM SD (logged)	0.00473	95% Critical H Value (KM-Log)	N/A
KM Standard Error of Mean (logged)	1.7238E-4	95% H-UCL (KM -Log)	N/A
KM SD (logged)	0.00473	95% Critical H Value (KM-Log)	N/A
KM Standard Error of Mean (logged)	1.7238E-4		
DL/2 Statistics			
DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.00251	Mean in Log Scale	-5.987
SD in Original Scale	2.0260E-4	SD in Log Scale	0.0544
95% t UCL (Assumes normality)	0.00253	95% H-Stat UCL	N/A
DL/2 is not a recommended method, provided for comparisons and historical reasons			
Nonparametric Distribution Free UCL Statistics			
Detected Data appear Normal Distributed at 5% Significance Level			
Suggested UCL to Use			
95% KM (t) UCL	0.005		

**ProUCL Statistical Evaluation of o-Xylene in Soil (0 to 10 feet bgs)
(Data in milligrams per kilogram [mg/kg])**

Defense Fuel Support Point Norwalk

15306 Norwalk Boulevard

Norwalk, California

General Statistics

Total Number of Observations	942	Number of Distinct Observations	13
		Number of Missing Observations	19
Number of Detects	13	Number of Non-Detects	929
Number of Distinct Detects	12	Number of Distinct Non-Detects	1
Minimum Detect	0.0025	Minimum Non-Detect	0.002
Maximum Detect	0.0089	Maximum Non-Detect	0.002
Variance Detects	3.4083E-6	Percent Non-Detects	98.62%
Mean Detects	0.0066	SD Detects	0.00185
Median Detects	0.0071	CV Detects	0.28
Skewness Detects	-0.934	Kurtosis Detects	0.549
Mean of Logged Detects	-5.069	SD of Logged Detects	0.351

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.928	Shapiro Wilk GOF Test
5% Shapiro Wilk Critical Value	0.866	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.201	Lilliefors GOF Test
5% Lilliefors Critical Value	0.234	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.00206	KM Standard Error of Mean	1.9522E-5
KM SD	5.7568E-4	95% KM (BCA) UCL	0.0021
95% KM (t) UCL	0.0021	95% KM (Percentile Bootstrap) UCL	0.0021
95% KM (z) UCL	0.0021	95% KM Bootstrap t UCL	0.0021
90% KM Chebyshev UCL	0.00212	95% KM Chebyshev UCL	0.00215
97.5% KM Chebyshev UCL	0.00219	99% KM Chebyshev UCL	0.00226

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.653	Anderson-Darling GOF Test
5% A-D Critical Value	0.734	detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.231	Kolmogorov-Smirnov GOF
5% K-S Critical Value	0.237	detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	10.51	k star (bias corrected MLE)	8.136
Theta hat (MLE)	6.2794E-4	Theta star (bias corrected MLE)	8.1117E-4
nu hat (MLE)	273.3	nu star (bias corrected)	211.5
Mean (detects)	0.0066		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
 GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
 For such situations, GROS method may yield incorrect values of UCLs and BTVs
 This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0025	Mean	0.00995
Maximum	0.01	Median	0.01
SD	4.4829E-4	CV	0.045
k hat (MLE)	294.6	k star (bias corrected MLE)	293.7
Theta hat (MLE)	3.3782E-5	Theta star (bias corrected MLE)	3.3889E-5
nu hat (MLE)	555084	nu star (bias corrected)	553317
Adjusted Level of Significance (β)	0.0497		
Approximate Chi Square Value (N/A, α)	551588	Adjusted Chi Square Value (N/A, β)	551585
95% Gamma Approximate UCL (use when n \geq 50)	0.00998	95% Gamma Adjusted UCL (use when n<50)	0.00998

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.00206	SD (KM)	5.7568E-4
Variance (KM)	3.3141E-7	SE of Mean (KM)	1.9522E-5
k hat (KM)	12.85	k star (KM)	12.81

nu hat (KM)	24206	nu star (KM)	24130
theta hat (KM)	1.6060E-4	theta star (KM)	1.6111E-4
80% gamma percentile (KM)	0.00253	90% gamma percentile (KM)	0.00283
95% gamma percentile (KM)	0.00309	99% gamma percentile (KM)	0.00364
Gamma Kaplan-Meier (KM) Statistics			
Approximate Chi Square Value (N/A, α)	23770	Adjusted Chi Square Value (N/A, β)	23769
95% Gamma Approximate KM-UCL (use when $n \geq 50$)	0.00209	95% Gamma Adjusted KM-UCL (use when $n < 50$)	0.00209
Lognormal GOF Test on Detected Observations Only			
Shapiro Wilk Test Statistic	0.833	Shapiro Wilk GOF Test	
5% Shapiro Wilk Critical Value	0.866	Detected Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.235	Lilliefors GOF Test	
5% Lilliefors Critical Value	0.234	Detected Data Not Lognormal at 5% Significance Level	
Detected Data Not Lognormal at 5% Significance Level			
Lognormal ROS Statistics Using Imputed Non-Detects			
Mean in Original Scale	7.8036E-4	Mean in Log Scale	-7.683
SD in Original Scale	0.00101	SD in Log Scale	1.03
95% t UCL (assumes normality of ROS data)	8.3466E-4	95% Percentile Bootstrap UCL	8.3604E-4
95% BCA Bootstrap UCL	8.4083E-4	95% Bootstrap t UCL	8.3860E-4
95% H-UCL (Log ROS)	8.4049E-4		
Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution			
KM Mean (logged)	-6.199	KM Geo Mean	0.00203
KM SD (logged)	0.139	95% Critical H Value (KM-Log)	1.664
KM Standard Error of Mean (logged)	0.00473	95% H-UCL (KM -Log)	0.00207
KM SD (logged)	0.139	95% Critical H Value (KM-Log)	1.664
KM Standard Error of Mean (logged)	0.00473		
DL/2 Statistics			
DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.00108	Mean in Log Scale	-6.882
SD in Original Scale	6.8610E-4	SD in Log Scale	0.218
95% t UCL (Assumes normality)	0.00111	95% H-Stat UCL	0.00106
DL/2 is not a recommended method, provided for comparisons and historical reasons			
Nonparametric Distribution Free UCL Statistics			
Detected Data appear Normal Distributed at 5% Significance Level			
Suggested UCL to Use			
95% KM (t) UCL	0.0021		

**ProUCL Statistical Evaluation of m,p-Xylene in Soil (0 to 10 feet bgs)
(Data in milligrams per kilogram [mg/kg])**

Defense Fuel Support Point Norwalk

15306 Norwalk Boulevard

Norwalk, California

General Statistics

Total Number of Observations	942	Number of Distinct Observations	33
		Number of Missing Observations	19
Number of Detects	76	Number of Non-Detects	866
Number of Distinct Detects	33	Number of Distinct Non-Detects	1
Minimum Detect	0.002	Minimum Non-Detect	0.002
Maximum Detect	0.024	Maximum Non-Detect	0.002
Variance Detects	3.8900E-5	Percent Non-Detects	91.93%
Mean Detects	0.00551	SD Detects	0.00624
Median Detects	0.0027	CV Detects	1.133
Skewness Detects	1.958	Kurtosis Detects	2.305
Mean of Logged Detects	-5.592	SD of Logged Detects	0.776

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.583	Normal GOF Test on Detected Observations Only
5% Shapiro Wilk P Value	0	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.346	Lilliefors GOF Test
5% Lilliefors Critical Value	0.102	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.00228	KM Standard Error of Mean	6.5671E-5
KM SD	0.002	95% KM (BCA) UCL	0.00239
95% KM (t) UCL	0.00239	95% KM (Percentile Bootstrap) UCL	0.00239
95% KM (z) UCL	0.00239	95% KM Bootstrap t UCL	0.00243
90% KM Chebyshev UCL	0.00248	95% KM Chebyshev UCL	0.00257
97.5% KM Chebyshev UCL	0.00269	99% KM Chebyshev UCL	0.00294

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	9.906	Anderson-Darling GOF Test
5% A-D Critical Value	0.771	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.282	Kolmogorov-Smirnov GOF
5% K-S Critical Value	0.104	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.427	k star (bias corrected MLE)	1.379
Theta hat (MLE)	0.00386	Theta star (bias corrected MLE)	0.00399
nu hat (MLE)	216.8	nu star (bias corrected)	209.6
Mean (detects)	0.00551		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.002	Mean	0.00964
Maximum	0.024	Median	0.01
SD	0.00214	CV	0.223
k hat (MLE)	11.89	k star (bias corrected MLE)	11.85
Theta hat (MLE)	8.1084E-4	Theta star (bias corrected MLE)	8.1338E-4
nu hat (MLE)	22393	nu star (bias corrected)	22323
Adjusted Level of Significance (β)	0.0497		
Approximate Chi Square Value (N/A, α)	21977	Adjusted Chi Square Value (N/A, β)	21976
95% Gamma Approximate UCL (use when $n \geq 50$)	0.00979	95% Gamma Adjusted UCL (use when $n < 50$)	0.00979

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.00228	SD (KM)	0.002
Variance (KM)	4.0091E-6	SE of Mean (KM)	6.5671E-5
k hat (KM)	1.3	k star (KM)	1.297

nu hat (KM)	2449	nu star (KM)	2443
theta hat (KM)	0.00176	theta star (KM)	0.00176
80% gamma percentile (KM)	0.00359	90% gamma percentile (KM)	0.00493
95% gamma percentile (KM)	0.00625	99% gamma percentile (KM)	0.00925
Gamma Kaplan-Meier (KM) Statistics			
Approximate Chi Square Value (N/A, α)	2329	Adjusted Chi Square Value (N/A, β)	2329
95% Gamma Approximate KM-UCL (use when $n \geq 50$)	0.00239	95% Gamma Adjusted KM-UCL (use when $n < 50$)	0.00239
Lognormal GOF Test on Detected Observations Only			
Shapiro Wilk Approximate Test Statistic	0.735	Shapiro Wilk GOF Test	
5% Shapiro Wilk P Value	0	Detected Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.23	Lilliefors GOF Test	
5% Lilliefors Critical Value	0.102	Detected Data Not Lognormal at 5% Significance Level	
Detected Data Not Lognormal at 5% Significance Level			
Lognormal ROS Statistics Using Imputed Non-Detects			
Mean in Original Scale	6.3602E-4	Mean in Log Scale	-9.247
SD in Original Scale	0.0023	SD in Log Scale	1.972
95% t UCL (assumes normality of ROS data)	7.5914E-4	95% Percentile Bootstrap UCL	7.6345E-4
95% BCA Bootstrap UCL	7.7803E-4	95% Bootstrap t UCL	7.8456E-4
95% H-UCL (Log ROS)	8.1704E-4		
Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution			
KM Mean (logged)	-6.164	KM Geo Mean	0.0021
KM SD (logged)	0.277	95% Critical H Value (KM-Log)	1.697
KM Standard Error of Mean (logged)	0.00908	95% H-UCL (KM -Log)	0.00222
KM SD (logged)	0.277	95% Critical H Value (KM-Log)	1.697
KM Standard Error of Mean (logged)	0.00908		
DL/2 Statistics			
DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.00136	Mean in Log Scale	-6.802
SD in Original Scale	0.00215	SD in Log Scale	0.42
95% t UCL (Assumes normality)	0.00148	95% H-Stat UCL	0.00124
DL/2 is not a recommended method, provided for comparisons and historical reasons			
Nonparametric Distribution Free UCL Statistics			
Data do not follow a Discernible Distribution at 5% Significance Level			
Suggested UCL to Use			
95% KM (Chebyshev) UCL	0.00257		

**ProUCL Statistical Evaluation of Gasoline Range Organics in Soil (0 to 10 feet bgs)
(Data in milligrams per kilogram [mg/kg])**

Defense Fuel Support Point Norwalk

15306 Norwalk Boulevard

Norwalk, California

General Statistics

Total Number of Observations	942	Number of Distinct Observations	7
		Number of Missing Observations	19
Number of Detects	7	Number of Non-Detects	935
Number of Distinct Detects	6	Number of Distinct Non-Detects	1
Minimum Detect	0.61	Minimum Non-Detect	0.5
Maximum Detect	1.3	Maximum Non-Detect	0.5
Variance Detects	0.0663	Percent Non-Detects	99.26%
Mean Detects	0.767	SD Detects	0.257
Median Detects	0.65	CV Detects	0.336
Skewness Detects	1.928	Kurtosis Detects	3.407
Mean of Logged Detects	-0.304	SD of Logged Detects	0.286

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.694	Shapiro Wilk GOF Test
5% Shapiro Wilk Critical Value	0.803	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.376	Lilliefors GOF Test
5% Lilliefors Critical Value	0.304	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.502	KM Standard Error of Mean	0.00108
KM SD	0.0308	95% KM (BCA) UCL	0.504
95% KM (t) UCL	0.504	95% KM (Percentile Bootstrap) UCL	0.504
95% KM (z) UCL	0.504	95% KM Bootstrap t UCL	0.506
90% KM Chebyshev UCL	0.505	95% KM Chebyshev UCL	0.507
97.5% KM Chebyshev UCL	0.509	99% KM Chebyshev UCL	0.513

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.007	Anderson-Darling GOF Test
5% A-D Critical Value	0.708	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.382	Kolmogorov-Smirnov GOF
5% K-S Critical Value	0.312	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	12.97	k star (bias corrected MLE)	7.507
Theta hat (MLE)	0.0591	Theta star (bias corrected MLE)	0.102
nu hat (MLE)	181.6	nu star (bias corrected)	105.1
Mean (detects)	0.767		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.0184
Maximum	1.3	Median	0.01
SD	0.073	CV	3.968
k hat (MLE)	1.068	k star (bias corrected MLE)	1.066
Theta hat (MLE)	0.0172	Theta star (bias corrected MLE)	0.0173
nu hat (MLE)	2013	nu star (bias corrected)	2008
Adjusted Level of Significance (β)	0.0497		
Approximate Chi Square Value (N/A, α)	1905	Adjusted Chi Square Value (N/A, β)	1904
95% Gamma Approximate UCL (use when $n \geq 50$)	0.0194	95% Gamma Adjusted UCL (use when $n < 50$)	0.0194

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.502	SD (KM)	0.0308
Variance (KM)	9.4861E-4	SE of Mean (KM)	0.00108
k hat (KM)	265.6	k star (KM)	264.8

nu hat (KM)	500468	nu star (KM)	498875
theta hat (KM)	0.00189	theta star (KM)	0.0019
80% gamma percentile (KM)	0.528	90% gamma percentile (KM)	0.542
95% gamma percentile (KM)	0.554	99% gamma percentile (KM)	0.577
Gamma Kaplan-Meier (KM) Statistics			
Approximate Chi Square Value (N/A, α)	497234	Adjusted Chi Square Value (N/A, β)	497231
95% Gamma Approximate KM-UCL (use when $n \geq 50$)	0.504	95% Gamma Adjusted KM-UCL (use when $n < 50$)	0.504
Lognormal GOF Test on Detected Observations Only			
Shapiro Wilk Test Statistic	0.732	Shapiro Wilk GOF Test	
5% Shapiro Wilk Critical Value	0.803	Detected Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.366	Lilliefors GOF Test	
5% Lilliefors Critical Value	0.304	Detected Data Not Lognormal at 5% Significance Level	
Detected Data Not Lognormal at 5% Significance Level			
Lognormal ROS Statistics Using Imputed Non-Detects			
Mean in Original Scale	0.0552	Mean in Log Scale	-3.626
SD in Original Scale	0.0923	SD in Log Scale	1.212
95% t UCL (assumes normality of ROS data)	0.0601	95% Percentile Bootstrap UCL	0.0604
95% BCA Bootstrap UCL	0.0611	95% Bootstrap t UCL	0.0608
95% H-UCL (Log ROS)	0.0608		
Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution			
KM Mean (logged)	-0.69	KM Geo Mean	0.501
KM SD (logged)	0.0405	95% Critical H Value (KM-Log)	N/A
KM Standard Error of Mean (logged)	0.00142	95% H-UCL (KM -Log)	N/A
KM SD (logged)	0.0405	95% Critical H Value (KM-Log)	N/A
KM Standard Error of Mean (logged)	0.00142		
DL/2 Statistics			
DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.254	Mean in Log Scale	-1.378
SD in Original Scale	0.049	SD in Log Scale	0.0958
95% t UCL (Assumes normality)	0.256	95% H-Stat UCL	N/A
DL/2 is not a recommended method, provided for comparisons and historical reasons			
Nonparametric Distribution Free UCL Statistics			
Data do not follow a Discernible Distribution at 5% Significance Level			
Suggested UCL to Use			
95% KM (t) UCL	0.504	KM H-UCL	N/A
95% KM (BCA) UCL	0.504		

APPENDIX E

SOIL AND SOIL GAS SCREENING LEVELS

Table E-1
Soil Screening Levels
 Defense Fuel Support Point - Norwalk
 Norwalk, California

Chemical	Soil Screening Levels (SLs)										
	Site-Specific Cleanup Goals ¹ (mg/kg)	SFRWQCB ESL ²				OEHHA CHHSL ⁵		DTSC-SL ⁶		USEPA RSL ⁷	
		Tier 1 ³ (mg/kg)	Risk-Based - Direct Exposure ⁴		Risk-Based - Direct Exposure		Risk-Based - Direct Exposure		Risk-Based - Direct Exposure		
			Residential (mg/kg)	Commercial (mg/kg)	Residential (mg/kg)	Commercial (mg/kg)	Residential (mg/kg)	Commercial (mg/kg)	Residential (mg/kg)	Commercial (mg/kg)	Residential (mg/kg)
Total Petroleum Hydrocarbons (TPH)											
Carbon Range (C6-C12)	100	100	740	3,900	---	---	---	---	82 ⁽⁸⁾	420 ⁽⁸⁾	
Carbon Range (C13-C22)	100	230	230	1,100	---	---	---	---	96 ⁽⁹⁾	440 ⁽⁹⁾	
Carbon Range (C23-C32)	---	5100	---	---	---	---	---	---	2500 ⁽¹⁰⁾	33,000 ⁽¹⁰⁾	
Carbon Range (C33-C44)	---	5100	---	---	---	---	---	---	---	---	
Carbon Range (C23-C44)	1,000	5100	11,000 ⁽¹¹⁾	140,000 ⁽¹¹⁾	---	---	---	---	---	---	
Volatile Organic Compounds (VOCs)											
Acetone	0.994	0.5	59,000	630,000	---	---	---	---	61,000	670,000	
tert-Butyl alcohol (TBA)	0.02	0.075	---	---	---	---	---	---	---	---	
Ethylbenzene	1.07	1.4	5.1	22	---	---	---	---	5.8	25	
Toluene	0.356	2.9	970	4,600	---	---	1,100	5,400	4,900	47,000	
1,2,4-Trimethylbenzene	0.12	---	---	---	---	---	---	---	58	240	
o-Xylene	---	2.3	560	2,400	---	---	---	---	650	2,800	
m,p-Xylenes	---	2.3	560	2,400	---	---	---	---	550	2,400	
Gasoline Range Organics (GRO)	100	100	740	3,900	---	---	---	---	82 ⁽⁸⁾	420 ⁽⁸⁾	

Notes:

mg/kg = milligrams per kilogram.

--- = Not available.

¹ Represents the final site-specific cleanup goals for soil, approved by the RWQCB in their letter entitled *Approval of Modification to Cleanup Goals*, dated July 16, 2015.

² Represents San Francisco Bay Regional Water Quality Control Board (SFRWQCB) Environmental Screening Levels (ESLs) for soil (SFRWQCB, 2016).

³ Represents SFRWQCB Tier 1 ESLs for soil, which are based on unrestricted land use.

⁴ Represents SFRWQCB human health risk-based ESLs for soil, developed for direct contact with soil exposure scenarios.

⁵ Represents Office of Environmental Health Hazard Assessment (OEHHA) California Human Health Screening Levels (CHHSLs) for soil (OEHHA, 2010), developed for direct contact with soil exposure scenarios.

⁶ Represents Department of Toxic Substances Control (DTSC) Human and Ecological Risk Office Note 3 modified screening levels for soil (DTSC-SLs; DTSC, 2016), developed for direct contact with soil exposure scenarios.

⁷ Represents U.S. Environmental Protection Agency (USEPA) Regional Screening Levels (RSLs) for soil (USEPA, 2016), developed for direct contact with soil exposure scenarios.

⁸ Represents the lowest of the low aliphatic or low aromatic fraction USEPA RSL for TPH carbon range C5 to C8.

⁹ Represents the lowest of the medium aliphatic or medium aromatic fraction USEPA RSL for TPH carbon range C9 to C18.

¹⁰ Represents the lowest of the high aliphatic or high aromatic fraction USEPA RSL for TPH carbon range C17 to C32.

¹¹ Represents SFRWQCB ESL for TPH motor oil carbon range C18 to C34+.

References:

SFRWQCB. 2016. Environmental Screening Levels (ESLs). San Francisco Bay Region. Revision 3. February.

DTSC. 2016. Human Health Risk Assessment Note Number 3: DTSC-modified Screening Levels (DTSC-SLs). California Environmental Protection Agency (CalEPA). June.

OEHHA. 2010. California Human Health Screening Levels (CHHSLs). California Environmental Protection Agency (CalEPA). September.

USEPA. 2016. Regional Screening Levels (RSLs). May.

Table E-2
Soil Gas Screening Levels
 Defense Fuel Support Point - Norwalk
 Norwalk, California

Chemical	Soil Gas Screening Levels (SLs) - Vapor Intrusion into Indoor Air							
	SFRWQCB ESL ¹		OEHHA CHHSL ²		DTSC-SL ^{3,5}		USEPA RSL ^{4,5}	
	Residential (µg/m ³)	Commercial (µg/m ³)	Residential (µg/m ³)	Commercial (µg/m ³)	Residential (µg/m ³)	Commercial (µg/m ³)	Residential (µg/m ³)	Commercial (µg/m ³)
Acetone	16,000,000	140,000,000	---	---	---	---	16,000,000	140,000,000
Benzene	48	420	36	120	49	420	180	1,600
Toluene	160,000	1,300,000	140,000	380,000	155,000	1,300,000	2,600,000	22,000,000
Ethylbenzene	560	4,900	420	1,400	---	---	550	4,900
m,p-Xylene	52,000	440,000	320,000	890,000	---	---	50,000	440,000
o-Xylene	52,000	440,000	320,000	890,000	---	---	50,000	440,000
2-Butanone (MEK)	2,600,000	22,000,000	---	---	---	---	2,600,000	22,000,000
Carbon Disulfide	---	---	---	---	---	---	365,000	3,100,000
1,3-Dichlorobenzene	---	---	---	---	65,000	530,000	---	---
Ethanol	---	---	---	---	---	---	---	---
(6) 4-Ethyltoluene	160,000	1,300,000	140,000	380,000	155,000	1,300,000	2,600,000	22,000,000
(7) Isopropanol	---	---	---	---	---	---	15,500,000	130,000,000
4-Methyl-2-Pentanone	1,600,000	13,000,000	---	---	---	---	1,550,000	13,000,000
Tetrachloroethene	240	2,100	180	600	240	2,100	5,500	47,000
Trichloroethene	240	3,000	530	1,800	---	---	240	3,000
1,2,4-Trimethylbenzene	---	---	---	---	---	---	3,650	31,000
1,3,5-Trimethylbenzene	---	---	---	---	21,000	180,000	---	---

Notes:

µg/m³ = micrograms per liter.

--- = Not available.

¹ Represents San Francisco Bay Regional Water Quality Control Board (SFRWQCB) Environmental Screening Levels (ESLs) for soil gas (SFRWQCB, 2016).

² Represents Office of Environmental Health Hazard Assessment (OEHHA) California Human Health Screening Levels (CHHSLs) for soil gas for volatile chemicals below buildings constructed without engineered fill below sub-slab gravel (OEHHA, 2010).

³ Represents Department of Toxic Substances Control (DTSC) Human and Ecological Risk Office (HERO) Note 3 modified screening levels for indoor air (DTSC-SLs; DTSC, 2016). See Note 5.

⁴ Represents U.S. Environmental Protection Agency (USEPA) Regional Screening Levels (RSLs) for indoor air (USEPA, 2016). See Note 5.

⁵ California Department of Toxic Substances (DTSC) modified screening levels (2016) and USEPA RSLs (2016) have been developed for indoor air, but not soil gas. The residential and commercial soil gas screening levels (SLs) are based on applying a DTSC default attenuation factor to the air SLs. The resident air SLs and industrial air SLs were divided by DTSC default attenuation factors of 0.002 and 0.001, respectively (DTSC, 2011). The resulting value is the soil gas SL.

⁶ Soil gas SLs were not available for 4-ethyltoluene; therefore, the available SLs for toluene were used.

⁷ Soil gas SLs were not available for isopropanol; therefore, the available SL for sec-butyl alcohol was used.

References:

DTSC. 2011. Final Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air. California Environmental Protection Agency (CalEPA). October.

DTSC. 2016. Human Health Risk Assessment Note Number 3: DTSC-modified Screening Levels (DTSC-SLs). California Environmental Protection Agency (CalEPA). June.

OEHHA. 2010. California Human Health Screening Levels (CHHSLs). California Environmental Protection Agency (CalEPA). September.

SFRWQCB. 2016. Environmental Screening Levels (ESLs). San Francisco Bay Region. Revision 3. February.

USEPA. 2016. Regional Screening Levels (RSLs). May.

APPENDIX F
RISK CHARACTERIZATION

RISK CHARACTERIZATION

The exposure point concentrations (EPCs) for the compounds detected in soil and soil gas were below their respective screening levels; therefore, the cumulative risks and hazards were expected to be below regulatory thresholds. However, in response to the Office of Environmental Health Hazard Assessment's (OEHHA) comments #7 and #11 in their letter dated August 2, 2016, cumulative cancer risks and hazards associated with exposure to chemicals of potential concern (COPCs) in soil and soil gas were estimated. The methodology for estimating the cumulative cancer risks and hazards are presented in this appendix.

The excess cancer risk and noncancer hazard were estimated using the appropriate screening level (SL) based on carcinogenic and noncarcinogenic effects, target hazard index (HI) and target excess cancer risk, and EPCs in soil or soil gas. SLs for noncarcinogenic effects are based on a target hazard quotient of one and screening levels for carcinogenic effects are based on a target excess cancer risk of 1×10^{-6} , which represents the lower end (most stringent) of the California Environmental Protection Agency's (CalEPA) risk management range and is the point of departure for risk management decisions for all receptors. The soil and soil gas screening levels are discussed in Section 4.0 of Revised Human Health Risk Assessment (HHRA) and presented in Tables F-1 through F-5.

In order of priority, soil screening levels were selected from the following:

- Site-specific soil cleanup goals, as approved by Los Angeles Regional Water Quality Control Board (LARWQCB); and
- San Francisco Bay Regional Water Quality Control Board Environmental Screening Levels (SFRWQCB ESLs; SFRWQCB, 2016).

In order of priority, soil gas screening levels were selected from the following acceptable regulatory screening levels:

- SFRWQCB ESLs (SFRWQCB, 2016); and
- Department of Toxic Substances Control modified screening levels (DTSC-SLs; DTSC, 2016); and
- U.S. Environmental Protection Agency Regional Screening Levels (USEPA RSLs; USEPA, 2016).

The excess cancer risk and noncancer hazard were estimated using following equations:

Site-Specific Excess Cancer Risk

$$CR_i = \frac{CR_T \times EPC_i}{SL_{c,i}}$$

Where:

CR_i = Excess cancer risk for chemical i (unitless).

CR_T = Target excess cancer risk (1×10^{-6}), the upper end (most stringent) of CalEPA's risk management range of one-in-ten thousand (1×10^{-4}) to one-in-one-million (1×10^{-6});

EPC_i = Exposure point concentration for source for chemical i (milligram per kilogram [mg/kg] for soil, microgram per cubic meter [$\mu\text{g}/\text{m}^3$] for soil gas); and

$SL_{c,i}$ = SL based on carcinogenic effects for chemical i (mg/kg for soil, $\mu\text{g}/\text{m}^3$ for soil gas).

Site-Specific Noncancer Hazard

$$HQ_i = \frac{HQ_T \times EPC_i}{SL_{nc,i}}$$

Where:

HQ_i = Hazard quotient for chemical i (unitless).

HQ_T = Target hazard quotient (1), a HQ less than or equal to 1 indicates that no adverse noncancer health effects are expected to occur (USEPA, 1989; unitless);

EPC_i = Exposure point concentration for source for chemical i (mg/kg for soil, $\mu\text{g}/\text{m}^3$ for soil gas); and

$ESL_{nc,i}$ = SL based on noncarcinogenic effects for chemical i (mg/kg for soil, $\mu\text{g}/\text{m}^3$ for soil gas).

Risk Characterization Results for COPCs in Soil

For soil exposures in a residential or commercial scenario, the resulting cumulative noncancer hazard quotients are below the USEPA and CalEPA target level of one and the cumulative excess cancer risk estimates are less than 1×10^{-6} , which is the most stringent end of CalEPA's risk management range of 1×10^{-6} to 1×10^{-4} . Therefore, soil exposures do not pose a human health risk to potential residential or commercial receptors at the Site. The estimated cumulative risks and hazards for soil for residential and commercial exposure scenarios are presented in Tables F-1 and F-2.

Risk Characterization Results for COPCs in Soil Gas

In the evaluation of the soil gas data collected in 2016 and 2017, for exposure to soil gas at 5 feet below ground surface (bgs) volatilizing into indoor air in a residential or commercial scenario, the resulting cumulative noncancer hazard quotients are below the USEPA and CalEPA target level of one and the cumulative excess cancer risk estimates are less than 1×10^{-6} , which is the most stringent end of CalEPA's risk management range of 1×10^{-6} to 1×10^{-4} .

In the evaluation of the soil gas data collected in 2016 and 2017, for exposure to soil gas at 10 feet bgs volatilizing into indoor air in a residential or commercial scenario, the resulting cumulative noncancer hazard quotients are below the USEPA and CalEPA target level of one and the cumulative excess cancer risk estimates are below or within CalEPA's risk management range of 1×10^{-6} to 1×10^{-4} . For the residential exposure scenario, the excess cancer risk estimate of 2×10^{-6} is due to benzene. As discussed in Section 4.4 of the Revised HHRA, benzene concentrations in soil gas closest to the surface (at 5 feet bgs) are significantly lower concentrations. As a result, exposure to soil gas at 5 feet bgs results in a hazard quotient below the USEPA and CalEPA target level of one and a cumulative excess cancer risk less than 1×10^{-6} . Although benzene concentrations are slightly higher at 10 feet bgs, these concentrations are attenuating as they move upwards through the vadose zone.

The estimated cumulative risks and hazards for soil for residential and commercial exposure scenarios for the soil gas data collected in 2016 and 2017 are presented in Tables F-3 through F-6.

Based on the risk characterization evaluation, estimate cancer risks and noncancer hazards are below regulatory thresholds and COPCs in soil and soil gas do not pose a human health risk to potential residential or commercial receptors in the Eastern Portion of the DFSP Norwalk Site.

References

- Department of Toxic Substances Control (DTSC). 2016. Human Health Risk Assessment Note Number 3: DTSC-modified Screening Levels (DTSC-SLs). California Environmental Protection Agency (CalEPA). June.
- San Francisco Bay Regional Water Quality Control Board (SFRWQCB). 2016. Environmental Screening Levels (ESLs). San Francisco Bay Region. Revision 3. February.
- U.S. Environmental Protection Agency (USEPA). 1989. Risk Assessment Guidance for Superfund, Human Health Evaluation Manual, Part A. Interim Final. Solid Waste and Emergency Response. December.
- USEPA. 2016. Regional Screening Levels (RSLs). May.

TABLES

Table F-1
Risk Characterization for Soil for Residential Exposure Scenario - 2015/2016 Investigation
 Defense Fuel Support Point - Norwalk
 Norwalk, California

Chemical	Soil Screening Level (SL) ¹				Site Data - Soil from 0 to 10 feet bgs		
	Soil SL Based on Carcinogenic Effects (mg/kg)	Soil SL Based on Noncarcinogenic Effects (mg/kg)	Target Cancer Risk (unitless)	Target Noncancer Hazard Index (unitless)	EPC _{soil} ² (mg/kg)	Cancer Risk ³ (unitless)	Noncancer Hazard Index ⁴ (unitless)
Total Petroleum Hydrocarbons (TPH)							
Carbon Range (C6-C12)	---	740	1 E-06	1 E+00	1.0	---	1 E-03
Carbon Range (C13-C22)	---	230	1 E-06	1 E+00	14	---	6 E-02
Carbon Range (C23-C32)	---	---	1 E-06	1 E+00	58	---	---
Carbon Range (C33-C44)	---	---	1 E-06	1 E+00	51	---	---
Carbon Range (C23-C44)	---	11,000	1 E-06	1 E+00	108	---	1 E-02
Volatile Organic Compounds (VOCs)							
Acetone	---	59,000	1 E-06	1 E+00	0.052	---	9 E-07
tert-Butyl alcohol (TBA)	---	---	1 E-06	1 E+00	0.023	---	---
Ethylbenzene	5.1	3,100	1 E-06	1 E+00	0.0020	4 E-10	6 E-07
Toluene	---	970	1 E-06	1 E+00	0.0021	---	2 E-06
(5) 1,2,4-Trimethylbenzene	---	58	1 E-06	1 E+00	0.0050	---	9 E-05
o-Xylene	---	560	1 E-06	1 E+00	0.0021	---	4 E-06
m,p-Xylenes	---	560	1 E-06	1 E+00	0.0026	---	5 E-06
Gasoline Range Organics (GRO)	---	740	1 E-06	1 E+00	0.50	---	7 E-04
					Total	4 E-10	7 E-02

Notes:

bgs = below ground surface.

mg/kg = milligram per kilogram.

SL = screening level.

--- = not available or not applicable.

EPC = exposure point concentration.

¹ Unless otherwise noted, represents the San Francisco Regional Water Quality Control Board (SFRWQCB) Environmental Screening Level (ESL) based on noncarcinogenic or carcinogenic effects for direct exposure to shallow soil, dated February 2016 revision 3.

² Value represents the lesser of the maximum detected concentration and the 95UCL.

³ Represents the excess cancer risk, based on a target excess cancer risk of one-in-one million (1×10^{-6}).

$$\text{Excess Cancer Risk for compound } i = \text{Soil EPC}_i \times \text{Target Cancer Risk of } 1 \times 10^{-6} / \text{Soil SL}_i$$

⁴ Represents the noncancer hazard, based on a target hazard quotient of one (1).

$$\text{Hazard Quotient for compound } i = \text{Soil EPC}_i \times \text{Target Noncancer Hazard Index of } 1 / \text{Soil SL}_i$$

⁵ SFRWQCB ESLs were not available for 1,2,4-trimethylbenzene; therefore, the U.S. Environmental Protection Agency (USEPA) Regional Screening Levels (RSLs) based on carcinogenic and noncarcinogenic effects were used, dated May 2016.

References:

DTSC. 2011. Final Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air. California Environmental Protection Agency (CalEPA). Oct

SFRWQCB. 2016. Environmental Screening Levels (ESLs). San Francisco Bay Region. Revision 3. February.

USEPA. 2016. Regional Screening Levels (RSLs). May.

Table F-2
Risk Characterization for Soil for Commercial Exposure Scenario - 2015/2016 Investigation
 Defense Fuel Support Point - Norwalk
 Norwalk, California

Chemical	Soil Screening Level (SL) ¹				Site Data - Soil from 0 to 10 feet bgs		
	Soil SL Based on Carcinogenic Effects (µg/m ³)	Soil SL Based on Noncarcinogenic Effects (µg/m ³)	Target Cancer Risk (unitless)	Target Noncancer Hazard Index (unitless)	EPC _{soil} ² (µg/m ³)	Cancer Risk ³ (unitless)	Noncancer Hazard Index ⁴ (unitless)
Total Petroleum Hydrocarbons (TPH)							
Carbon Range (C6-C12)	---	3,900	1 E-06	1 E+00	1.0	---	3 E-04
Carbon Range (C13-C22)	---	1,100	1 E-06	1 E+00	14	---	1 E-02
Carbon Range (C23-C32)	---	---	1 E-06	1 E+00	58	---	---
Carbon Range (C33-C44)	---	---	1 E-06	1 E+00	51	---	---
Carbon Range (C23-C44)	---	140,000	1 E-06	1 E+00	108	---	8 E-04
Volatile Organic Compounds (VOCs)							
Acetone	---	630,000	1 E-06	1 E+00	0.052	---	8 E-08
tert-Butyl alcohol (TBA)	---	---	1 E-06	1 E+00	0.023	---	---
Ethylbenzene	22	18,000	1 E-06	1 E+00	0.0020	9 E-11	1 E-07
Toluene	---	4,600	1 E-06	1 E+00	0.0021	---	5 E-07
(5) 1,2,4-Trimethylbenzene	---	240	1 E-06	1 E+00	0.0050	---	2 E-05
o-Xylene	---	2,400	1 E-06	1 E+00	0.0021	---	9 E-07
m,p-Xylenes	---	2,400	1 E-06	1 E+00	0.0026	---	1 E-06
Gasoline Range Organics (GRO)	---	3,900	1 E-06	1 E+00	0.50	---	1 E-04
					Total	9 E-11	1 E-02

Notes:

bgs = below ground surface.

SL = screening level.

EPC = exposure point concentration.

mg/kg = milligram per kilogram.

--- = not available or not applicable.

¹ Unless otherwise noted, represents the San Francisco Regional Water Quality Control Board (SFRWQCB) Environmental Screening Level (ESL) based on noncarcinogenic or carcinogenic effects for direct exposure to shallow soil (SFRWQCB ESLs dated February 2016 revision 3).

² Value represents the lesser of the maximum detected concentration and the 95UCL.

³ Represents the excess cancer risk, based on a target excess cancer risk of one-in-one million (1 x 10⁻⁶).

$$\text{Excess Cancer Risk for compound } i = \text{Soil EPC}_i \times \text{Target Cancer Risk of } 1 \times 10^{-6} / \text{Soil SL}_i$$

⁴ Represents the noncancer hazard, based on a target hazard quotient of one (1).

$$\text{Hazard Quotient for compound } i = \text{Soil EPC}_i \times \text{Target Noncancer Hazard Index of } 1 / \text{Soil SL}_i$$

⁵ SFRWQCB ESLs were not available for 1,2,4-trimethylbenzene; therefore, the U.S. Environmental Protection Agency (USEPA) Regional Screening Levels (RSLs) based on carcinogenic and noncarcinogenic effects were used, dated May 2016.

Table F-3
Risk Characterization for Soil Vapor for Residential Exposure Scenario - 2016 Investigation
 Defense Fuel Support Point - Norwalk
 Norwalk, California

Chemical	Soil Gas Screening Level (SL) ¹				Site Data - Soil Gas at 5 feet bgs			Site Data - Soil Gas at 10 feet bgs		
	Soil Gas SL Based on Carcinogenic Effects (µg/m ³)	Soil Gas SL Based on Noncarcinogenic Effects (µg/m ³)	Target Cancer Risk (unitless)	Target Noncancer Hazard Index (unitless)	EPC _{soil gas} ² (µg/m ³)	Cancer Risk ³ (unitless)	Noncancer Hazard Index ⁴ (unitless)	EPC _{soil gas} ⁵ (µg/m ³)	Cancer Risk ³ (unitless)	Noncancer Hazard Index ⁴ (unitless)
Acetone	---	16,000,000	1 E-06	1 E+00	190	---	1 E-05	530	---	3 E-05
Benzene	48	1,600	1 E-06	1 E+00	30	6 E-07	2 E-02	98	2 E-06	6 E-02
Toluene	---	160,000	1 E-06	1 E+00	120	---	8 E-04	390	---	2 E-03
Ethylbenzene	560	520,000	1 E-06	1 E+00	---	---	---	69	1 E-07	1 E-04
m,p-Xylene	---	52,000	1 E-06	1 E+00	66	---	1 E-03	270	---	5 E-03
o-Xylene	---	52,000	1 E-06	1 E+00	---	---	---	74	---	1 E-03
2-Butanone (MEK)	---	2,600,000	1 E-06	1 E+00	---	---	---	77	---	3 E-05
(6) 4-Ethyltoluene	---	160,000	1 E-06	1 E+00	---	---	---	59	---	4 E-04
(7) 1,2,4-Trimethylbenzene	---	3,650	1 E-06	1 E+00	---	---	---	52	---	1 E-02
					Total	6 E-07	2 E-02	Total	2 E-06	9 E-02

Notes:

bgs = below ground surface.

µg/m³ = micrograms per cubic meter.

SL = screening level.

--- = not available or not applicable.

EPC = exposure point concentration.

¹ Unless otherwise noted, represents the San Francisco Regional Water Quality Control Board (SFRWQCB) Environmental Screening Level (ESL) based on noncarcinogenic or carcinogenic effects (SFRWQCB ESLs dated February 2016 revision 3).

² Value represents the maximum detected concentration in soil gas collected from 5 feet bgs.

³ Represents the excess cancer risk, based on a target excess cancer risk of one-in-one million (1 x 10⁻⁶).

$$\text{Excess Cancer Risk for compound } i = \text{Soil Gas EPC}_i \times \text{Target Cancer Risk of } 1 \times 10^{-6} / \text{Soil Gas SL}_i$$

⁴ Represents the noncancer hazard, based on a target hazard quotient of one (1).

$$\text{Hazard Quotient for compound } i = \text{Soil Gas EPC}_i \times \text{Target Noncancer Hazard Index of } 1 / \text{Soil Gas SL}_i$$

⁵ Value represents the maximum detected concentration in soil gas collected from 10 feet bgs.

⁶ SFRWQCB ESLs were not available for 4-ethyltoluene; therefore, the ESL for toluene was used.

⁷ SFRWQCB ESLs were not available; therefore, the U.S. Environmental Protection Agency (USEPA) Regional Screening Levels (RSLs) based on carcinogenic and noncarcinogenic effects were used, dated May 2016. USEPA RSLs have been developed for indoor air, but not soil gas. The residential soil gas SL is based on applying a DTSC default attenuation factor to the air SL. The resident air SL was divided by DTSC default attenuation factor of 0.002 (DTSC, 2011). The resulting value is the soil gas SL.

References:

DTSC. 2011. Final Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air. California Environmental Protection Agency (CalEPA). October.

SFRWQCB. 2016. Environmental Screening Levels (ESLs). San Francisco Bay Region. Revision 3. February.

USEPA. 2016. Regional Screening Levels (RSLs). May.

Table F-4
Risk Characterization for Soil Vapor for Commercial Exposure Scenario - 2016 Investigation
 Defense Fuel Support Point - Norwalk
 Norwalk, California

Chemical	Soil Gas Screening Level (SL) ¹				Site Data - Soil Gas at 5 feet bgs			Site Data - Soil Gas at 10 feet bgs		
	Soil Gas SL Based on Carcinogenic Effects (µg/m ³)	Soil Gas SL Based on Noncarcinogenic Effects (µg/m ³)	Target Cancer Risk (unitless)	Target Noncancer Hazard Index (unitless)	EPC _{soil gas} ² (µg/m ³)	Cancer Risk ³ (unitless)	Noncancer Hazard Index ⁴ (unitless)	EPC _{soil gas} ⁵ (µg/m ³)	Cancer Risk ³ (unitless)	Noncancer Hazard Index ⁴ (unitless)
Acetone	---	140,000,000	1 E-06	1 E+00	190	---	1 E-06	530	---	4 E-06
Benzene	420	13,000	1 E-06	1 E+00	30	7 E-08	2 E-03	98	2 E-07	8 E-03
Toluene	---	1,300,000	1 E-06	1 E+00	120	---	9 E-05	390	---	3 E-04
Ethylbenzene	4,900	4,400,000	1 E-06	1 E+00	---	---	---	69	1 E-08	2 E-05
m,p-Xylene	---	440,000	1 E-06	1 E+00	66	---	2 E-04	270	---	6 E-04
o-Xylene	---	440,000	1 E-06	1 E+00	---	---	---	74	---	2 E-04
2-Butanone (MEK)	---	22,000,000	1 E-06	1 E+00	---	---	---	77	---	4 E-06
(6) 4-Ethyltoluene	---	1,300,000	1 E-06	1 E+00	---	---	---	59	---	5 E-05
(7) 1,2,4-Trimethylbenzene	---	31,000	1 E-06	1 E+00	---	---	---	52	---	2 E-03
					Total	7 E-08	3 E-03	Total	2 E-07	1 E-02

Notes:

bgs = below ground surface.

µg/m³ = micrograms per cubic meter.

SL = screening level.

--- = not available or not applicable.

EPC = exposure point concentration.

¹ Unless otherwise noted, represents the San Francisco Regional Water Quality Control Board (SFRWQCB) Environmental Screening Level (ESL) based on noncarcinogenic or carcinogenic effects (SFRWQCB ESLs dated February 2016 revision 3).

² Value represents the maximum detected concentration in soil gas collected from 5 feet bgs.

³ Represents the excess cancer risk, based on a target excess cancer risk of one-in-one million (1 x 10⁻⁶).

$$\text{Excess Cancer Risk for compound } i = \text{Soil Gas EPC}_i \times \text{Target Cancer Risk of } 1 \times 10^{-6} / \text{Soil Gas SL}_i$$

⁴ Represents the noncancer hazard, based on a target hazard quotient of one (1).

$$\text{Hazard Quotient for compound } i = \text{Soil Gas EPC}_i \times \text{Target Noncancer Hazard Index of } 1 / \text{Soil Gas SL}_i$$

⁵ Value represents the maximum detected concentration in soil gas collected from 10 feet bgs.

⁶ SFRWQCB ESLs were not available for 4-ethyltoluene; therefore, the ESL for toluene was used.

⁷ SFRWQCB ESLs were not available; therefore, the U.S. Environmental Protection Agency (USEPA) Regional Screening Levels (RSLs) based on carcinogenic and noncarcinogenic effects were used, dated May 2016. USEPA RSLs have been developed for indoor air, but not soil gas. The commercial soil gas SL is based on applying a DTSC default attenuation factor to the air SL. The industrial air SL was divided by DTSC default attenuation factor of 0.001 (DTSC, 2011). The resulting value is the soil gas SL.

References:

DTSC. 2011. Final Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air. California Environmental Protection Agency (CalEPA). October.

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USEPA. 2016. Regional Screening Levels (RSLs). May.

ATTACHMENT B

Results of Additional Soil and Soil Vapor Sampling and Revised Human Health Risk Assessment to Support Shallow Soil Closure for the Eastern 15-Acre Parcel, Defense Fuel Support Point Norwalk, Norwalk, California, CH2M, March 16, 2017.



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March 16, 2017

Subject: Results of Additional Soil and Soil Vapor Sampling and Revised Human Health Risk Assessment to Support Shallow Soil Closure for the Eastern 15-Acre Parcel, Defense Fuel Support Point, Norwalk, California

Dear Mr. Cho,

This letter report summarizes additional soil and soil vapor sampling data, and a revised human health risk assessment (HHRA) for the eastern 15-acre parcel of the Defense Fuel Support Point, Norwalk, located at 15306 Norwalk Boulevard, Norwalk, California (Figure 1). This report has been prepared by CH2M HILL Engineers, Inc. (CH2M) on behalf of SFPP, L.P. (SFPP), an operating partner of Kinder Morgan, Inc. (Kinder Morgan), and is a follow-up to the previous report dated June 28, 2016 (CH2M, 2016). The work described herein was performed in response to the Regional Water Quality Control Board, Los Angeles Region (RWQCB) letter dated February 2, 2017, requesting a revised HHRA for shallow soil that incorporates additional soil and soil vapor data.

The following sections provide a summary of the background, approach, results, and recommendation for shallow soil closure (upper 10 feet) in the area of the eastern 15-acre parcel impacted by a release from SFPP's pipeline.

Background

In May and June 2016, DLA Energy (DLA) and SFPP submitted the following reports to the RWQCB, which provided a summary of soil and soil vapor data collected from the eastern 15-acre parcel and the results of an HHRA:

- *Human Health Risk Assessment, DLA Energy Responsible Area of Eastern Portion for the Former Defense Fuel Support Point Norwalk*, prepared by The Source Group, Inc. (SGI), dated May 31, 2016.
- *Results of Additional Soil and Soil Vapor Sampling and Human Health Risk Assessment to Support Shallow Soil Closure for the Eastern 15-Acre Parcel for the Defense Fuel Support Point Norwalk*, prepared by CH2M, dated June 28, 2016.

On August 2, 2016, the Office of Environmental Health Hazard Assessment (OEHHA) issued comments on the reports in separate memoranda, which were transmitted by the RWQCB to DLA and SFPP in a letter dated August 30, 2016.

On October 12, 2016, DLA and SFPP provided a combined response to OEHHA's comments in a technical document titled, *Response to the Office of Environmental Health Hazard Assessment (OEHHA) Comments on the: Human Health Risk Assessment, DLA Energy Responsible Area of Eastern Portion, dated May 31, 2016, and Results of Additional Soil and Soil Vapor Sampling and Human Health Risk Assessment to Support Shallow Soil Closure for the Eastern 15-Acre Parcel, dated June 28, 2016* (this technical document is referred to herein as the "Response").

OEHHA reviewed the Response and provided additional comments to the RWQCB in a memorandum dated November 18, 2016; a copy of this memorandum is included in Attachment A. OEHHA's general comments (Nos. 1, 4, 5, and 6) to SFPP generally stated that the current soil and soil vapor data collected near the former fuel release at the southeastern 24-inch block valve were not adequate to address the cumulative risk in this area.

To further assess human health risk in this area, SFPP proposed to collect additional soil and soil vapor samples at four locations in the vicinity of the southeastern 24-inch block valve release area. The number and locations of the sampling points were approved by the RWQCB in an email to SGI, DLA, Kinder Morgan, and CH2M on January 19, 2017. The data collected from these four locations will supplement SFPP's soil and soil vapor data collected in the eastern 15-acre parcel during May 2016. Soil and soil vapor samples are proposed to be collected at 5 and 10 feet below ground surface (bgs) and analyzed for total petroleum hydrocarbons (TPH) and volatile organic compounds (VOCs). The data collected from the investigation will be used to support the HHRA and soil closure request for the upper 10 feet of soil in the eastern 15-acre parcel. The approach and results of the investigation are discussed in the next sections.

Approach

Pre-field Activities

CH2M performed the following field preparation activities prior to commencing soil and soil vapor sampling:

- Updated the existing site-specific health and safety plan to incorporate the planned fieldwork.
- Marked the proposed boring locations.
- Notified Dig Alert. As required by Dig Alert, the borings were called-in and marked-out in white paint at least 2 business days prior to boring advancement. Dig Alert Ticket No. A70400037 was issued.
- Performed an underground utility check using a private utility-locating subcontractor, Spectrum Geophysics.
- Obtained Los Angeles County Department of Public Health boring permits (Attachment B).
- Coordinated with Kinder Morgan staff regarding potential conflicts with SFPP's pipelines.

Field Activities

On February 14 and 15, 2017, CH2M retained Gregg Drilling and Testing of Signal Hill, California, to advance borings using hand auger methods to facilitate the collection of discrete-depth soil samples and the installation of nested soil vapor probes. The locations included SVM-20, SVM-21, SVM-22, and SVM-23, as shown on Figure 2. Prior to hand augering at SVM-21, SVM-22, and SVM-23, air knifing was performed to a depth of 10 feet at collocated borings to clear for known subsurface fuel pipelines in that area. Soil samples were then collected by hand auger methods to a maximum depth of 10 feet bgs. Discrete soil samples were collected at 5 and 10 feet bgs for laboratory analysis. Nested soil vapor

probes were completed at 5 and 10 feet bgs at all four boring locations. American Analytics of Chatsworth, California, completed sampling of the vapor probes on February 24, 2016.

Soil Sampling and Analysis

CH2M used hand auger methods to collect soil samples for lithologic logging, field screening with a photoionization detector (PID), and laboratory analysis. The lithology was described by a State of California licensed professional geologist. Soil was described using visual manual procedures of ASTM International Method D2488, which are based on the Unified Soil Classification System for guidance. Color, moisture content, grain size, and other pertinent soil characteristics were recorded on the boring logs. Soil was screened in the field for the potential presence of VOCs using a PID. Copies of the boring logs are provided in Attachment C.

Discrete-depth soil samples were collected at each boring location for field screening using a PID, and for laboratory analysis as follows:

- At 5 and 10 feet bgs, soil samples were transferred from a 3.5-inch-diameter stainless steel hand auger to 8-ounce glass jars provided by the laboratory. Subcore samples were immediately collected from the jars using a Terracore sample device for transfer of approximately 5 grams of soil to each of five 40-milliliter glass volatile organic analytic (VOA) vials with sodium bisulfate and methanol preservative. The jars were subsequently filled with additional soil, as needed, for use by the laboratory.
- For quality assurance and quality control purposes, one field duplicate soil sample was collected at the 5-foot depth at SVM-22. In addition, one equipment blank (water sample) was collected at the end of sampling activities.
- Samples were placed in an ice-chilled cooler and submitted under chain-of-custody protocol to Asset Laboratories of Las Vegas, Nevada. Asset is certified under the California Environmental Laboratory Accreditation Program.

The soil samples, including the field duplicate sample, and the equipment blank sample were analyzed for the following:

- TPH-g (C4–C12), TPH-d (C13–C22), and TPH quantified as oil (TPH-o) (C23–C44) using U.S. Environmental Protection Agency (EPA) Methods 3550B and 8015M
- VOCs and fuel oxygenates using EPA Method 8260B

Soil Vapor Probe Installation

The soil vapor monitoring probes completed in the eastern 15-acre parcel include SVM-20, SVM-21, SVM-22, and SVM-23 (Figure 2). Each monitoring location consists of a soil vapor probe nest with probes installed at depths of approximately 5 and 10 feet bgs in a single borehole. Figure 3 presents a diagram of a typical nested probe.

The soil vapor probes were completed in the same borings that were used to facilitate the collection of soil samples. At each location, soil vapor probes were installed at approximately 5 and 10 feet bgs. Each vapor probe was constructed with new ¼-inch-outside-diameter Teflon tubing with a nominal 6-inch-long stainless steel screen. A 1-foot-thick filter pack consisting of No. 3 sand was placed around each screen. A 1-foot-thick dry granular bentonite was placed on top of each filter sand pack. The boring was then backfilled to ground surface in 6-inch-thick lifts, with granular bentonite hydrated in place. A sampling valve was fitted to the end of the tubing. Each soil vapor monitoring point was completed at the surface with a flush-mounted, traffic-rated well box.

Completion details for each soil vapor probe are summarized in Table 1. Soil vapor probe completion diagrams are presented in the boring logs in Attachment C.

Soil Vapor Probe Sampling and Analysis

Soil vapor samples were collected by American Analytics with CH2M oversight on February 24, 2017. Samples were transported to the American Analytics fixed laboratory in Chatsworth, California, for subsequent analysis. SFPP's southeastern area soil vapor extraction (SVE) wells were offline for the duration of sampling. The SVE system has been offline since November 2016 to facilitate construction of a new regenerative thermal oxidizer.

The soil vapor probes at each monitoring location were purged and sampled in accordance with the recommended guidelines in the California Department of Toxic Substances Control (DTSC) *Advisory for Active Soil Gas Investigations* (Advisory) (DTSC, 2015). The analytical results were evaluated by comparison with soil gas screening levels based on the most current DTSC guidance (DTSC, 2016). The soil gas screening levels are calculated from indoor air screening levels published by DTSC in its HHRA Note Number 3 (DTSC, 2016) using the default attenuation factors presented in DTSC's vapor intrusion guidance (DTSC, 2011).

As described previously, soil vapor sampling was conducted at probes SVM-20 to SVM-23. The soil vapor probes from each monitoring location were purged and sampled using a vacuum/pressure sampling pump calibrated to a flow rate of 200 milliliters per minute in accordance with recommended flow rates in the Advisory (DTSC, 2015).

Soil vapor samples were collected using 1.4-liter Summa canisters and were analyzed by American Analytics for VOCs using EPA Method TO-15 and TPH-g using EPA Method TO-3. Included in the TO-15 list of analytes are benzene, toluene, ethylbenzene, and total xylenes (BTEX); methyl tertiary butyl ether (MTBE); naphthalene; tertiary butyl alcohol (TBA), also known as tert-butanol; 1,2-dichloroethane; 1,2,4-trimethylbenzene; 1,3,5-trimethylbenzene; n-butylbenzene; sec-butylbenzene; isopropylbenzene; n-propylbenzene; and 2-propanol (the leak test compound). These constituents were identified as contaminants of potential concern (COPCs) in the SFPP remediation areas based on the results of the 2006 soil gas investigation and HHRA (Geomatrix, 2006).

In accordance with the Advisory (DTSC, 2015), field duplicate soil vapor samples were collected at a minimum frequency of 1 per every 20 soil vapor samples collected. A duplicate soil vapor sample was collected at SVM-22 at the 10-foot depth. The duplicate sample was collected and analyzed in the same manner as the primary samples.

Analytical Results

Soil Results

The soil analytical results for samples collected from SVM-20 to SVM-23 are provided in this section. A copy of the laboratory analytical report is provided in Attachment D.

TPH and VOCs

Table 2 presents a summary of TPH and VOC results for samples collected at SVM-17, SVM-18, SVM-19, SS-20, and SS-21. DLA's soil cleanup goals for 0.5-, 5-, and 10-foot depths are also provided in the table for comparison purposes. Parsons (DLA's consultant) calculated soil cleanup goals for the site according to the methods provided in the RWQCB *Interim Site Assessment and Cleanup Guidebook* (Guidebook) (RWQCB, 1996). These goals were approved by the RWQCB in its letter to DLA, dated July 12, 2012 (RWQCB, 2012). The RWQCB also approved DLA's modification of soil cleanup goals for TPH in its letter to DLA, dated July 16, 2015 (RWQCB, 2015). In its letter to the RWQCB, dated January 14, 2013, SFPP

provided conditional concurrence with some shallow soil cleanup goals (0.5 foot to 10 feet) that are relevant to SFPP's former releases (CH2M, 2013).

As shown in Table 2, TPH-g was detected in all samples at J-flagged (estimated) concentrations above the laboratory minimum detection limits (MDLs) and below the laboratory reporting limits (RLs). TPH-d was detected in one sample (SVM-21, 5-foot depth) at a concentration of 4.9 J milligrams per kilogram (mg/kg). TPH-o was detected in all samples at concentrations between 12 and 120 mg/kg. All TPH-g, TPH-d, and TPH-o detections were below soil cleanup goals.

Benzene, toluene, 2-butanone, and dichloromethane were the only VOCs detected in soil samples; detections were J-flagged at concentrations above the laboratory MDLs and below the laboratory RLs. Of these, benzene and toluene are the only VOCs considered to be COPCs for SFPP's remediation areas. Benzene detections ranged from 0.67 J micrograms per kilogram ($\mu\text{g}/\text{kg}$) at the 10-foot depth of SVM-20, to 2.2 J $\mu\text{g}/\text{kg}$ at the 5-foot depth of SVM-23. Toluene detections ranged from 0.68 J $\mu\text{g}/\text{kg}$ in the 10-foot depth at SVM-20, to 1.8 J $\mu\text{g}/\text{kg}$ at the 5-foot depth in SVM-23. All benzene and toluene detections were below soil cleanup goals. 2-Butanone was detected in SVM-21, SVM-22, and SVM-23 at concentrations that ranged from 2.9 J $\mu\text{g}/\text{kg}$ at the 10-foot depth in SVM-22, to 4.5 J $\mu\text{g}/\text{kg}$ at the 5-foot depth in SVM-21. All detections were below soil cleanup goals. Dichloromethane was detected in all samples but at J-flagged concentrations. Concentrations ranged from 1.2 J $\mu\text{g}/\text{kg}$ at the 10-foot depth in SVM-21, to 1.8 J $\mu\text{g}/\text{kg}$ at the 5-foot depth in SVM-20. All J-flagged detections were above DLA soil cleanup goals; however, dichloromethane is not believed to be a contaminant of concern for SFPP. Although there were J-flagged detections of dichloromethane, the presence of this chemical cannot be confirmed with the available data because these trace concentrations were below the laboratory RLs. Dichloromethane is a common laboratory solvent; therefore, these trace detections may be a result of laboratory cross-contamination.

Equipment Blank Results

Table 3 presents a summary of detected TPH and VOCs in the equipment blank sample. As shown in the table, dichloromethane (0.91 J microgram per liter [$\mu\text{g}/\text{L}$]), toluene (0.22 J $\mu\text{g}/\text{L}$), TPH-g (30 J $\mu\text{g}/\text{L}$), and TPH-o (22 J $\mu\text{g}/\text{L}$) were detected in the equipment blank sample. These J-flagged detections are below the laboratory RLs and likely did not have any impact on soil analytical results.

Soil Vapor Results

Table 4 presents a summary of laboratory analytical results for soil vapor samples collected from SVM-20 to SVM-23. A copy of the laboratory analytical report is presented in Attachment E. As shown in Table 4, TPH-g and all COPCs were nondetect. The laboratory RLs used were below screening levels under residential and commercial scenarios. Other non-COPC compounds detected include 2,2,4-trimethylpentane, cyclohexane, and tetrachloroethylene (PCE). These compounds were detected at one or more probes, but at concentrations below established screening levels under residential or commercial scenarios. All VOCs and TPH-g were nondetect in both probe depths at SVM-20. PCE was detected at both probe depths of SVM-21 to SVM-23, with concentrations ranging between 0.021 and 0.052 $\mu\text{g}/\text{L}$. All PCE detections were below the residential and commercial screening levels of 0.48 and 2.1 $\mu\text{g}/\text{L}$, respectively.

Conclusions and Recommendations

As presented above, the shallow soil and soil vapor data for COPCs collected as part of the eastern 15-acre investigation were below soil cleanup goals and human health screening levels, respectively, and are consistent with the results of the previous HHRA. The lack of significant hydrocarbon concentrations in shallow soil to 10 feet bgs (above the smear zone) is consistent with the conceptual

site model of the historical hydrocarbon release mechanisms and fate of the hydrocarbons since their release. The historical fuel release at the southeastern 24-inch block valve area migrated downward and spread on the water table, where these hydrocarbons have been contained and controlled and are being removed by SFPP's current remediation systems and naturally occurring processes, including biodegradation. The overlying soil proposed for soil closure is above this zone.

Based on the human health risk data collected in this report and previously submitted HHRA report (CH2M, 2016), there is no unacceptable human health risk in the upper 10 feet of soil in the southern portion of the eastern 15-acre parcel. Therefore, SFPP recommends that the RWQCB proceed with issuing shallow soil closure for this area. SFPP will continue to operate its current remediation systems in the southeastern area, including SVE and total fluids extraction, for continued hydrocarbon mass removal and groundwater containment in the uppermost groundwater zone. SFPP will also continue to evaluate the feasibility of biosparge system expansion to the southeastern area as a long-term remediation strategy for enhanced hydrocarbon mass removal in deeper soil and groundwater. SVE operations will continue during biosparging for vapor control. The total fluids extraction system may be decommissioned once dissolved-phase concentrations become asymptotic and free product is no longer measurable in the southeastern area.

If you have any questions regarding this letter report, please contact Mr. Dan Jablonski of CH2M at (213) 228-8271 or Mr. Steve Defibaugh of Kinder Morgan at (714) 560-4802.

Regards,
CH2M HILL Engineers, Inc.



Dan Jablonski
Project Manager



John Lowe, CIH
Vapor Intrusion Consultant

Attachments:

- References
- Table 1 – Soil Vapor Monitoring Probe Completion Details
- Table 2 – Summary of Soil TPH and VOC Results
- Table 3 – Summary of Detected TPH and VOCs in Equipment Blank Sample
- Table 4 – Summary of Soil Vapor Analytical Results – February 2017
- Figure 1 – Site Location Map
- Figure 2 – Soil and Soil Vapor Monitoring Probe Locations, Eastern 15-Acre Parcel
- Figure 3 – Soil Vapor Monitoring Probe Completion Diagram
- Attachment A – OEHHA Memorandum, Dated November 18, 2016
- Attachment B – Los Angeles County Department of Public Health Boring Permits
- Attachment C – Soil Boring Logs
- Attachment D – Laboratory Analytical Report for Soil
- Attachment E – Laboratory Analytical Report for Soil Vapor

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Tables

Table 1. Soil Vapor Monitoring Probe Completion Details
Eastern 15-acre Parcel, Defense Fuel Support Point, Norwalk, California

Probe	Zone	Installation Method	Borehole Diameter (inches)	Boring Total Depth (feet bgs)	Screen Interval (feet bgs)		Filter Pack Top (feet bgs)	Filter Pack Bottom (feet bgs)	Dry Bentonite Top (feet bgs)	Dry Bentonite Bottom (feet bgs)	Hydrated Bentonite Top (feet bgs)	Hydrated Bentonite Bottom (feet bgs)
					From	To						
SVM-20	Shallow	Hand Auger	3.5	---	4.75	5.25	4.5	5.5	3.5	4.5	0.5	3.5
SVM-20	Deep	Hand Auger	3.5	10.5	9.5	10	9	10.5	8	9	5.5	8
SVM-21	Shallow	Hand Auger	3.5	---	4.75	5.25	4.5	5.5	3.5	4.5	0.5	3.5
SVM-21	Deep	Hand Auger	3.5	10.5	9.5	10	9	10.5	8	9	5.5	8
SVM-22	Shallow	Hand Auger	3.5	---	4.75	5.25	4.5	5.5	3.5	4.5	0.5	3.5
SVM-22	Deep	Hand Auger	3.5	10.5	9.5	10	9	10.5	8	9	5.5	8
SVM-23	Shallow	Hand Auger	3.5	---	4.75	5.25	4.5	5.5	3.5	4.5	0.5	3.5
SVM-23	Deep	Hand Auger	3.5	10.5	9.5	10	9	10.5	8	9	5.5	8

Notes:
 Filter pack consists of #3 Monterey fine sand.
 Bentonite is granular bentonite.
 --- = does not apply
 bgs = below ground surface

Table 2. Summary of Soil TPH and VOC Results

Eastern 15-acre Parcel, Defense Fuel Support Point, Norwalk, California

General Area	Sample Location	Sample Date	Sample ID	Sample Depth Interval (feet bgs)	TPH-g (mg/kg)	TPH-d (mg/kg)	TPH-o (mg/kg)	Benzene (µg/kg)	Toluene (µg/kg)	Ethyl-benzene (µg/kg)
Eastern 15-Acre Parcel	SVM-20	2/15/2017	SVM-20-4.5-021517	4.5-5	0.1 J	<2.9	13	<0.12	<0.11	<0.15
		2/15/2017	SVM-20-9.5-021517	9.5-10	0.091 J	<2.9	13	0.67 J	0.68 J	<0.12
	SVM-21	2/14/2017	SVM-21-4.5-021417	4.5-5	0.1 J	4.9 J	120	0.69 J	<0.097	<0.13
		2/14/2017	SVM-21-9.5-021417	9.5-10	0.087 J	<2.9	35	1.5 J	1.3 J	<0.12
	SVM-22	2/14/2017	SVM-22-4.5-021417	4.5-5	0.11 J	<2.9	13	<0.13	<0.12	<0.16
		2/14/2017	DUP-1-4.5-021417	4.5-5	0.11 J	<2.9	14	<0.12	<0.11	<0.15
		2/14/2017	SVM-22-9.5-021417	9.5-10	0.086 J	<2.9	14	1.4 J	1.1 J	<0.13
	SVM-23	2/14/2017	SVM-23-4.5-021417	4.5-5	0.092 J	<2.9	55	2.2 J	1.8 J	<0.12
		2/14/2017	SVM-23-9.5-021417	9.5-10	0.092 J	<2.9	12	0.81 J	<0.095	<0.13
	DLA Energy Soil Cleanup Goals				0.5 Feet	500	1,000	10,000	15	614
5 Feet					500	1,000	10,000	13	440	1,440
10 Feet					100	100	1,000	12	391	1,190

Table 2. Summary of Soil TPH and VOC Results
Eastern 15-acre Parcel, Defense Fuel Support Point, Norwalk, California

General Area	Sample Location	Sample Date	Sample ID	Sample Depth Interval (feet bgs)	Total Xylenes (µg/kg)	MTBE (µg/kg)	TBA (µg/kg)	DIPE (µg/kg)	1,1,1,2-Tetrachloroethane (µg/kg)	1,1,2-Trichloroethane (µg/kg)
Eastern 15-Acre Parcel	SVM-20	2/15/2017	SVM-20-4.5-021517	4.5-5	<0.15	<0.23	<1.5	<0.11	<0.18	<0.25
		2/15/2017	SVM-20-9.5-021517	9.5-10	<0.12	<0.19	<1.2	<0.088	<0.15	<0.21
	SVM-21	2/14/2017	SVM-21-4.5-021417	4.5-5	<0.13	<0.21	<1.4	<0.098	<0.17	<0.23
		2/14/2017	SVM-21-9.5-021417	9.5-10	<0.12	<0.18	<1.2	<0.086	<0.15	<0.2
	SVM-22	2/14/2017	SVM-22-4.5-021417	4.5-5	<0.16	<0.25	<1.7	<0.12	<0.2	<0.28
		2/14/2017	DUP-1-4.5-021417	4.5-5	<0.15	<0.24	<1.6	<0.11	<0.19	<0.26
		2/14/2017	SVM-22-9.5-021417	9.5-10	<0.13	<0.21	<1.4	<0.097	<0.17	<0.23
	SVM-23	2/14/2017	SVM-23-4.5-021417	4.5-5	<0.12	<0.19	<1.2	<0.087	<0.15	<0.2
		2/14/2017	SVM-23-9.5-021417	9.5-10	<0.13	<0.21	<1.4	<0.096	<0.17	<0.23
	DLA Energy Soil Cleanup Goals				0.5 Feet	5,550	0.907	1.0	449	2.3
5 Feet					3,770	0.910	1.2	424	2.0	2.9
10 Feet					3,090	0.843	1.3	364	1.5	2.3

Table 2. Summary of Soil TPH and VOC Results
Eastern 15-acre Parcel, Defense Fuel Support Point, Norwalk, California

General Area	Sample Location	Sample Date	Sample ID	Sample Depth Interval (feet bgs)	1,2,3-Trichlorobenzene (µg/kg)	1,2,3-Trichloropropane (µg/kg)	1,2,4-Trimethylbenzene (µg/kg)	1,2-Dibromo-3-Chloropropane (DBCP) (µg/kg)	1,2-Dibromoethane (EDB) (µg/kg)	1,2-Dichloroethane (µg/kg)
Eastern 15-Acre Parcel	SVM-20	2/15/2017	SVM-20-4.5-021517	4.5-5	<0.061	<0.26	<0.068	<0.5	<0.17	<0.13
		2/15/2017	SVM-20-9.5-021517	9.5-10	<0.05	<0.22	<0.056	<0.41	<0.14	<0.11
	SVM-21	2/14/2017	SVM-21-4.5-021417	4.5-5	<0.056	<0.24	<0.063	<0.46	<0.15	<0.12
		2/14/2017	SVM-21-9.5-021417	9.5-10	<0.049	<0.21	<0.055	<0.4	<0.14	<0.11
	SVM-22	2/14/2017	SVM-22-4.5-021417	4.5-5	<0.068	<0.29	<0.076	<0.55	<0.19	<0.15
		2/14/2017	DUP-1-4.5-021417	4.5-5	<0.063	<0.27	<0.071	<0.52	<0.18	<0.14
		2/14/2017	SVM-22-9.5-021417	9.5-10	<0.056	<0.24	<0.062	<0.45	<0.15	<0.12
	SVM-23	2/14/2017	SVM-23-4.5-021417	4.5-5	<0.049	<0.21	<0.055	<0.4	<0.14	<0.11
		2/14/2017	SVM-23-9.5-021417	9.5-10	<0.055	<0.24	<0.062	<0.45	<0.15	<0.12
	DLA Energy Soil Cleanup Goals				0.5 Feet	74	0.000874	2,100	0.250	0.00305
5 Feet					63.4	0.000766	1,800	0.219	0.00278	0.1040
10 Feet					46.7	0.000587	1,340	0.168	0.00227	0.0937

Table 2. Summary of Soil TPH and VOC Results
Eastern 15-acre Parcel, Defense Fuel Support Point, Norwalk, California

General Area	Sample Location	Sample Date	Sample ID	Sample Depth Interval (feet bgs)	1,3,5-Trimethylbenzene (µg/kg)	2-Butanone (MEK) (µg/kg)	2-Chlorotoluene (µg/kg)	2-Hexanone (mg/L)	4-Chlorotoluene (µg/kg)	Acetone (µg/kg)
Eastern 15-Acre Parcel	SVM-20	2/15/2017	SVM-20-4.5-021517	4.5-5	<0.087	<1.8	<0.1	<1.8	<0.19	<2.3
		2/15/2017	SVM-20-9.5-021517	9.5-10	<0.071	<1.5	<0.084	<1.2	<0.16	<1.6
	SVM-21	2/14/2017	SVM-21-4.5-021417	4.5-5	<0.079	4.5 J	<0.093	<1.3	<0.17	<1.6
		2/14/2017	SVM-21-9.5-021417	9.5-10	<0.07	<1.5	<0.082	<1.3	<0.15	<1.7
	SVM-22	2/14/2017	SVM-22-4.5-021417	4.5-5	<0.096	<2	<0.11	<1.5	<0.21	<2
		2/14/2017	DUP-1-4.5-021417	4.5-5	<0.09	<1.9	<0.11	<1.7	<0.2	<2.1
		2/14/2017	SVM-22-9.5-021417	9.5-10	<0.079	2.9 J	<0.093	<1.3	<0.17	<1.7
	SVM-23	2/14/2017	SVM-23-4.5-021417	4.5-5	<0.07	4.1 J	<0.082	<1.2	<0.15	<1.6
		2/14/2017	SVM-23-9.5-021417	9.5-10	<0.078	<1.6	<0.091	<1.3	<0.17	<1.7
	DLA Energy Soil Cleanup Goals				0.5 Feet	2,060	557	558	7.3	547
5 Feet					1,770	607	481	7.2	472	1,170
10 Feet					1,310	617	358	6.5	351	1,280

Table 2. Summary of Soil TPH and VOC Results
Eastern 15-acre Parcel, Defense Fuel Support Point, Norwalk, California

General Area	Sample Location	Sample Date	Sample ID	Sample Depth Interval (feet bgs)	Bromomethane (µg/kg)	Carbon Disulfide (µg/kg)	Chlorobenzene (µg/kg)	Chloroethane (µg/kg)	Chloroform (µg/kg)	Dichloro-difluoromethane (µg/kg)
Eastern 15-Acre Parcel	SVM-20	2/15/2017	SVM-20-4.5-021517	4.5-5	<0.39	<0.17	<0.098	<0.53	<0.16	<0.2
		2/15/2017	SVM-20-9.5-021517	9.5-10	<0.32	<0.14	<0.081	<0.44	<0.13	<0.16
	SVM-21	2/14/2017	SVM-21-4.5-021417	4.5-5	<0.35	<0.16	<0.09	<0.48	<0.14	<0.18
		2/14/2017	SVM-21-9.5-021417	9.5-10	<0.31	<0.14	<0.079	<0.42	<0.13	<0.16
	SVM-22	2/14/2017	SVM-22-4.5-021417	4.5-5	<0.43	<0.19	<0.11	<0.59	<0.17	<0.22
		2/14/2017	DUP-1-4.5-021417	4.5-5	<0.4	<0.18	<0.1	<0.55	<0.16	<0.21
		2/14/2017	SVM-22-9.5-021417	9.5-10	<0.35	<0.16	<0.09	<0.48	<0.14	<0.18
	SVM-23	2/14/2017	SVM-23-4.5-021417	4.5-5	<0.31	<0.14	<0.08	<0.43	<0.13	<0.16
		2/14/2017	SVM-23-9.5-021417	9.5-10	<0.35	<0.15	<0.089	<0.48	<0.14	<0.18
	DLA Energy Soil Cleanup Goals				0.5 Feet	1.5	49	119	2,230	0.0738
5 Feet					1.4	46	104	2,470	0.0682	868
10 Feet					1.3	39	79	2,550	0.0567	672

Table 2. Summary of Soil TPH and VOC Results

Eastern 15-acre Parcel, Defense Fuel Support Point, Norwalk, California

General Area	Sample Location	Sample Date	Sample ID	Sample Depth Interval (feet bgs)	Dichloromethane (µg/kg)	Isopropylbenzene (µg/kg)	Naphthalene (µg/kg)	n-Butylbenzene (µg/kg)	n-Propylbenzene (µg/kg)	p-Isopropyltoluene (µg/kg)
Eastern 15-Acre Parcel	SVM-20	2/15/2017	SVM-20-4.5-021517	4.5-5	1.8 J	<0.081	<0.11	<0.1	<0.12	<0.11
		2/15/2017	SVM-20-9.5-021517	9.5-10	1.5 J	<0.067	<0.094	<0.086	<0.1	<0.087
	SVM-21	2/14/2017	SVM-21-4.5-021417	4.5-5	1.5 J	<0.074	<0.1	<0.096	<0.11	<0.097
		2/14/2017	SVM-21-9.5-021417	9.5-10	1.2 J	<0.065	<0.092	<0.084	<0.097	<0.085
	SVM-22	2/14/2017	SVM-22-4.5-021417	4.5-5	1.6 J	<0.09	<0.13	<0.12	<0.13	<0.12
		2/14/2017	DUP-1-4.5-021417	4.5-5	1.7 J	<0.085	<0.12	<0.11	<0.13	<0.11
		2/14/2017	SVM-22-9.5-021417	9.5-10	1.7 J	<0.074	<0.1	<0.096	<0.11	<0.096
	SVM-23	2/14/2017	SVM-23-4.5-021417	4.5-5	1.4 J	<0.066	<0.093	<0.085	<0.098	<0.086
		2/14/2017	SVM-23-9.5-021417	9.5-10	1.5 J	<0.073	<0.1	<0.094	<0.11	<0.095
	DLA Energy Soil Cleanup Goals				0.5 Feet	0.778	5,560	270	3,970	2,180
5 Feet					0.799	4,780	231	3,400	1,870	2,420
10 Feet					0.761	3,530	170	2,500	1,390	1,790

Table 2. Summary of Soil TPH and VOC Results
 Eastern 15-acre Parcel, Defense Fuel Support Point, Norwalk, California

General Area	Sample Location	Sample Date	Sample ID	Sample Depth Interval (feet bgs)	sec-Butylbenzene (µg/kg)	Styrene (µg/kg)	tert-Butylbenzene (µg/kg)	Trichloroethene (µg/kg)
Eastern 15-Acre Parcel	SVM-20	2/15/2017	SVM-20-4.5-021517	4.5-5	<0.098	<0.21	<0.13	<0.12
		2/15/2017	SVM-20-9.5-021517	9.5-10	<0.081	<0.17	<0.11	<0.097
	SVM-21	2/14/2017	SVM-21-4.5-021417	4.5-5	<0.09	<0.19	<0.12	<0.11
		2/14/2017	SVM-21-9.5-021417	9.5-10	<0.079	<0.17	<0.1	<0.095
	SVM-22	2/14/2017	SVM-22-4.5-021417	4.5-5	<0.11	<0.23	<0.14	<0.13
		2/14/2017	DUP-1-4.5-021417	4.5-5	<0.1	<0.22	<0.13	<0.12
		2/14/2017	SVM-22-9.5-021417	9.5-10	<0.09	<0.19	<0.12	<0.11
	SVM-23	2/14/2017	SVM-23-4.5-021417	4.5-5	<0.08	<0.17	<0.1	<0.095
		2/14/2017	SVM-23-9.5-021417	9.5-10	<0.089	<0.19	<0.12	<0.11
	DLA Energy Soil Cleanup Goals				0.5 Feet	2,590	463	2,070
				5 Feet	2,220	399	1,780	6.1
				10 Feet	1,640	296	1,320	4.7

Notes:

The soil analytical data presented are based on wet weight.

The total xylenes result is the sum of m,p-xylenes and o-xylenes when detected.

13 **Bold font** represents data detected above the laboratory minimum detection limit

<1.4 = not detected at or above the laboratory minimum detection limit shown

J qualifier indicates that the result was detected above the laboratory minimum detection limit, but below the laboratory reporting limit

µg/kg = microgram(s) per kilogram

bgs = below ground surface

DIPE = di-isopropyl ether

ETBE = ethyl tertiary butyl ether

mg/kg = milligram(s) per kilogram

MTBE = methyl tertiary butyl ether

TAME = tertiary amyl methyl ether

TBA = tertiary butyl alcohol

TPH = total petroleum hydrocarbons

TPH-d = total extractable petroleum hydrocarbons quantified using a diesel standard (C13-C22)

TPH-g = total purgeable petroleum hydrocarbons quantified using a gasoline standard (C4-C12)

TPH-o = total extractable petroleum hydrocarbons quantified using a motor oil standard (C23-C44)

VOC = volatile organic compound

Table 3. Summary of Detected TPH and VOCs in Equipment Blank Sample

Eastern 15-acre Parcel, Defense Fuel Support Point, Norwalk, California

Sample Location	Sample Date	Sample ID	TPH-g (µg/L)	TPH-o (µg/L)	Toluene (µg/L)	Dichloromethane (µg/L)
Equipment Blank	2/15/2017	EB-1	30 J	22 J	0.22 J	0.91 J

Notes:

30 **Bold font** represents data detected above the laboratory minimum detection limit

J qualifier indicates that the result was detected above the laboratory minimum detection limit but below the laboratory reporting limit

µg/L = microgram(s) per liter

TPH = total petroleum hydrocarbons

TPH-g = total purgeable petroleum hydrocarbons quantified using a gasoline standard (C4-C12)

TPH-o = total extractable petroleum hydrocarbons quantified using an oil standard (C23-C44)

VOC = volatile organic compound

Table 4. Soil Vapor Analytical Results - February 2017
 Eastern 15-acre Parcel, Defense Fuel Support Point, Norwalk, California

Analyte Type	Analyte	Unit	Current Residential Soil Gas Screening Level ^{a,b}	Current Commercial Soil Gas Screening Level ^{a,b}	SVM-20-5 2/24/2017 SVM-20 5-5.5	SVM-20-10 2/24/2017 SVM-20 10-10.5	SVM-21-5 2/24/2017 SVM-21 5-5.5	SVM-21-10 2/24/2017 SVM-21 10-10.5	SVM-22-5 2/24/2017 SVM-22 5-5.5	SVM-22-10 2/24/2017 SVM-22 10-10.5	SVM-22-10 DUP 2/24/2017 SVM-22 10-10.5	SVM-23-5 2/24/2017 SVM-23 5-5.5	SVM-23-10 2/24/2017 SVM-23 10-10.5
COPCs ^d	1,2,4-Trimethylbenzene	µg/L	7.3	31	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	1,2-Dichloroethane	µg/L	0.11	0.47	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	1,3,5-Trimethylbenzene	µg/L	---	---	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	2-Propanol (leak test compound)	µg/L	---	---	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
	Benzene	µg/L	0.097	0.42	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	Ethylbenzene	µg/L	1.1	4.9	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	Isopropylbenzene	µg/L	---	---	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	m,p-Xylenes	µg/L	100	440	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	Methyl tert-butyl ether (MTBE)	µg/L	11	47	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	Naphthalene	µg/L	0.083	0.36	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	n-Butylbenzene	µg/L	---	---	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	n-Propylbenzene	µg/L	1000	4400	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	o-Xylene	µg/L	100	440	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	sec-Butylbenzene	µg/L	---	---	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	tert-Butanol (TBA)	µg/L	---	---	<20	<20	<20	<20	<20	<20	<20	<20	<20
Toluene	µg/L	310	1300	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	
TPH-gas	TPH-g (C4-C12)	µg/L	630 ^c	2600 ^c	<20	<20	<20	<20	<20	<20	<20	<20	<20
Other Detected Compounds	2,2,4-Trimethylpentane	µg/L	---	---	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.44	3
	Cyclohexane	µg/L	6300	26000	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.063	0.26
	Tetrachloroethylene (PCE)	µg/L	0.48	2.1	<0.02	<0.02	0.037	0.052	0.021	0.022	0.023	0.028	0.045

Notes:

^a Source for the Indoor Air Screening Levels: California Department of Toxic Substances Control (DTSC). 2016. Human Health Risk Assessment (HHRA)

Note Number 3: DTSC-Modified Screening Levels (DTSC-SLs). June
http://www.dtsc.ca.gov/AssessingRisk/upload/HHRA_Note_3_-2016-06.pdf

^b Attenuation factor for current land use = 0.001. Source for the attenuation factors: DTSC, 2011. Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air (Vapor Intrusion Guidance). October. http://www.dtsc.ca.gov/AssessingRisk/upload/Final_VIG_Oct_2011.pdf

^c TPH aliphatic low screening level used for TPH-g screening levels

^d Chemicals of potential concern identified from the 2006 soil gas investigation and HHRA (Geomatrix, 2006)

--- = not available

<0.02 = not detected at the laboratory minimum reporting limit

µg/L = micrograms per liter

COPC = chemical of potential concern

DUP = field duplicate

TPH-g = total petroleum hydrocarbons quantified as gasoline

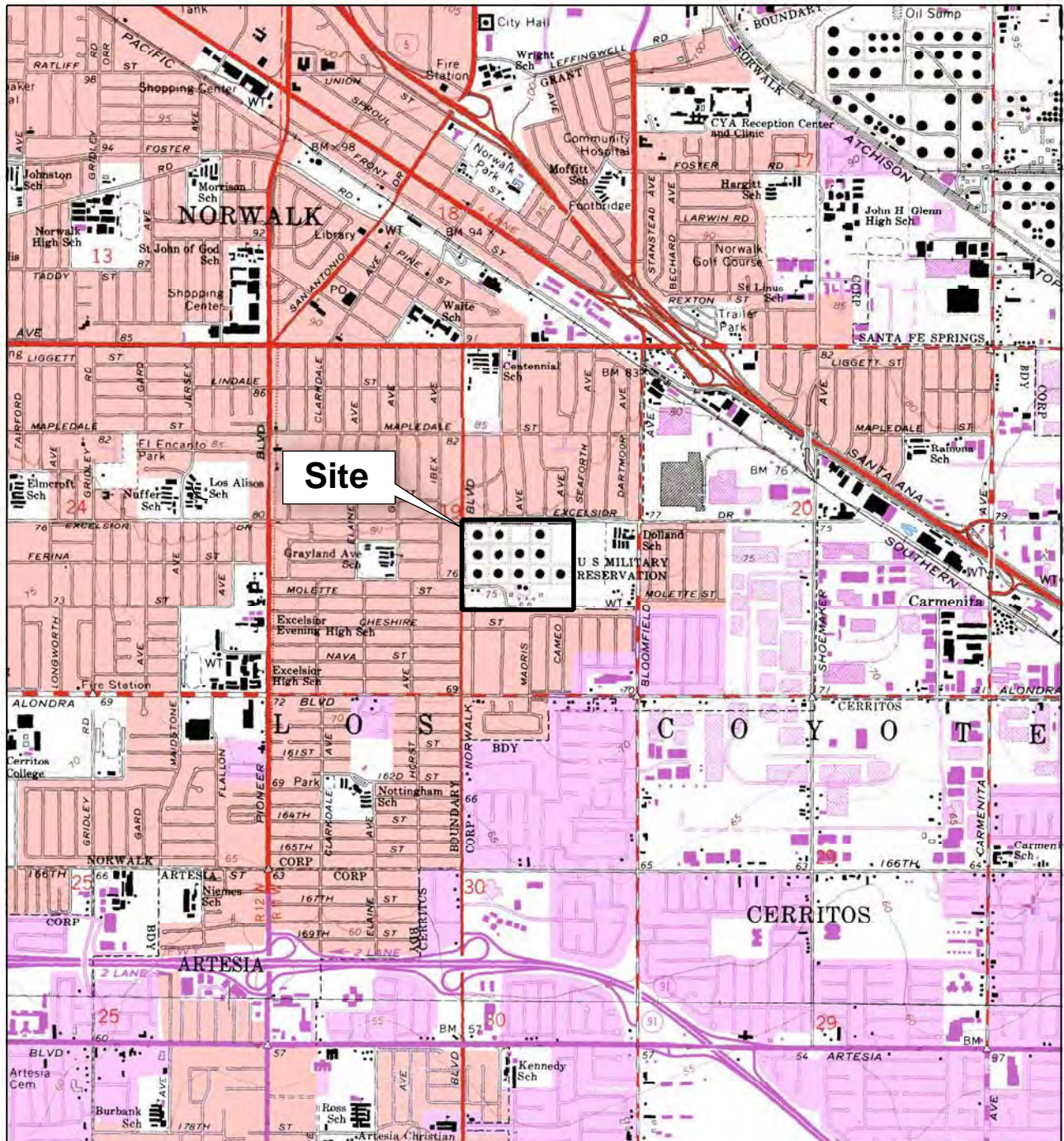
SVM-20-5 = sample ID

2/24/2017 = sample date

SVM-20 = sample location

5-5.5 = sample depth in feet below ground surface

Figures



Site

U.S. MILITARY RESERVATION

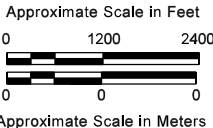
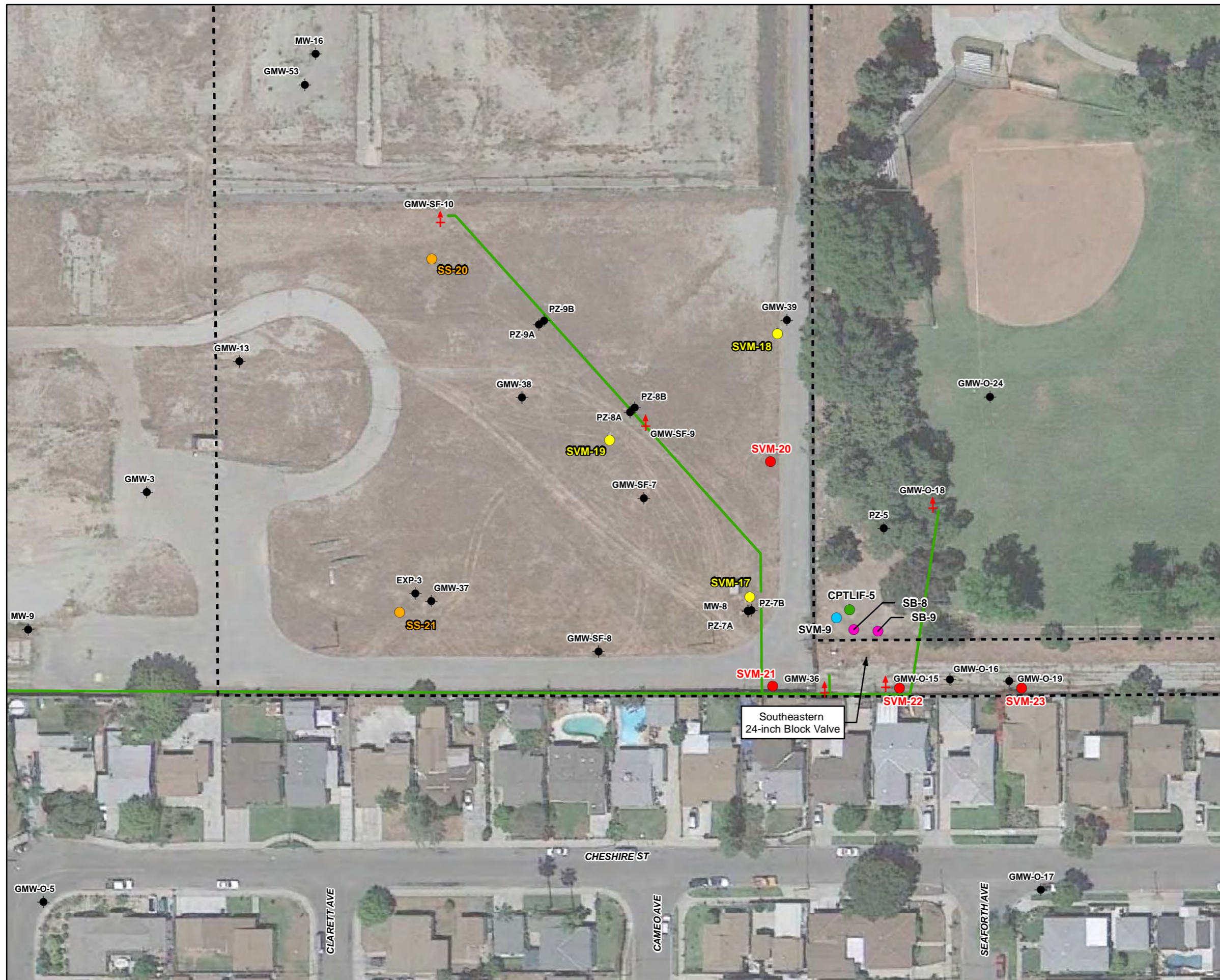


Figure 1
Site Location Map
 Defense Fuel Support Point, Norwalk
 Norwalk, California

BASEMAP MODIFIED FROM U.S.G.S. 7.5 MINUTE QUADRANGLE MAP
 LOS ALAMITOS 1964, CALIFORNIA. PHOTO-REVISED 1981.
 WHITTIER 1965, CALIFORNIA. PHOTO-REVISED 1981.





- Legend**
- February 2017 Eastern 15-Acre Soil Vapor Monitoring Probe Location
 - May 2016 Eastern 15-Acre Soil Sample Location
 - May 2016 Eastern 15-Acre Soil Vapor Monitoring Probe Location
 - Offsite Soil Vapor Monitoring Probe Location
 - 2011 CPT/LIF Boring
 - 2012 Soil Boring Location
 - Existing Groundwater Monitoring Well
 - ⊕ Existing Remediation Well
 - KMEP Remediation Piping Layout (above ground and below ground)
 - - - Proposed Eastern 15-Acre Property Boundary

Imagery Source:
Google Earth April 17, 2013.

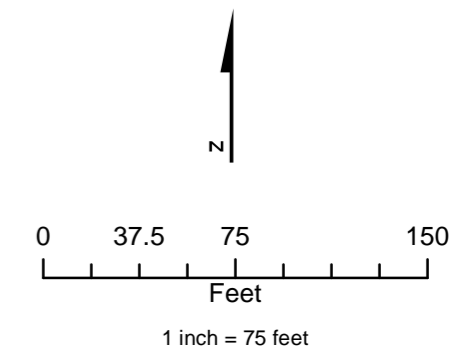
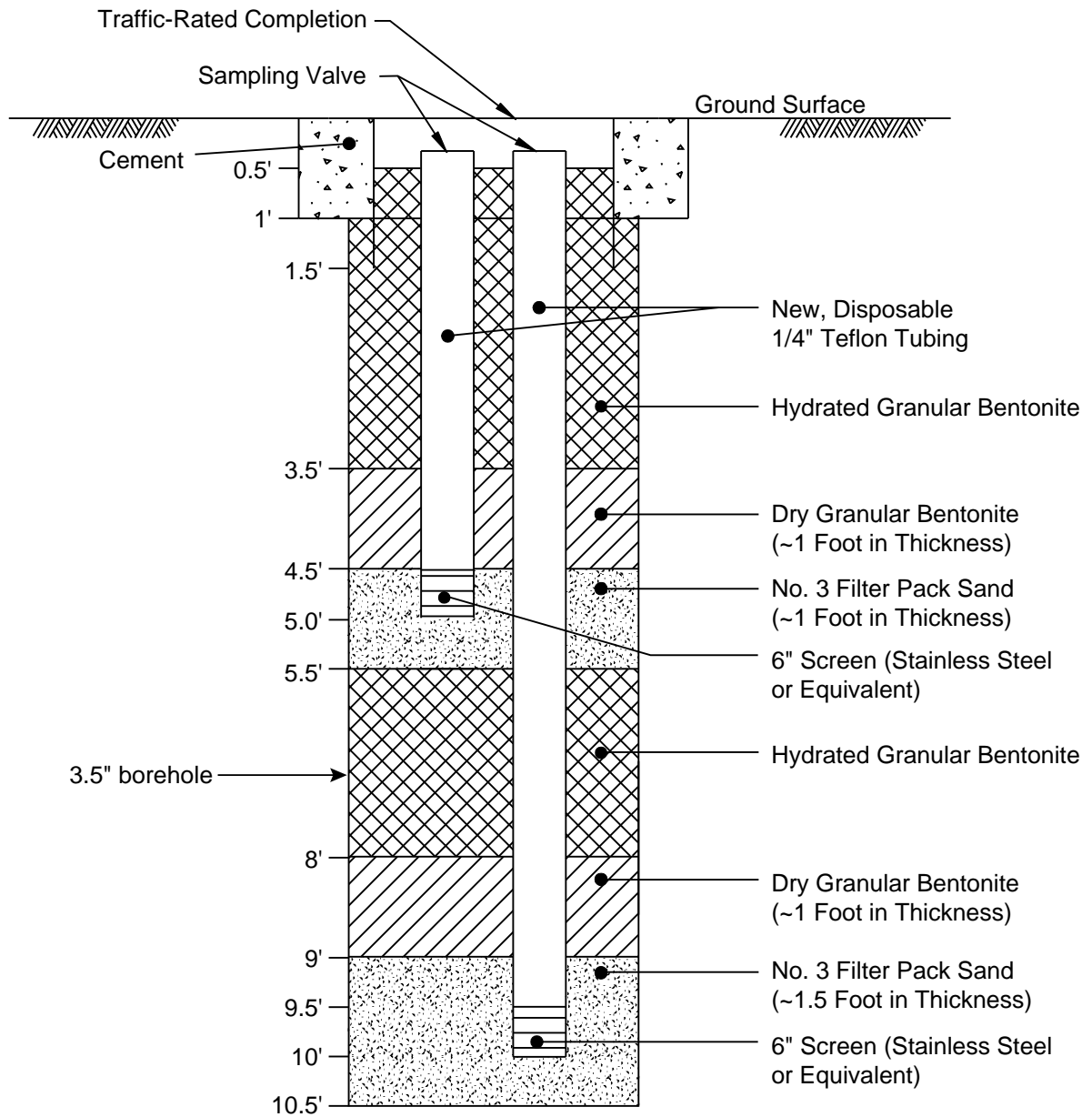


Figure 2
Soil and Soil Vapor Monitoring
Probe Locations, Eastern 15-Acre Parcel
Defense Fuel Support Point, Norwalk
Norwalk, California



Not to Scale

Figure 3
Soil Vapor Monitoring Probe Completion Diagram
SFPP Norwalk Pump Station
Norwalk, California



Attachment A
OEHHA Memorandum, Dated
November 18, 2016

Office of Environmental Health Hazard Assessment

Lauren Zeise, Ph.D., Acting Director
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Matthew Rodriguez
Secretary for
Environmental Protection

Edmund G. Brown Jr.
Governor

MEMORANDUM

TO: Paul Cho
Engineering Geologist
Site Cleanup Unit V

FROM: Nathalie Pham, Ph.D. *N.P.*
Staff Toxicologist
Integrated Risk Assessment Branch
Office of Environmental Health Hazard Assessment

DATE: November 18, 2016

SUBJECT: Response to Comments. RESULTS OF ADDITIONAL SOIL AND SOIL VAPOR SAMPLING AND HUMAN HEALTH RISK ASSESSMENT TO SUPPORT SHALLOW SOIL CLOSURE FOR THE EASTERN 15-ACRE PARCEL – Kinder Morgan / SGP – Norwalk Tank Farm, Defense Fuel Support Point Norwalk, Norwalk, CA

R4-16-001

OEHHA # 880423-00

Document reviewed

- CH2M responses to Cal/EPA OEHHA's comments on Summary of Results of Additional Soil and Soil Vapor Sampling and Human Health Risk Assessment, Defense Fuel Support Point Norwalk, Norwalk, CA dated June 28, 2016 by CH2M.
- OEHHA's updated responses are in italics.

History

- In a memo dated August 2, 2016, the human health risk assessment report for the site Defense Fuel Support Norwalk was reviewed by Nathalie Pham.

Comments and Responses

GENERAL COMMENTS

Comment #1: There are five soil and three soil vapor sampling locations in an area of 60,000ft². If the most northern perimeter is at GMW-SF-10, the area would still be about

California Environmental Protection Agency

Sacramento: (916) 324-7572 Oakland: (510) 622-3200

www.oehha.ca.gov

40,000ft². The limited number of sample locations may not capture all significant contamination in the area of concern. Besides the ten groundwater monitoring wells, there is no evidence that any other previous sampling had taken place within the area.

CH2M Response #1: The number and locations of soil and soil vapor samples collected as part of the eastern 15-acre investigation were approved by the RWQCB in an email dated, April 15, 2016. Because there is no evidence of significant shallow soil contamination in eastern 15-acre parcel caused by the release of hydrocarbons at the southeastern 24-inch block valve, five soil and three soil vapor sample locations were deemed sufficient.

OEHHA #1: *OEHHA stands by our previous comment on the limitation of the current sampling plan. In addition, it is unclear what the rationale for selecting those specific locations was and why they were not sampled closer to the release from the block valve. The revision of the current sampling plan is at the discretion of the RWQCB.*

SOIL ASSESSMENT

Comment #2: It is unclear what "PZ" for sampling locations stood for.

CH2M Response #2: "PZ" is an abbreviation for piezometer or monitoring well.

OEHHA #2: *The response is satisfactory.*

Comment #3: Soil analytical results for TPH and VOCs are compared to the cleanup goals provided by the 1996 RWQCB Interim Site Assessment and Cleanup Guidebook. COPC detections in soil are below cleanup goals. OEHHA recommends more updated screening levels.

CH2M Response #3: These goals were approved by the RWQCB in its letter to DLA Energy, dated July 12, 2012 (RWQCB, 2012). OEHHA compared the soil concentrations for COPCs with available CHHSLs and DTSC's screening levels and screening levels for those COPCs were not exceeded.

OEHHA #3: *Screening levels were approved by RWQCB and were not exceeded. The response is satisfactory.*

Comment #4: The five soil sampling locations are more than 100' apart from each other. As mentioned previously, potential hot spots may be overlooked with this distance between single sampling locations.

CH2M Response #4: The occurrence of COPCs in the eastern 15-acre parcel is related to deeper soil (smear zone) and groundwater, rather than from fuel releases in shallow soil, which makes tight spacing of sample locations less critical for assessing risks. As stated above, there is no documentation to support significant shallow soil contamination in the eastern 15-acre property; therefore, the RWQCB agreed that five soil sample locations would be sufficient. The data collected from the eastern 15-acre parcel and near the southeastern 24-inch block valve (source area) do not support shallow soil contamination. In summary, shallow and deeper soil data collected by SFPP at or near the eastern 15-acre parcel between 1994 and 2016 support the conceptual site model (CSM) for this site. Soil impacts related to the 24-inch block valve

release (source area) are limited to depths greater than 18 feet bgs, and are related to the hydrocarbon constituents within the smear zone and groundwater.

OEHHA #4: *OEHHA can only comment on the delineation of the sampling locations. There is potential lateral migration of contamination over time and insufficient or non-representative data may underestimate the risk assessment results. VOCs in depth can also migrate through preferential pathways. OEHHA stands by our previous comment and recommends more sampling for the risk evaluation.*

SOIL VAPOR ASSESSMENT

Comment #5: The rationale for the number and location of the samples is not given.

CH2M Response #5: The number and locations of soil vapor samples collected as part of the eastern 15-acre investigation were approved by the RWQCB, as stated above.

OEHHA #5: *Please refer to OEHHA's previous comments (#1 and #4).*

Comment #6: It should be noted that overall variability of concentrations from a single sampling event may contribute to the potential underestimation of risk.

CH2M Response #6: The sampling results from the one event needs to be considered in light of other lines of evidence. Annual sampling near the source area at SVM-9 should also be considered. Data collected from SVM-9 since 2012 have been below screening levels as stated above.

OEHHA #6: *OEHHA agrees that other lines of evidence need to be taken into account as well. However, a single annual sampling at SVM-19 is not adequate to address the cumulative risk at a Site.*

Comment #7: The western side of the Eastern parcel (the area of concern) is not sampled for soil vapor COPCs

CH2M Response #7: As stated above, two additional soil vapor locations (SV-94 and SV-96) within the eastern 15-acre parcel were positioned approximately 220 feet to the northeast/southeast of SVM-19 to provide representation of the western portion of that area. The probes were installed and sampled by DLA Energy's consultant; results are documented in DLA-Energy's Human Health Risk Assessment Report

OEHHA #7: *These two additional locations were not presented in the original Shallow Soil report. These additions for sampling are satisfactory.*

Comment #8: Typically, a 100-foot buffer zone beyond the extent of the soil gas plume should be demonstrated at a Site (DTSC, 2011). This 100-foot buffer is warranted due to uncertainty about future soil gas migration upon redevelopment.

CH2M Response #8: As discussed in the CSM report, there have been several rounds of soil vapor monitoring which confirm the limited extent of VOCs in soil vapor potentially arising from volatilization from groundwater. In addition, an assessment of vapor intrusion was conducted in 2006 in residences adjacent and to the south of the site. The results from this assessment indicated that potential VI pathways did not

appear to be complete in those residences. These results represent a second line of evidence along with the soil vapor monitoring results indicating VI exposure pathways are unlikely to be complete. While the 100-ft distance from the extent of groundwater and soil vapor samples represents a boundary for determining when VI should be investigated, there are already multiple lines of evidence for this site which provide an understanding of the potential for VI pathways, both under current or future land use conditions.

OEHHA #8: *The multiple lines of evidence are supportive. This response is satisfactory.*

Comment #9: In addition, for a residential scenario, there should ideally be a minimum one soil gas sample location for every potential residential building. For comparison, the parcel size for most residential housing tracts in California is approximately one-eighth to one-quarter acre. Hence, the density of soil gas collection for future residential developments should be based on this type of spacing. Bear in mind that the area of concern is 15 acres.

CH2M Response #9: The eastern 15-acre parcel is zoned by the City of Norwalk as industrial/commercial, not residential, as noted in the land use restrictions for this area. Therefore, the soil gas spacing requirements under a residential scenario should not apply.

OEHHA #9: *Please refer to OEHHA's original memo (August 2, 2016). Target scenarios are not explicitly defined in reports. It is implied that scenarios include current and future residential, commercial, and construction workers. If development/remediation of the Site is inconsistent with the land uses identified evaluated in this risk assessment, additional evaluation of potential health risks may be necessary. OEHHA recommends to the RWQCB a deed restriction for the Site to indicate the need for additional site investigations in the case of a change of land use.*

Comment #10: Out of the three soil vapor locations, only one is analyzed for PAHs or PCBs. Please explain.

CH2M Response #10: One soil sample was analyzed for PAHs and PCBs at SVM-19 (5-foot depth). These analyses were specifically requested by the RWQCB. Soil vapor samples were analyzed for VOCs and TPH-g only.

OEHHA #10: *The response is satisfactory.*

Comment #11: Please clarify justification for not using the Johnson & Ettinger model to evaluate vapor intrusion of VOCs.

CH2M Response #11: A conservative assumption for the rate of biodegradation was used based on the range of rates published in the literature, and sandy soil is assumed for purposes of estimating vapor diffusion. The results of this modeling are presented in the 2015 PVI guidance as Figures 9 and 10, and EPA states these can be used to estimate values for α for situations where the total vapor concentration at the source and the vertical separation between the source and bottom building are known. This

approach was used for this site as it is considered more representative for estimating α than the standard J&E model provided by DTSC.

OEHHA #11: *If the VOCs are TPHs only and the source is a gas station, the PVI risk guidance may apply. The rationale is given. This response is satisfactory.*

Comment #12: Table 7 results are from EPA's Petroleum Vapor Intrusion model, but there are no calculations to show the derivation of these results.

CH2M Response #12: The methodology is described in the Shallow Soil Closure Report, but it is summarized below for completeness.

OEHHA #12: *A risk assessment report should be transparent and all statements should be supported and referred to the appropriate documents. The response is satisfactory.*

Comment #13: OEHHA used the J&E model to evaluate the potential risks from vapor intrusion using the COPC groundwater detections from Table 7.

CH2M Response #13: As stated above, the J&E model used by OEHHA does not address the biodegradation known to occur with petroleum hydrocarbons, and isn't recommended for assessing petroleum hydrocarbon risks. The modeling used in the Shallow Closure Report (CH2M, 2016) is consistent with the guidelines presented in EPA's PVI guidance.

OEHHA #13: *The response is satisfactory.*

Comment #14: Groundwater concentrations were based on those detected at GMW-O-15. Please explain why concentrations from this particular monitoring well (and not others) were chosen.

CH2M Response #14: As stated above, groundwater concentrations from GMW-O-15 were selected since this well had the most recent and highest detected concentrations in groundwater and therefore provided the highest overall risk.

OEHHA #14: *This response is satisfactory.*

Comment #15: A current SFPP remediation system is mentioned in the Conclusions of the report, but the types of controls are not explicitly stated or described.

CH2M Response #15: SFPP's remediation systems in the southeastern area (SVE and total fluids extraction) will continue to operate for hydrocarbon mass removal and groundwater containment in the uppermost groundwater zone.

OEHHA #15: *This response is satisfactory.*

EDITORIAL COMMENTS

Comment #16: Page 4 of the report states "one ambient air sample was collected on each day of sampling and analyzed." The language indicates that there may be more than one sample collected, but only one ambient air sample is shown in Table 6.

CH2M Response #16: Comment noted. Only one day was required to complete sampling; therefore, only one ambient air sample was collected.

Paul Cho
11/18/16
Page 6

OEHHA #16: *Response is noted. More ambient samples may need to be collected pending future assessment.*

Please do not hesitate to contact me at (916) 327-7338 or by e-mail at Nathalie.Pham@oehha.ca.gov, if you have any questions related to this review.

Memo reviewed by

Hristo Hristov

Hristo Hristov, MD, PhD.
Staff Toxicologist

References

DTSC, 2011. Final Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air (Vapor Intrusion Guidance). Department of Toxic Substances Control, California Environmental Protection Agency, October, 2011.

US EPA, 1996. Soil Screening Guidance: User's Guide. Office of Solid Waste and Emergency Response, July 1996.

CH2M HILL (CH2M). 2016. Results of September 2015 Soil Vapor Monitoring at the South-Central and Southeastern Areas of the SFPP Norwalk Pump Station, Norwalk, California.

Attachment B
Los Angeles County Department of
Public Health Boring Permits



ENVIRONMENTAL HEALTH

Drinking Water Program



5050 Commerce Drive, Baldwin Park, CA 91706

Telephone: (626) 430-5420 • Facsimile: (626) 813-3013 • Email: vgallegos@ph.lacounty.gov

http://publichealth.lacounty.gov/eh/ep/dw/dw_main.htm

SR0095468

15306 Norwalk Blvd Norwalk 90650 Work Plan Approval

TO BE COMPLETED BY APPLICANT:

WORK SITE ADDRESS 15306 Norwalk Boulevard	CITY Norwalk	ZIP 90650	EMAIL ADDRESS FOR WELL PERMIT APPROVAL Daniel.jablonski@ch2m.com
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NOTICE:

- WORK PLAN APPROVALS ARE VALID FOR 180 DAYS. 30 DAY EXTENSIONS OF WORK PLAN APPROVALS ARE CONSIDERED ON AN INDIVIDUAL (CASE-BY-CASE) BASIS AND MAY BE SUBJECT TO ADDITIONAL PLAN REVIEW FEES (HOURLY RATE AS APPLICABLE).
- WORK PLAN MODIFICATIONS MAY BE REQUIRED IF WELL AND GEOLOGIC CONDITIONS ENCOUNTERED AT THE SITE INSPECTION ARE FOUND TO DIFFER FROM THE SCOPE OF WORK PRESENTED TO THE DEPARTMENT OF PUBLIC HEALTH—DRINKING WATER PROGRAM.
- WORK PLAN APPROVALS ARE LIMITED TO COMPLIANCE WITH THE CALIFORNIA WELL STANDARDS AND THE LOS ANGELES COUNTY CODE AND DOES NOT GRANT ANY RIGHTS TO CONSTRUCT, RENOVATE, OR DECOMMISSION ANY WELL. THE APPLICANT IS RESPONSIBLE FOR SECURING ALL OTHER NECESSARY PERMITS SUCH AS WATER RIGHTS, PROPERTY RIGHTS, COASTAL COMMISSION APPROVALS, USE COVENANTS, ENCROACHMENT PERMISSIONS, UTILITY LINE SETBACKS, CITY/COUNTY PUBLIC WORKS RIGHTS OF WAY, ETC.
- ALL FIELD WORK MUST BE CONDUCTED UNDER THE DIRECT SUPERVISION OF A PROFESSIONAL GEOLOGIST LICENSED IN THE STATE OF CALIFORNIA.
- THIS PERMIT IS NOT COMPLETE UNTIL ALL OF THE FOLLOWING REQUIREMENTS ARE SIGNED BY THE DEPUTY HEALTH OFFICER. WORK SHALL NOT BE INITIATED WITHOUT A WORK PLAN APPROVAL STAMPED BY THE DEPARTMENT OF PUBLIC HEALTH—DRINKING WATER PROGRAM.
- **ONCE APPROVED NOTIFY VINCENT GALLEGOS AT vgallegos@ph.lacounty.gov PREFERABLY 4 BUSINESS DAYS BEFORE WORK IS SCHEDULED TO BEGIN.**

TO BE COMPLETED BY DEPARTMENT OF PUBLIC HEALTH—DRINKING WATER PROGRAM:

X WORK PLAN APPROVED: 5 Monitoring Well Installations

DATE: February 7, 2017

ADDITIONAL APPROVAL CONDITIONS:

- Please provide/ verify project dates and time via my email listed above this comment box
- Submit Copies Well Drillers Completion Report(s) within 30 days.



Vincent Gallegos R.E.H.S.
Drinking Water Program
vgallegos@ph.lacounty.gov

GROUT SEAL INSPECTION

DATE ACCEPTED: REHS signature

WELL DRILLERS COMPLETION REPORT(S)

DATE ACCEPTED: REHS signature

Attachment C
Soil Boring Logs



PROJECT NUMBER
684731.PM.01

BORING NUMBER
SVM-20

SHEET 1 OF 1

SOIL BORING LOG

PROJECT: Eastern 15-Acre Investigation, DFSP Norwalk LOCATION: 33.89184558, 118.0675068 DATE: 2/15/2017

WEATHER: Partly Cloudy, 70 deg F DRILLING CONTRACTOR: Gregg Drilling and Testing

DRILLING METHOD AND EQUIPMENT USED: SST hand auger 3.5" bucket; MiniRae PID; Trimble Handheld GPS

WATER LEVELS n/a START : 0' 0" END : 10' 6" LOGGER : M. Mayry

DEPTH BELOW SURFACE (FT)	LAB SAMPLE (FT)		STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION	Soil Vapor Probe Completion	
	SAMPLE INTERVAL (FT)	#/TYPE			Details	Comments
1_				Top soil from 0-2" bgs		Flush mount traffic rated well box
2_				Poorly graded sand (SP), dry to moist, grayish brown 2.5Y 5/2, 100% fine to medium grain sand, PID = 0.0 ppm, no odor, no staining		Hydrated Bentonite
3_						
4_						Dry Bentonite
5_	SVM-20-4.5	4.5-5.0	HA	n/a as above (SP)	◆	#3 Filter pack sand Vapor probe set at 5 ft bgs Hydrated Bentonite
6_						
7_						
8_						
9_						Dry Bentonite
10_	SVM-20-9.5	9.5-10.0	HA	n/a as above (SP), moist, dark gray 2.5Y 4/1, 100% fine grain sand, micaceous, trace fines, PID = 0.0 ppm, no odor, no staining	◆	#3 Filter pack sand Vapor probe set at 9.5 ft bgs Hydrated Bentonite
	Soil samples analyzed for VOCs, TPH-g, TPH-d, TPH-o			Total Depth = 10.5 ft bgs		3.5" diameter borehole
						Hand augered to 10.5' using 3.5" bucket



PROJECT NUMBER
684731.PM.01

BORING NUMBER
SVM-21

SHEET 1 OF 1

SOIL BORING LOG

PROJECT: Eastern 15-Acre Investigation, DFSP Norwalk

LOCATION: 33.89139676, 118.0674707

DATE: 2/14/2017

WEATHER: Partly Cloudy, 70 deg F

DRILLING CONTRACTOR: Gregg Drilling and Testing

DRILLING METHOD AND EQUIPMENT USED: SST hand auger 3.5" bucket; MiniRae PID; Trimble Handheld GPS

WATER LEVELS

n/a

START : 0' 0"

END : 10' 6"

LOGGER : M. Mayry

DEPTH BELOW SURFACE (FT)	LAB SAMPLE (FT)		STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION	Soil Vapor Probe Completion	
	SAMPLE INTERVAL (FT)	#/TYPE			Details	Comments
1_				Top soil from 0-2" bgs		Flush mount traffic rated well box
2_				Poorly graded sand (SP), dry to moist, grayish brown 2.5Y 5/2, 100% fine to medium grain sand, PID = 0.0 ppm, no odor, no staining		Hydrated Bentonite
3_						
4_	SVM-21-4.5					Dry Bentonite
5_	4.5-5.0	HA	n/a	as above (SP)	◆	#3 Filter pack sand Vapor probe set at 5 ft bgs Hydrated Bentonite
6_						
7_						
8_						
9_	SVM-21-9.5					Dry Bentonite
10_	9.5-10.0	HA	n/a	as above (SP), moist, dark gray 2.5Y 4/1, 100% fine grain sand, micaceous, trace fines, PID = 1.1 ppm, no odor, no staining	◆	#3 Filter pack sand Vapor probe set at 9.5 ft bgs Hydrated Bentonite
	Soil samples analyzed for VOCs, TPH-g, TPH-d, TPH-o			Total Depth = 10.5 ft bgs		3.5" diameter borehole
						Hand augered to 10.5' using 3.5" bucket



PROJECT NUMBER
684731.PM.01

BORING NUMBER
SVM-22

SHEET 1 OF 1

SOIL BORING LOG

PROJECT: Eastern 15-Acre Investigation, DFSP Norwalk LOCATION: 33.89139274, 118.0671841 DATE: 2/14/2017

WEATHER: Partly Cloudy, 70 deg F DRILLING CONTRACT OF Gregg Drilling and Testing

DRILLING METHOD AND EQUIPMENT USED: SST hand auger 3.5" bucket; MiniRae PID; Trimble Handheld GPS

WATER LEVELS n/a START : 0' 0" END : 10' 6" LOGGER : M. Mayry

DEPTH BELOW SURFACE (FT)	LAB SAMPLE (FT)		STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION	Soil Vapor Probe Completion	
	SAMPLE INTERVAL (FT)	#/TYPE			Details	Comments
1_				3" Asphalt		Flush mount traffic rated well box
2_				1' Road base, gravel		Hydrated Bentonite
3_						
4_						Dry Bentonite
5_	SVM-22-4.5	4.5-5.0	HA	n/a	Poorly graded sand (SP), moist, light olive brown 2.5Y 5/3, 100% fine grain sand, trace mica, trace fines, PID = 0.0 ppm, no odor, no staining	#3 Filter pack sand Vapor probe set at 5 ft bgs Hydrated Bentonite
6_						
7_						
8_						
9_						Dry Bentonite
10_	SVM-22-9.5	9.5-10.0	HA	n/a	as above (SP), moist, olive gray 5Y 4/2, 95% fine grain sand, 5% fines, micaceous, PID = 2.3 ppm, no odor, no staining	#3 Filter pack sand Vapor probe set at 9.5 ft bgs Hydrated Bentonite
	Soil samples analyzed for VOCs, TPH-g, TPH-d, TPH-o			Total Depth = 10.5 ft bgs		3.5" diameter borehole
						Hand augered to 10.5' using 3.5" bucket



PROJECT NUMBER
684731.PM.01

BORING NUMBER
SVM-23

SHEET 1 OF 1

SOIL BORING LOG

PROJECT: Eastern 15-Acre Investigation, DFSP Norwalk LOCATION: 33.89138678, 118.0668955 DATE: 2/14/2017

WEATHER: Partly Cloudy, 70 deg F DRILLING CONTRACT OF Gregg Drilling and Testing

DRILLING METHOD AND EQUIPMENT USED: SST hand auger 3.5" bucket; MiniRae PID; Trimble Handheld GPS

WATER LEVELS n/a START : 0' 0" END : 10' 6" LOGGER : M. Mayry

DEPTH BELOW SURFACE (FT)	LAB SAMPLE (FT)		STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION	Soil Vapor Probe Completion	
	SAMPLE INTERVAL (FT)	#/TYPE			Details	Comments
1_				3" Asphalt		Flush mount traffic rated well box
2_				1' Road base, gravel		Hydrated Bentonite
3_				Poorly graded sand (SP), moist, olive brown 2.5Y 4/3, 95% fine grain sand, micaceous, 5% fines		
4_						Dry Bentonite
5_	SVM-23-4.5	4.5-5.0	HA	n/a		#3 Filter pack sand
6_				as above (SP), color change to grayish brown 2.5Y 5/2, fine to medium grain sand, PID = 0.0 ppm, no odor, no staining		Vapor probe set at 5 ft bgs
7_						Hydrated Bentonite
8_						
9_						Dry Bentonite
10_	SVM-23-9.5	9.5-10.0	HA	n/a		#3 Filter pack sand
				as above (SP), moist, dark grayish brown 2.5Y 4/2, 95% fine grain sand, 5% fines, PID = 0.0 ppm, no odor, no staining		Vapor probe set at 9.5 ft bgs
				Total Depth = 10.5 ft bgs		Hydrated Bentonite
						3.5" diameter borehole
						Hand augered to 10.5' using 3.5" bucket

Soil samples analyzed for VOCs, TPH-g, TPH-d, TPH-o

Attachment D
Laboratory Analytical Report for
Soil

February 23, 2017

Dan Jablonski
CH2MHill
1000 Wilshire Blvd.
Los Angeles, CA 90017

CA-ELAPNo.: 2676
NV Cert. No.: NV-00922

TEL:
FAX:

Workorder No.: N023124

RE: KMEP Norwalk

Attention: Dan Jablonski

Enclosed are the results for sample(s) received on February 15, 2017 by ASSET Laboratories .
The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in
accordance with the applicable laboratory certifications.

This is an amended report. Please disregard all previous documentation that corresponds to the
page(s) enclosed.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,



Puri Romualdo
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in
its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

CLIENT: CH2MHill
Project: KMEP Norwalk
Lab Order: N023124

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time.

Results were J-Flag. "J" is used to flag those results that are between the PQL (Practical Quantitation Limit) and the calculated MDL (Method Detection Limit). Results that are "J" Flagged are estimated values since it becomes difficult to accurately quantitate the analyte near the MDL.

Analytical Comments for EPA 8015B-GRO:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) recoveries are out of criteria possibly due to matrix interference; however, the analytical batch was validated by the Laboratory Control Sample (LCS).

Analytical Comments for EPA 8260B_Soil:

Laboratory Control Sample Duplicate (LCSD) recovery and RPD of Laboratory Control Sample (LCS) and Laboratory Control Sample Duplicate (LCSD) for acetone and 2-hexanone are outside acceptance criteria in analytical batch P17VS015. However, samples were not reported for these analytes in this analytical run.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for QC samples N023121-001AMS and N023121-001AMSD possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 8260B_Water:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for QC samples N023124-010AMS and N023124-010AMSD possibly due to matrix interference. The associated



CLIENT: CH2MHill
Project: KMEP Norwalk
Lab Order: N023124

CASE NARRATIVE

Laboratory Control Sample (LCS) recovery was acceptable.



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NEVADA | P: 702.307.2859 F: 702.307.2697
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

Date: 23-Feb-17

CLIENT: CH2MHill
Project: KMEP Norwalk
Lab Order: N023124
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N023124-001A	SVM-23-4.5	Soil	2/14/2017 9:25:00 AM	2/15/2017	
N023124-001B	SVM-23-4.5	Soil	2/14/2017 9:25:00 AM	2/15/2017	
N023124-001C	SVM-23-4.5	Soil	2/14/2017 9:25:00 AM	2/15/2017	
N023124-001D	SVM-23-4.5	Soil	2/14/2017 9:25:00 AM	2/15/2017	
N023124-001E	SVM-23-4.5	Soil	2/14/2017 9:25:00 AM	2/15/2017	
N023124-001F	SVM-23-4.5	Soil	2/14/2017 9:25:00 AM	2/15/2017	
N023124-002A	SVM-23-9.5	Soil	2/14/2017 9:40:00 AM	2/15/2017	
N023124-002B	SVM-23-9.5	Soil	2/14/2017 9:40:00 AM	2/15/2017	
N023124-002C	SVM-23-9.5	Soil	2/14/2017 9:40:00 AM	2/15/2017	
N023124-002D	SVM-23-9.5	Soil	2/14/2017 9:40:00 AM	2/15/2017	
N023124-002E	SVM-23-9.5	Soil	2/14/2017 9:40:00 AM	2/15/2017	
N023124-002F	SVM-23-9.5	Soil	2/14/2017 9:40:00 AM	2/15/2017	
N023124-003A	SVM-22-4.5	Soil	2/14/2017 11:00:00 AM	2/15/2017	
N023124-003B	SVM-22-4.5	Soil	2/14/2017 11:00:00 AM	2/15/2017	
N023124-003C	SVM-22-4.5	Soil	2/14/2017 11:00:00 AM	2/15/2017	
N023124-003D	SVM-22-4.5	Soil	2/14/2017 11:00:00 AM	2/15/2017	
N023124-003E	SVM-22-4.5	Soil	2/14/2017 11:00:00 AM	2/15/2017	
N023124-003F	SVM-22-4.5	Soil	2/14/2017 11:00:00 AM	2/15/2017	
N023124-004A	DUP-1-4.5	Soil	2/14/2017 11:05:00 AM	2/15/2017	
N023124-004B	DUP-1-4.5	Soil	2/14/2017 11:05:00 AM	2/15/2017	
N023124-004C	DUP-1-4.5	Soil	2/14/2017 11:05:00 AM	2/15/2017	
N023124-004D	DUP-1-4.5	Soil	2/14/2017 11:05:00 AM	2/15/2017	
N023124-004E	DUP-1-4.5	Soil	2/14/2017 11:05:00 AM	2/15/2017	
N023124-004F	DUP-1-4.5	Soil	2/14/2017 11:05:00 AM	2/15/2017	
N023124-005A	SVM-22-9.5	Soil	2/14/2017 11:15:00 AM	2/15/2017	
N023124-005B	SVM-22-9.5	Soil	2/14/2017 11:15:00 AM	2/15/2017	
N023124-005C	SVM-22-9.5	Soil	2/14/2017 11:15:00 AM	2/15/2017	
N023124-005D	SVM-22-9.5	Soil	2/14/2017 11:15:00 AM	2/15/2017	
N023124-005E	SVM-22-9.5	Soil	2/14/2017 11:15:00 AM	2/15/2017	



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ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

CLIENT: CH2MHill
Project: KMEP Norwalk
Lab Order: N023124
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N023124-005F	SVM-22-9.5	Soil	2/14/2017 11:15:00 AM	2/15/2017	
N023124-006A	SVM-21-4.5	Soil	2/14/2017 1:20:00 PM	2/15/2017	
N023124-006B	SVM-21-4.5	Soil	2/14/2017 1:20:00 PM	2/15/2017	
N023124-006C	SVM-21-4.5	Soil	2/14/2017 1:20:00 PM	2/15/2017	
N023124-006D	SVM-21-4.5	Soil	2/14/2017 1:20:00 PM	2/15/2017	
N023124-006E	SVM-21-4.5	Soil	2/14/2017 1:20:00 PM	2/15/2017	
N023124-006F	SVM-21-4.5	Soil	2/14/2017 1:20:00 PM	2/15/2017	
N023124-007A	SVM-21-9.5	Soil	2/14/2017 2:25:00 PM	2/15/2017	
N023124-007B	SVM-21-9.5	Soil	2/14/2017 2:25:00 PM	2/15/2017	
N023124-007C	SVM-21-9.5	Soil	2/14/2017 2:25:00 PM	2/15/2017	
N023124-007D	SVM-21-9.5	Soil	2/14/2017 2:25:00 PM	2/15/2017	
N023124-007E	SVM-21-9.5	Soil	2/14/2017 2:25:00 PM	2/15/2017	
N023124-007F	SVM-21-9.5	Soil	2/14/2017 2:25:00 PM	2/15/2017	
N023124-008A	SVM-20-4.5	Soil	2/15/2017 8:00:00 AM	2/15/2017	
N023124-008B	SVM-20-4.5	Soil	2/15/2017 8:00:00 AM	2/15/2017	
N023124-008C	SVM-20-4.5	Soil	2/15/2017 8:00:00 AM	2/15/2017	
N023124-008D	SVM-20-4.5	Soil	2/15/2017 8:00:00 AM	2/15/2017	
N023124-008E	SVM-20-4.5	Soil	2/15/2017 8:00:00 AM	2/15/2017	
N023124-008F	SVM-20-4.5	Soil	2/15/2017 8:00:00 AM	2/15/2017	
N023124-009A	SVM-20-9.5	Soil	2/15/2017 8:15:00 AM	2/15/2017	
N023124-009B	SVM-20-9.5	Soil	2/15/2017 8:15:00 AM	2/15/2017	
N023124-009C	SVM-20-9.5	Soil	2/15/2017 8:15:00 AM	2/15/2017	
N023124-009D	SVM-20-9.5	Soil	2/15/2017 8:15:00 AM	2/15/2017	
N023124-009E	SVM-20-9.5	Soil	2/15/2017 8:15:00 AM	2/15/2017	
N023124-009F	SVM-20-9.5	Soil	2/15/2017 8:15:00 AM	2/15/2017	
N023124-010A	EB-1	Water	2/15/2017 9:05:00 AM	2/15/2017	
N023124-010B	EB-1	Water	2/15/2017 9:05:00 AM	2/15/2017	
N023124-010C	EB-1	Water	2/15/2017 9:05:00 AM	2/15/2017	



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ANALYTICAL RESULTS

Print Date: 23-Feb-17

CLIENT: CH2MHill
Lab Order: N023124
Project: KMEP Norwalk
Lab ID: N023124-001

Client Sample ID: SVM-23-4.5
Collection Date: 2/14/2017 9:25:00 AM
Matrix: SOIL

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: NV00922-MS5_170217B	QC Batch: P17VS015	PrepDate	2/17/2017	Analyst: RB		
1,1,1,2-Tetrachloroethane	ND	0.15	4.3	ug/Kg	1	2/18/2017 01:44 AM
1,1,1-Trichloroethane	ND	0.096	4.3	ug/Kg	1	2/18/2017 01:44 AM
1,1,2,2-Tetrachloroethane	ND	0.14	4.3	ug/Kg	1	2/18/2017 01:44 AM
1,1,2-Trichloroethane	ND	0.20	4.3	ug/Kg	1	2/18/2017 01:44 AM
1,1-Dichloroethane	ND	0.11	4.3	ug/Kg	1	2/18/2017 01:44 AM
1,1-Dichloroethene	ND	0.27	4.3	ug/Kg	1	2/18/2017 01:44 AM
1,1-Dichloropropene	ND	0.20	4.3	ug/Kg	1	2/18/2017 01:44 AM
1,2,3-Trichlorobenzene	ND	0.049	4.3	ug/Kg	1	2/18/2017 01:44 AM
1,2,3-Trichloropropane	ND	0.21	4.3	ug/Kg	1	2/18/2017 01:44 AM
1,2,4-Trichlorobenzene	ND	0.12	4.3	ug/Kg	1	2/18/2017 01:44 AM
1,2,4-Trimethylbenzene	ND	0.055	4.3	ug/Kg	1	2/18/2017 01:44 AM
1,2-Dibromo-3-chloropropane	ND	0.40	4.3	ug/Kg	1	2/18/2017 01:44 AM
1,2-Dibromoethane	ND	0.14	4.3	ug/Kg	1	2/18/2017 01:44 AM
1,2-Dichlorobenzene	ND	0.10	4.3	ug/Kg	1	2/18/2017 01:44 AM
1,2-Dichloroethane	ND	0.11	4.3	ug/Kg	1	2/18/2017 01:44 AM
1,2-Dichloropropane	ND	0.21	4.3	ug/Kg	1	2/18/2017 01:44 AM
1,3,5-Trimethylbenzene	ND	0.070	4.3	ug/Kg	1	2/18/2017 01:44 AM
1,3-Dichlorobenzene	ND	0.11	4.3	ug/Kg	1	2/18/2017 01:44 AM
1,3-Dichloropropane	ND	0.15	4.3	ug/Kg	1	2/18/2017 01:44 AM
1,4-Dichlorobenzene	ND	0.081	4.3	ug/Kg	1	2/18/2017 01:44 AM
2,2-Dichloropropane	ND	0.12	4.3	ug/Kg	1	2/18/2017 01:44 AM
2-Butanone	4.1	1.5	43	J ug/Kg	1	2/18/2017 01:44 AM
2-Chlorotoluene	ND	0.082	4.3	ug/Kg	1	2/18/2017 01:44 AM
2-Hexanone	ND	1.2	44	ug/Kg	1	2/21/2017 02:17 PM
4-Chlorotoluene	ND	0.15	4.3	ug/Kg	1	2/18/2017 01:44 AM
4-Isopropyltoluene	ND	0.086	4.3	ug/Kg	1	2/18/2017 01:44 AM
4-Methyl-2-pentanone	ND	0.52	43	ug/Kg	1	2/18/2017 01:44 AM
Acetone	ND	1.6	44	ug/Kg	1	2/21/2017 02:17 PM
Acrolein	ND	4.0	87	ug/Kg	1	2/18/2017 01:44 AM
Acrylonitrile	ND	1.4	43	ug/Kg	1	2/18/2017 01:44 AM
Benzene	2.2	0.097	4.3	J ug/Kg	1	2/18/2017 01:44 AM
Bromobenzene	ND	0.24	4.3	ug/Kg	1	2/18/2017 01:44 AM
Bromochloromethane	ND	0.47	4.3	ug/Kg	1	2/18/2017 01:44 AM
Bromodichloromethane	ND	0.14	4.3	ug/Kg	1	2/18/2017 01:44 AM
Bromoform	ND	0.37	4.3	ug/Kg	1	2/18/2017 01:44 AM
Bromomethane	ND	0.31	4.3	ug/Kg	1	2/18/2017 01:44 AM

Qualifiers: B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
Results are wet unless otherwise specified

E Value above quantitation range
J Analyte detected below quantitation limits
S Spike/Surrogate outside of limits due to matrix interference
DO Surrogate Diluted Out



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ANALYTICAL RESULTS

Print Date: 23-Feb-17

CLIENT: CH2MHill
Lab Order: N023124
Project: KMEP Norwalk
Lab ID: N023124-001

Client Sample ID: SVM-23-4.5
Collection Date: 2/14/2017 9:25:00 AM
Matrix: SOIL

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: NV00922-MS5_170217B	QC Batch: P17VS015	PrepDate	2/17/2017	Analyst: RB		
Carbon disulfide	ND	0.14	4.3	ug/Kg	1	2/18/2017 01:44 AM
Carbon tetrachloride	ND	0.14	4.3	ug/Kg	1	2/18/2017 01:44 AM
Chlorobenzene	ND	0.080	4.3	ug/Kg	1	2/18/2017 01:44 AM
Chloroethane	ND	0.43	4.3	ug/Kg	1	2/18/2017 01:44 AM
Chloroform	ND	0.13	4.3	ug/Kg	1	2/18/2017 01:44 AM
Chloromethane	ND	0.15	4.3	ug/Kg	1	2/18/2017 01:44 AM
cis-1,2-Dichloroethene	ND	0.21	4.3	ug/Kg	1	2/18/2017 01:44 AM
cis-1,3-Dichloropropene	ND	0.088	4.3	ug/Kg	1	2/18/2017 01:44 AM
Di-isopropyl ether	ND	0.087	4.3	ug/Kg	1	2/18/2017 01:44 AM
Dibromochloromethane	ND	0.40	4.3	ug/Kg	1	2/18/2017 01:44 AM
Dibromomethane	ND	0.20	4.3	ug/Kg	1	2/18/2017 01:44 AM
Dichlorodifluoromethane	ND	0.16	4.3	ug/Kg	1	2/18/2017 01:44 AM
Ethyl Tert-butyl ether	ND	0.13	4.3	ug/Kg	1	2/18/2017 01:44 AM
Ethylbenzene	ND	0.12	4.3	ug/Kg	1	2/18/2017 01:44 AM
Freon-113	ND	0.49	4.3	ug/Kg	1	2/18/2017 01:44 AM
Hexachlorobutadiene	ND	0.23	4.3	ug/Kg	1	2/18/2017 01:44 AM
Isopropylbenzene	ND	0.066	4.3	ug/Kg	1	2/18/2017 01:44 AM
m,p-Xylene	ND	0.12	4.3	ug/Kg	1	2/18/2017 01:44 AM
Methylene chloride	1.4	0.88	4.3	J ug/Kg	1	2/18/2017 01:44 AM
MTBE	ND	0.19	4.3	ug/Kg	1	2/18/2017 01:44 AM
n-Butylbenzene	ND	0.085	4.3	ug/Kg	1	2/18/2017 01:44 AM
n-Propylbenzene	ND	0.098	4.3	ug/Kg	1	2/18/2017 01:44 AM
Naphthalene	ND	0.093	4.3	ug/Kg	1	2/18/2017 01:44 AM
o-Xylene	ND	0.047	4.3	ug/Kg	1	2/18/2017 01:44 AM
sec-Butylbenzene	ND	0.080	4.3	ug/Kg	1	2/18/2017 01:44 AM
Styrene	ND	0.17	4.3	ug/Kg	1	2/18/2017 01:44 AM
Tert-amyl methyl ether	ND	0.14	4.3	ug/Kg	1	2/18/2017 01:44 AM
Tert-Butanol	ND	1.2	22	ug/Kg	1	2/18/2017 01:44 AM
tert-Butylbenzene	ND	0.10	4.3	ug/Kg	1	2/18/2017 01:44 AM
Tetrachloroethene	ND	0.24	4.3	ug/Kg	1	2/18/2017 01:44 AM
Toluene	1.8	0.086	4.3	J ug/Kg	1	2/18/2017 01:44 AM
trans-1,2-Dichloroethene	ND	0.18	4.3	ug/Kg	1	2/18/2017 01:44 AM
trans-1,3-Dichloropropene	ND	0.068	4.3	ug/Kg	1	2/18/2017 01:44 AM
Trichloroethene	ND	0.095	4.3	ug/Kg	1	2/18/2017 01:44 AM
Trichlorofluoromethane	ND	0.54	4.3	ug/Kg	1	2/18/2017 01:44 AM
Vinyl chloride	ND	0.18	4.3	ug/Kg	1	2/18/2017 01:44 AM

Qualifiers: B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
Results are wet unless otherwise specified

E Value above quantitation range
J Analyte detected below quantitation limits
S Spike/Surrogate outside of limits due to matrix interference
DO Surrogate Diluted Out



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ANALYTICAL RESULTS

Print Date: 23-Feb-17

CLIENT: CH2MHill
Lab Order: N023124
Project: KMEP Norwalk
Lab ID: N023124-001

Client Sample ID: SVM-23-4.5
Collection Date: 2/14/2017 9:25:00 AM
Matrix: SOIL

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID:	NV00922-MS5_170217B	QC Batch:	P17VS015	PrepDate	2/17/2017	Analyst:	RB
Xylenes, Total	ND	0.12	4.3	ug/Kg	1	2/18/2017 01:44 AM	
Surr: 1,2-Dichloroethane-d4	129	0	52-149	%REC	1	2/21/2017 02:17 PM	
Surr: 1,2-Dichloroethane-d4	118	0	52-149	%REC	1	2/18/2017 01:44 AM	
Surr: 4-Bromofluorobenzene	96.6	0	65-135	%REC	1	2/18/2017 01:44 AM	
Surr: 4-Bromofluorobenzene	97.0	0	65-135	%REC	1	2/21/2017 02:17 PM	
Surr: Dibromofluoromethane	102	0	65-135	%REC	1	2/18/2017 01:44 AM	
Surr: Dibromofluoromethane	107	0	65-135	%REC	1	2/21/2017 02:17 PM	
Surr: Toluene-d8	101	0	75-125	%REC	1	2/18/2017 01:44 AM	
Surr: Toluene-d8	105	0	75-125	%REC	1	2/21/2017 02:17 PM	

DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID

EPA 3550B

EPA 8015B

RunID:	NV00922-GC3_170221B	QC Batch:	61335	PrepDate	2/21/2017	Analyst:	MDM
TPH-Diesel (C13-C22)	ND	2900	10000	ug/Kg	1	2/22/2017 03:29 PM	
TPH-Oil (C23-C44)	55000	1800	10000	ug/Kg	1	2/22/2017 03:29 PM	
Surr: Octacosane	92.0	0	25-162	%REC	1	2/22/2017 03:29 PM	
Surr: p-Terphenyl	93.7	0	47-142	%REC	1	2/22/2017 03:29 PM	

GASOLINE RANGE ORGANICS BY GC/FID

EPA 8015B(M)

RunID:	NV00922-GC4_170220A	QC Batch:	E17VS027	PrepDate	2/20/2017	Analyst:	RB
GRO (C4 - C12)	0.092	0.039	0.88	J	mg/Kg	1	2/20/2017 03:13 PM
Surr: Chlorobenzene - d5	142	0	46-154	%REC	1	2/20/2017 03:13 PM	

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	S	Spike/Surrogate outside of limits due to matrix interference
		Results are wet unless otherwise specified	DO	Surrogate Diluted Out



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ANALYTICAL RESULTS

Print Date: 23-Feb-17

CLIENT: CH2MHill
Lab Order: N023124
Project: KMEP Norwalk
Lab ID: N023124-002

Client Sample ID: SVM-23-9.5
Collection Date: 2/14/2017 9:40:00 AM
Matrix: SOIL

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: NV00922-MS5_170217B	QC Batch: P17VS015	PrepDate	2/17/2017	Analyst: RB		
1,1,1,2-Tetrachloroethane	ND	0.17	4.8	ug/Kg	1	2/18/2017 02:07 AM
1,1,1-Trichloroethane	ND	0.11	4.8	ug/Kg	1	2/18/2017 02:07 AM
1,1,2,2-Tetrachloroethane	ND	0.15	4.8	ug/Kg	1	2/18/2017 02:07 AM
1,1,2-Trichloroethane	ND	0.23	4.8	ug/Kg	1	2/18/2017 02:07 AM
1,1-Dichloroethane	ND	0.12	4.8	ug/Kg	1	2/18/2017 02:07 AM
1,1-Dichloroethene	ND	0.30	4.8	ug/Kg	1	2/18/2017 02:07 AM
1,1-Dichloropropene	ND	0.22	4.8	ug/Kg	1	2/18/2017 02:07 AM
1,2,3-Trichlorobenzene	ND	0.055	4.8	ug/Kg	1	2/18/2017 02:07 AM
1,2,3-Trichloropropane	ND	0.24	4.8	ug/Kg	1	2/18/2017 02:07 AM
1,2,4-Trichlorobenzene	ND	0.13	4.8	ug/Kg	1	2/18/2017 02:07 AM
1,2,4-Trimethylbenzene	ND	0.062	4.8	ug/Kg	1	2/18/2017 02:07 AM
1,2-Dibromo-3-chloropropane	ND	0.45	4.8	ug/Kg	1	2/18/2017 02:07 AM
1,2-Dibromoethane	ND	0.15	4.8	ug/Kg	1	2/18/2017 02:07 AM
1,2-Dichlorobenzene	ND	0.11	4.8	ug/Kg	1	2/18/2017 02:07 AM
1,2-Dichloroethane	ND	0.12	4.8	ug/Kg	1	2/18/2017 02:07 AM
1,2-Dichloropropane	ND	0.23	4.8	ug/Kg	1	2/18/2017 02:07 AM
1,3,5-Trimethylbenzene	ND	0.078	4.8	ug/Kg	1	2/18/2017 02:07 AM
1,3-Dichlorobenzene	ND	0.12	4.8	ug/Kg	1	2/18/2017 02:07 AM
1,3-Dichloropropane	ND	0.16	4.8	ug/Kg	1	2/18/2017 02:07 AM
1,4-Dichlorobenzene	ND	0.090	4.8	ug/Kg	1	2/18/2017 02:07 AM
2,2-Dichloropropane	ND	0.13	4.8	ug/Kg	1	2/18/2017 02:07 AM
2-Butanone	ND	1.6	48	ug/Kg	1	2/18/2017 02:07 AM
2-Chlorotoluene	ND	0.091	4.8	ug/Kg	1	2/18/2017 02:07 AM
2-Hexanone	ND	1.3	47	ug/Kg	1	2/21/2017 02:40 PM
4-Chlorotoluene	ND	0.17	4.8	ug/Kg	1	2/18/2017 02:07 AM
4-Isopropyltoluene	ND	0.095	4.8	ug/Kg	1	2/18/2017 02:07 AM
4-Methyl-2-pentanone	ND	0.58	48	ug/Kg	1	2/18/2017 02:07 AM
Acetone	ND	1.7	47	ug/Kg	1	2/21/2017 02:40 PM
Acrolein	ND	4.5	96	ug/Kg	1	2/18/2017 02:07 AM
Acrylonitrile	ND	1.6	48	ug/Kg	1	2/18/2017 02:07 AM
Benzene	0.81	0.11	4.8	J ug/Kg	1	2/18/2017 02:07 AM
Bromobenzene	ND	0.27	4.8	ug/Kg	1	2/18/2017 02:07 AM
Bromochloromethane	ND	0.52	4.8	ug/Kg	1	2/18/2017 02:07 AM
Bromodichloromethane	ND	0.16	4.8	ug/Kg	1	2/18/2017 02:07 AM
Bromoform	ND	0.41	4.8	ug/Kg	1	2/18/2017 02:07 AM
Bromomethane	ND	0.35	4.8	ug/Kg	1	2/18/2017 02:07 AM

Qualifiers: B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
Results are wet unless otherwise specified

E Value above quantitation range
J Analyte detected below quantitation limits
S Spike/Surrogate outside of limits due to matrix interference
DO Surrogate Diluted Out



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ASSET Laboratories

ANALYTICAL RESULTS

Print Date: 23-Feb-17

CLIENT: CH2MHill
Lab Order: N023124
Project: KMEP Norwalk
Lab ID: N023124-002

Client Sample ID: SVM-23-9.5
Collection Date: 2/14/2017 9:40:00 AM
Matrix: SOIL

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: NV00922-MS5_170217B	QC Batch: P17VS015	PrepDate	2/17/2017	Analyst: RB		
Carbon disulfide	ND	0.15	4.8	ug/Kg	1	2/18/2017 02:07 AM
Carbon tetrachloride	ND	0.16	4.8	ug/Kg	1	2/18/2017 02:07 AM
Chlorobenzene	ND	0.089	4.8	ug/Kg	1	2/18/2017 02:07 AM
Chloroethane	ND	0.48	4.8	ug/Kg	1	2/18/2017 02:07 AM
Chloroform	ND	0.14	4.8	ug/Kg	1	2/18/2017 02:07 AM
Chloromethane	ND	0.17	4.8	ug/Kg	1	2/18/2017 02:07 AM
cis-1,2-Dichloroethene	ND	0.23	4.8	ug/Kg	1	2/18/2017 02:07 AM
cis-1,3-Dichloropropene	ND	0.098	4.8	ug/Kg	1	2/18/2017 02:07 AM
Di-isopropyl ether	ND	0.096	4.8	ug/Kg	1	2/18/2017 02:07 AM
Dibromochloromethane	ND	0.44	4.8	ug/Kg	1	2/18/2017 02:07 AM
Dibromomethane	ND	0.22	4.8	ug/Kg	1	2/18/2017 02:07 AM
Dichlorodifluoromethane	ND	0.18	4.8	ug/Kg	1	2/18/2017 02:07 AM
Ethyl Tert-butyl ether	ND	0.14	4.8	ug/Kg	1	2/18/2017 02:07 AM
Ethylbenzene	ND	0.13	4.8	ug/Kg	1	2/18/2017 02:07 AM
Freon-113	ND	0.54	4.8	ug/Kg	1	2/18/2017 02:07 AM
Hexachlorobutadiene	ND	0.26	4.8	ug/Kg	1	2/18/2017 02:07 AM
Isopropylbenzene	ND	0.073	4.8	ug/Kg	1	2/18/2017 02:07 AM
m,p-Xylene	ND	0.13	4.8	ug/Kg	1	2/18/2017 02:07 AM
Methylene chloride	1.5	0.97	4.8	J ug/Kg	1	2/18/2017 02:07 AM
MTBE	ND	0.21	4.8	ug/Kg	1	2/18/2017 02:07 AM
n-Butylbenzene	ND	0.094	4.8	ug/Kg	1	2/18/2017 02:07 AM
n-Propylbenzene	ND	0.11	4.8	ug/Kg	1	2/18/2017 02:07 AM
Naphthalene	ND	0.10	4.8	ug/Kg	1	2/18/2017 02:07 AM
o-Xylene	ND	0.052	4.8	ug/Kg	1	2/18/2017 02:07 AM
sec-Butylbenzene	ND	0.089	4.8	ug/Kg	1	2/18/2017 02:07 AM
Styrene	ND	0.19	4.8	ug/Kg	1	2/18/2017 02:07 AM
Tert-amyl methyl ether	ND	0.16	4.8	ug/Kg	1	2/18/2017 02:07 AM
Tert-Butanol	ND	1.4	24	ug/Kg	1	2/18/2017 02:07 AM
tert-Butylbenzene	ND	0.12	4.8	ug/Kg	1	2/18/2017 02:07 AM
Tetrachloroethene	ND	0.27	4.8	ug/Kg	1	2/18/2017 02:07 AM
Toluene	ND	0.095	4.8	ug/Kg	1	2/18/2017 02:07 AM
trans-1,2-Dichloroethene	ND	0.20	4.8	ug/Kg	1	2/18/2017 02:07 AM
trans-1,3-Dichloropropene	ND	0.075	4.8	ug/Kg	1	2/18/2017 02:07 AM
Trichloroethene	ND	0.11	4.8	ug/Kg	1	2/18/2017 02:07 AM
Trichlorofluoromethane	ND	0.60	4.8	ug/Kg	1	2/18/2017 02:07 AM
Vinyl chloride	ND	0.21	4.8	ug/Kg	1	2/18/2017 02:07 AM

Qualifiers: B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
Results are wet unless otherwise specified

E Value above quantitation range
J Analyte detected below quantitation limits
S Spike/Surrogate outside of limits due to matrix interference
DO Surrogate Diluted Out



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ANALYTICAL RESULTS

Print Date: 23-Feb-17

CLIENT: CH2MHill
Lab Order: N023124
Project: KMEP Norwalk
Lab ID: N023124-002

Client Sample ID: SVM-23-9.5
Collection Date: 2/14/2017 9:40:00 AM
Matrix: SOIL

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: NV00922-MS5_170217B	QC Batch: P17VS015	PrepDate	2/17/2017	Analyst: RB
Xylenes, Total	ND 0.13	4.8	ug/Kg	1 2/18/2017 02:07 AM
Surr: 1,2-Dichloroethane-d4	115 0	52-149	%REC	1 2/21/2017 02:40 PM
Surr: 1,2-Dichloroethane-d4	111 0	52-149	%REC	1 2/18/2017 02:07 AM
Surr: 4-Bromofluorobenzene	101 0	65-135	%REC	1 2/18/2017 02:07 AM
Surr: 4-Bromofluorobenzene	94.5 0	65-135	%REC	1 2/21/2017 02:40 PM
Surr: Dibromofluoromethane	102 0	65-135	%REC	1 2/21/2017 02:40 PM
Surr: Dibromofluoromethane	98.5 0	65-135	%REC	1 2/18/2017 02:07 AM
Surr: Toluene-d8	99.8 0	75-125	%REC	1 2/18/2017 02:07 AM
Surr: Toluene-d8	101 0	75-125	%REC	1 2/21/2017 02:40 PM

DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID

EPA 3550B

EPA 8015B

RunID: NV00922-GC3_170221B	QC Batch: 61335	PrepDate	2/21/2017	Analyst: MDM
TPH-Diesel (C13-C22)	ND 2900	10000	ug/Kg	1 2/22/2017 04:02 PM
TPH-Oil (C23-C44)	12000 1800	10000	ug/Kg	1 2/22/2017 04:02 PM
Surr: Octacosane	89.2 0	25-162	%REC	1 2/22/2017 04:02 PM
Surr: p-Terphenyl	92.3 0	47-142	%REC	1 2/22/2017 04:02 PM

GASOLINE RANGE ORGANICS BY GC/FID

EPA 8015B(M)

RunID: NV00922-GC4_170220A	QC Batch: E17VS027	PrepDate	2/20/2017	Analyst: RB
GRO (C4 - C12)	0.092 0.043	0.97	J mg/Kg	1 2/20/2017 03:47 PM
Surr: Chlorobenzene - d5	147 0	46-154	%REC	1 2/20/2017 03:47 PM

Qualifiers:	B Analyte detected in the associated Method Blank	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	S Spike/Surrogate outside of limits due to matrix interference
	Results are wet unless otherwise specified	DO Surrogate Diluted Out



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ANALYTICAL RESULTS

Print Date: 23-Feb-17

CLIENT: CH2MHill
Lab Order: N023124
Project: KMEP Norwalk
Lab ID: N023124-003

Client Sample ID: SVM-22-4.5
Collection Date: 2/14/2017 11:00:00 AM
Matrix: SOIL

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: NV00922-MS5_170217B	QC Batch: P17VS015	PrepDate	2/17/2017	Analyst: RB		
1,1,1,2-Tetrachloroethane	ND	0.20	5.9	ug/Kg	1	2/18/2017 02:30 AM
1,1,1-Trichloroethane	ND	0.13	5.9	ug/Kg	1	2/18/2017 02:30 AM
1,1,2,2-Tetrachloroethane	ND	0.19	5.9	ug/Kg	1	2/18/2017 02:30 AM
1,1,2-Trichloroethane	ND	0.28	5.9	ug/Kg	1	2/18/2017 02:30 AM
1,1-Dichloroethane	ND	0.14	5.9	ug/Kg	1	2/18/2017 02:30 AM
1,1-Dichloroethene	ND	0.37	5.9	ug/Kg	1	2/18/2017 02:30 AM
1,1-Dichloropropene	ND	0.27	5.9	ug/Kg	1	2/18/2017 02:30 AM
1,2,3-Trichlorobenzene	ND	0.068	5.9	ug/Kg	1	2/18/2017 02:30 AM
1,2,3-Trichloropropane	ND	0.29	5.9	ug/Kg	1	2/18/2017 02:30 AM
1,2,4-Trichlorobenzene	ND	0.16	5.9	ug/Kg	1	2/18/2017 02:30 AM
1,2,4-Trimethylbenzene	ND	0.076	5.9	ug/Kg	1	2/18/2017 02:30 AM
1,2-Dibromo-3-chloropropane	ND	0.55	5.9	ug/Kg	1	2/18/2017 02:30 AM
1,2-Dibromoethane	ND	0.19	5.9	ug/Kg	1	2/18/2017 02:30 AM
1,2-Dichlorobenzene	ND	0.14	5.9	ug/Kg	1	2/18/2017 02:30 AM
1,2-Dichloroethane	ND	0.15	5.9	ug/Kg	1	2/18/2017 02:30 AM
1,2-Dichloropropane	ND	0.29	5.9	ug/Kg	1	2/18/2017 02:30 AM
1,3,5-Trimethylbenzene	ND	0.096	5.9	ug/Kg	1	2/18/2017 02:30 AM
1,3-Dichlorobenzene	ND	0.15	5.9	ug/Kg	1	2/18/2017 02:30 AM
1,3-Dichloropropane	ND	0.20	5.9	ug/Kg	1	2/18/2017 02:30 AM
1,4-Dichlorobenzene	ND	0.11	5.9	ug/Kg	1	2/18/2017 02:30 AM
2,2-Dichloropropane	ND	0.16	5.9	ug/Kg	1	2/18/2017 02:30 AM
2-Butanone	ND	2.0	59	ug/Kg	1	2/18/2017 02:30 AM
2-Chlorotoluene	ND	0.11	5.9	ug/Kg	1	2/18/2017 02:30 AM
2-Hexanone	ND	1.5	54	ug/Kg	1	2/21/2017 03:02 PM
4-Chlorotoluene	ND	0.21	5.9	ug/Kg	1	2/18/2017 02:30 AM
4-Isopropyltoluene	ND	0.12	5.9	ug/Kg	1	2/18/2017 02:30 AM
4-Methyl-2-pentanone	ND	0.72	59	ug/Kg	1	2/18/2017 02:30 AM
Acetone	ND	2.0	54	ug/Kg	1	2/21/2017 03:02 PM
Acrolein	ND	5.5	120	ug/Kg	1	2/18/2017 02:30 AM
Acrylonitrile	ND	1.9	59	ug/Kg	1	2/18/2017 02:30 AM
Benzene	ND	0.13	5.9	ug/Kg	1	2/18/2017 02:30 AM
Bromobenzene	ND	0.33	5.9	ug/Kg	1	2/18/2017 02:30 AM
Bromochloromethane	ND	0.64	5.9	ug/Kg	1	2/18/2017 02:30 AM
Bromodichloromethane	ND	0.19	5.9	ug/Kg	1	2/18/2017 02:30 AM
Bromoform	ND	0.50	5.9	ug/Kg	1	2/18/2017 02:30 AM
Bromomethane	ND	0.43	5.9	ug/Kg	1	2/18/2017 02:30 AM

Qualifiers: B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
Results are wet unless otherwise specified

E Value above quantitation range
J Analyte detected below quantitation limits
S Spike/Surrogate outside of limits due to matrix interference
DO Surrogate Diluted Out



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ANALYTICAL RESULTS

Print Date: 23-Feb-17

CLIENT: CH2MHill
Lab Order: N023124
Project: KMEP Norwalk
Lab ID: N023124-003

Client Sample ID: SVM-22-4.5
Collection Date: 2/14/2017 11:00:00 AM
Matrix: SOIL

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: NV00922-MS5_170217B	QC Batch: P17VS015	PrepDate	2/17/2017	Analyst: RB		
Carbon disulfide	ND	0.19	5.9	ug/Kg	1	2/18/2017 02:30 AM
Carbon tetrachloride	ND	0.20	5.9	ug/Kg	1	2/18/2017 02:30 AM
Chlorobenzene	ND	0.11	5.9	ug/Kg	1	2/18/2017 02:30 AM
Chloroethane	ND	0.59	5.9	ug/Kg	1	2/18/2017 02:30 AM
Chloroform	ND	0.17	5.9	ug/Kg	1	2/18/2017 02:30 AM
Chloromethane	ND	0.21	5.9	ug/Kg	1	2/18/2017 02:30 AM
cis-1,2-Dichloroethene	ND	0.28	5.9	ug/Kg	1	2/18/2017 02:30 AM
cis-1,3-Dichloropropene	ND	0.12	5.9	ug/Kg	1	2/18/2017 02:30 AM
Di-isopropyl ether	ND	0.12	5.9	ug/Kg	1	2/18/2017 02:30 AM
Dibromochloromethane	ND	0.54	5.9	ug/Kg	1	2/18/2017 02:30 AM
Dibromomethane	ND	0.27	5.9	ug/Kg	1	2/18/2017 02:30 AM
Dichlorodifluoromethane	ND	0.22	5.9	ug/Kg	1	2/18/2017 02:30 AM
Ethyl Tert-butyl ether	ND	0.17	5.9	ug/Kg	1	2/18/2017 02:30 AM
Ethylbenzene	ND	0.16	5.9	ug/Kg	1	2/18/2017 02:30 AM
Freon-113	ND	0.67	5.9	ug/Kg	1	2/18/2017 02:30 AM
Hexachlorobutadiene	ND	0.32	5.9	ug/Kg	1	2/18/2017 02:30 AM
Isopropylbenzene	ND	0.090	5.9	ug/Kg	1	2/18/2017 02:30 AM
m,p-Xylene	ND	0.16	5.9	ug/Kg	1	2/18/2017 02:30 AM
Methylene chloride	1.6	1.2	5.9	J ug/Kg	1	2/18/2017 02:30 AM
MTBE	ND	0.25	5.9	ug/Kg	1	2/18/2017 02:30 AM
n-Butylbenzene	ND	0.12	5.9	ug/Kg	1	2/18/2017 02:30 AM
n-Propylbenzene	ND	0.13	5.9	ug/Kg	1	2/18/2017 02:30 AM
Naphthalene	ND	0.13	5.9	ug/Kg	1	2/18/2017 02:30 AM
o-Xylene	ND	0.064	5.9	ug/Kg	1	2/18/2017 02:30 AM
sec-Butylbenzene	ND	0.11	5.9	ug/Kg	1	2/18/2017 02:30 AM
Styrene	ND	0.23	5.9	ug/Kg	1	2/18/2017 02:30 AM
Tert-amyl methyl ether	ND	0.20	5.9	ug/Kg	1	2/18/2017 02:30 AM
Tert-Butanol	ND	1.7	30	ug/Kg	1	2/18/2017 02:30 AM
tert-Butylbenzene	ND	0.14	5.9	ug/Kg	1	2/18/2017 02:30 AM
Tetrachloroethene	ND	0.33	5.9	ug/Kg	1	2/18/2017 02:30 AM
Toluene	ND	0.12	5.9	ug/Kg	1	2/18/2017 02:30 AM
trans-1,2-Dichloroethene	ND	0.25	5.9	ug/Kg	1	2/18/2017 02:30 AM
trans-1,3-Dichloropropene	ND	0.092	5.9	ug/Kg	1	2/18/2017 02:30 AM
Trichloroethene	ND	0.13	5.9	ug/Kg	1	2/18/2017 02:30 AM
Trichlorofluoromethane	ND	0.74	5.9	ug/Kg	1	2/18/2017 02:30 AM
Vinyl chloride	ND	0.25	5.9	ug/Kg	1	2/18/2017 02:30 AM

Qualifiers: B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
Results are wet unless otherwise specified

E Value above quantitation range
J Analyte detected below quantitation limits
S Spike/Surrogate outside of limits due to matrix interference
DO Surrogate Diluted Out



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ANALYTICAL RESULTS

Print Date: 23-Feb-17

CLIENT: CH2MHill
Lab Order: N023124
Project: KMEP Norwalk
Lab ID: N023124-003

Client Sample ID: SVM-22-4.5
Collection Date: 2/14/2017 11:00:00 AM
Matrix: SOIL

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: NV00922-MS5_170217B	QC Batch: P17VS015	PrepDate	2/17/2017	Analyst: RB
Xylenes, Total	ND 0.16	5.9	ug/Kg	1 2/18/2017 02:30 AM
Surr: 1,2-Dichloroethane-d4	116 0	52-149	%REC	1 2/21/2017 03:02 PM
Surr: 1,2-Dichloroethane-d4	117 0	52-149	%REC	1 2/18/2017 02:30 AM
Surr: 4-Bromofluorobenzene	96.9 0	65-135	%REC	1 2/18/2017 02:30 AM
Surr: 4-Bromofluorobenzene	95.9 0	65-135	%REC	1 2/21/2017 03:02 PM
Surr: Dibromofluoromethane	103 0	65-135	%REC	1 2/18/2017 02:30 AM
Surr: Dibromofluoromethane	109 0	65-135	%REC	1 2/21/2017 03:02 PM
Surr: Toluene-d8	101 0	75-125	%REC	1 2/18/2017 02:30 AM
Surr: Toluene-d8	102 0	75-125	%REC	1 2/21/2017 03:02 PM

DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID

EPA 3550B

EPA 8015B

RunID: NV00922-GC3_170221B	QC Batch: 61335	PrepDate	2/21/2017	Analyst: MDM
TPH-Diesel (C13-C22)	ND 2900	10000	ug/Kg	1 2/22/2017 04:34 PM
TPH-Oil (C23-C44)	13000 1800	10000	ug/Kg	1 2/22/2017 04:34 PM
Surr: Octacosane	88.6 0	25-162	%REC	1 2/22/2017 04:34 PM
Surr: p-Terphenyl	91.7 0	47-142	%REC	1 2/22/2017 04:34 PM

GASOLINE RANGE ORGANICS BY GC/FID

EPA 8015B(M)

RunID: NV00922-GC4_170220A	QC Batch: E17VS027	PrepDate	2/20/2017	Analyst: RB
GRO (C4 - C12)	0.11 0.049	1.1	J mg/Kg	1 2/20/2017 04:21 PM
Surr: Chlorobenzene - d5	143 0	46-154	%REC	1 2/20/2017 04:21 PM

Qualifiers: B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
Results are wet unless otherwise specified

E Value above quantitation range
J Analyte detected below quantitation limits
S Spike/Surrogate outside of limits due to matrix interference
DO Surrogate Diluted Out



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ANALYTICAL RESULTS

Print Date: 23-Feb-17

CLIENT: CH2MHill
Lab Order: N023124
Project: KMEP Norwalk
Lab ID: N023124-004

Client Sample ID: DUP-1-4.5
Collection Date: 2/14/2017 11:05:00 AM
Matrix: SOIL

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: NV00922-MS5_170217B	QC Batch: P17VS015	PrepDate	2/17/2017	Analyst: RB		
1,1,1,2-Tetrachloroethane	ND	0.19	5.6	ug/Kg	1	2/18/2017 02:53 AM
1,1,1-Trichloroethane	ND	0.12	5.6	ug/Kg	1	2/18/2017 02:53 AM
1,1,2,2-Tetrachloroethane	ND	0.18	5.6	ug/Kg	1	2/18/2017 02:53 AM
1,1,2-Trichloroethane	ND	0.26	5.6	ug/Kg	1	2/18/2017 02:53 AM
1,1-Dichloroethane	ND	0.14	5.6	ug/Kg	1	2/18/2017 02:53 AM
1,1-Dichloroethene	ND	0.35	5.6	ug/Kg	1	2/18/2017 02:53 AM
1,1-Dichloropropene	ND	0.26	5.6	ug/Kg	1	2/18/2017 02:53 AM
1,2,3-Trichlorobenzene	ND	0.063	5.6	ug/Kg	1	2/18/2017 02:53 AM
1,2,3-Trichloropropane	ND	0.27	5.6	ug/Kg	1	2/18/2017 02:53 AM
1,2,4-Trichlorobenzene	ND	0.15	5.6	ug/Kg	1	2/18/2017 02:53 AM
1,2,4-Trimethylbenzene	ND	0.071	5.6	ug/Kg	1	2/18/2017 02:53 AM
1,2-Dibromo-3-chloropropane	ND	0.52	5.6	ug/Kg	1	2/18/2017 02:53 AM
1,2-Dibromoethane	ND	0.18	5.6	ug/Kg	1	2/18/2017 02:53 AM
1,2-Dichlorobenzene	ND	0.13	5.6	ug/Kg	1	2/18/2017 02:53 AM
1,2-Dichloroethane	ND	0.14	5.6	ug/Kg	1	2/18/2017 02:53 AM
1,2-Dichloropropane	ND	0.27	5.6	ug/Kg	1	2/18/2017 02:53 AM
1,3,5-Trimethylbenzene	ND	0.090	5.6	ug/Kg	1	2/18/2017 02:53 AM
1,3-Dichlorobenzene	ND	0.14	5.6	ug/Kg	1	2/18/2017 02:53 AM
1,3-Dichloropropane	ND	0.19	5.6	ug/Kg	1	2/18/2017 02:53 AM
1,4-Dichlorobenzene	ND	0.10	5.6	ug/Kg	1	2/18/2017 02:53 AM
2,2-Dichloropropane	ND	0.15	5.6	ug/Kg	1	2/18/2017 02:53 AM
2-Butanone	ND	1.9	56	ug/Kg	1	2/18/2017 02:53 AM
2-Chlorotoluene	ND	0.11	5.6	ug/Kg	1	2/18/2017 02:53 AM
2-Hexanone	ND	1.7	58	ug/Kg	1	2/21/2017 03:25 PM
4-Chlorotoluene	ND	0.20	5.6	ug/Kg	1	2/18/2017 02:53 AM
4-Isopropyltoluene	ND	0.11	5.6	ug/Kg	1	2/18/2017 02:53 AM
4-Methyl-2-pentanone	ND	0.67	56	ug/Kg	1	2/18/2017 02:53 AM
Acetone	ND	2.1	58	ug/Kg	1	2/21/2017 03:25 PM
Acrolein	ND	5.2	110	ug/Kg	1	2/18/2017 02:53 AM
Acrylonitrile	ND	1.8	56	ug/Kg	1	2/18/2017 02:53 AM
Benzene	ND	0.12	5.6	ug/Kg	1	2/18/2017 02:53 AM
Bromobenzene	ND	0.31	5.6	ug/Kg	1	2/18/2017 02:53 AM
Bromochloromethane	ND	0.60	5.6	ug/Kg	1	2/18/2017 02:53 AM
Bromodichloromethane	ND	0.18	5.6	ug/Kg	1	2/18/2017 02:53 AM
Bromoform	ND	0.47	5.6	ug/Kg	1	2/18/2017 02:53 AM
Bromomethane	ND	0.40	5.6	ug/Kg	1	2/18/2017 02:53 AM

Qualifiers: B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
Results are wet unless otherwise specified

E Value above quantitation range
J Analyte detected below quantitation limits
S Spike/Surrogate outside of limits due to matrix interference
DO Surrogate Diluted Out



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ANALYTICAL RESULTS

Print Date: 23-Feb-17

CLIENT: CH2MHill
Lab Order: N023124
Project: KMEP Norwalk
Lab ID: N023124-004

Client Sample ID: DUP-1-4.5
Collection Date: 2/14/2017 11:05:00 AM
Matrix: SOIL

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: NV00922-MS5_170217B	QC Batch: P17VS015	PrepDate	2/17/2017	Analyst: RB		
Carbon disulfide	ND	0.18	5.6	ug/Kg	1	2/18/2017 02:53 AM
Carbon tetrachloride	ND	0.19	5.6	ug/Kg	1	2/18/2017 02:53 AM
Chlorobenzene	ND	0.10	5.6	ug/Kg	1	2/18/2017 02:53 AM
Chloroethane	ND	0.55	5.6	ug/Kg	1	2/18/2017 02:53 AM
Chloroform	ND	0.16	5.6	ug/Kg	1	2/18/2017 02:53 AM
Chloromethane	ND	0.19	5.6	ug/Kg	1	2/18/2017 02:53 AM
cis-1,2-Dichloroethene	ND	0.27	5.6	ug/Kg	1	2/18/2017 02:53 AM
cis-1,3-Dichloropropene	ND	0.11	5.6	ug/Kg	1	2/18/2017 02:53 AM
Di-isopropyl ether	ND	0.11	5.6	ug/Kg	1	2/18/2017 02:53 AM
Dibromochloromethane	ND	0.51	5.6	ug/Kg	1	2/18/2017 02:53 AM
Dibromomethane	ND	0.26	5.6	ug/Kg	1	2/18/2017 02:53 AM
Dichlorodifluoromethane	ND	0.21	5.6	ug/Kg	1	2/18/2017 02:53 AM
Ethyl Tert-butyl ether	ND	0.16	5.6	ug/Kg	1	2/18/2017 02:53 AM
Ethylbenzene	ND	0.15	5.6	ug/Kg	1	2/18/2017 02:53 AM
Freon-113	ND	0.63	5.6	ug/Kg	1	2/18/2017 02:53 AM
Hexachlorobutadiene	ND	0.30	5.6	ug/Kg	1	2/18/2017 02:53 AM
Isopropylbenzene	ND	0.085	5.6	ug/Kg	1	2/18/2017 02:53 AM
m,p-Xylene	ND	0.15	5.6	ug/Kg	1	2/18/2017 02:53 AM
Methylene chloride	1.7	1.1	5.6	J ug/Kg	1	2/18/2017 02:53 AM
MTBE	ND	0.24	5.6	ug/Kg	1	2/18/2017 02:53 AM
n-Butylbenzene	ND	0.11	5.6	ug/Kg	1	2/18/2017 02:53 AM
n-Propylbenzene	ND	0.13	5.6	ug/Kg	1	2/18/2017 02:53 AM
Naphthalene	ND	0.12	5.6	ug/Kg	1	2/18/2017 02:53 AM
o-Xylene	ND	0.060	5.6	ug/Kg	1	2/18/2017 02:53 AM
sec-Butylbenzene	ND	0.10	5.6	ug/Kg	1	2/18/2017 02:53 AM
Styrene	ND	0.22	5.6	ug/Kg	1	2/18/2017 02:53 AM
Tert-amyl methyl ether	ND	0.18	5.6	ug/Kg	1	2/18/2017 02:53 AM
Tert-Butanol	ND	1.6	28	ug/Kg	1	2/18/2017 02:53 AM
tert-Butylbenzene	ND	0.13	5.6	ug/Kg	1	2/18/2017 02:53 AM
Tetrachloroethene	ND	0.31	5.6	ug/Kg	1	2/18/2017 02:53 AM
Toluene	ND	0.11	5.6	ug/Kg	1	2/18/2017 02:53 AM
trans-1,2-Dichloroethene	ND	0.23	5.6	ug/Kg	1	2/18/2017 02:53 AM
trans-1,3-Dichloropropene	ND	0.087	5.6	ug/Kg	1	2/18/2017 02:53 AM
Trichloroethene	ND	0.12	5.6	ug/Kg	1	2/18/2017 02:53 AM
Trichlorofluoromethane	ND	0.70	5.6	ug/Kg	1	2/18/2017 02:53 AM
Vinyl chloride	ND	0.24	5.6	ug/Kg	1	2/18/2017 02:53 AM

Qualifiers: B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
Results are wet unless otherwise specified

E Value above quantitation range
J Analyte detected below quantitation limits
S Spike/Surrogate outside of limits due to matrix interference
DO Surrogate Diluted Out



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ANALYTICAL RESULTS

Print Date: 23-Feb-17

CLIENT: CH2MHill
Lab Order: N023124
Project: KMEP Norwalk
Lab ID: N023124-004

Client Sample ID: DUP-1-4.5
Collection Date: 2/14/2017 11:05:00 AM
Matrix: SOIL

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: NV00922-MS5_170217B	QC Batch: P17VS015	PrepDate	2/17/2017	Analyst: RB
Xylenes, Total	ND 0.15	5.6	ug/Kg	1 2/18/2017 02:53 AM
Surr: 1,2-Dichloroethane-d4	114 0	52-149	%REC	1 2/21/2017 03:25 PM
Surr: 1,2-Dichloroethane-d4	118 0	52-149	%REC	1 2/18/2017 02:53 AM
Surr: 4-Bromofluorobenzene	99.4 0	65-135	%REC	1 2/18/2017 02:53 AM
Surr: 4-Bromofluorobenzene	96.1 0	65-135	%REC	1 2/21/2017 03:25 PM
Surr: Dibromofluoromethane	106 0	65-135	%REC	1 2/18/2017 02:53 AM
Surr: Dibromofluoromethane	108 0	65-135	%REC	1 2/21/2017 03:25 PM
Surr: Toluene-d8	99.6 0	75-125	%REC	1 2/18/2017 02:53 AM
Surr: Toluene-d8	102 0	75-125	%REC	1 2/21/2017 03:25 PM

DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID

EPA 3550B

EPA 8015B

RunID: NV00922-GC3_170221B	QC Batch: 61335	PrepDate	2/21/2017	Analyst: MDM
TPH-Diesel (C13-C22)	ND 2900	10000	ug/Kg	1 2/22/2017 05:07 PM
TPH-Oil (C23-C44)	14000 1800	10000	ug/Kg	1 2/22/2017 05:07 PM
Surr: Octacosane	85.5 0	25-162	%REC	1 2/22/2017 05:07 PM
Surr: p-Terphenyl	88.3 0	47-142	%REC	1 2/22/2017 05:07 PM

GASOLINE RANGE ORGANICS BY GC/FID

EPA 8015B(M)

RunID: NV00922-GC4_170220A	QC Batch: E17VS027	PrepDate	2/20/2017	Analyst: RB
GRO (C4 - C12)	0.11 0.053	1.2	J mg/Kg	1 2/20/2017 04:55 PM
Surr: Chlorobenzene - d5	145 0	46-154	%REC	1 2/20/2017 04:55 PM

Qualifiers:	B Analyte detected in the associated Method Blank	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	S Spike/Surrogate outside of limits due to matrix interference
	Results are wet unless otherwise specified	DO Surrogate Diluted Out



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ANALYTICAL RESULTS

Print Date: 23-Feb-17

CLIENT: CH2MHill
Lab Order: N023124
Project: KMEP Norwalk
Lab ID: N023124-005

Client Sample ID: SVM-22-9.5
Collection Date: 2/14/2017 11:15:00 AM
Matrix: SOIL

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: NV00922-MS5_170217B	QC Batch: P17VS015	PrepDate	2/17/2017	Analyst: RB		
1,1,1,2-Tetrachloroethane	ND	0.17	4.9	ug/Kg	1	2/18/2017 03:16 AM
1,1,1-Trichloroethane	ND	0.11	4.9	ug/Kg	1	2/18/2017 03:16 AM
1,1,2,2-Tetrachloroethane	ND	0.15	4.9	ug/Kg	1	2/18/2017 03:16 AM
1,1,2-Trichloroethane	ND	0.23	4.9	ug/Kg	1	2/18/2017 03:16 AM
1,1-Dichloroethane	ND	0.12	4.9	ug/Kg	1	2/18/2017 03:16 AM
1,1-Dichloroethene	ND	0.31	4.9	ug/Kg	1	2/18/2017 03:16 AM
1,1-Dichloropropene	ND	0.23	4.9	ug/Kg	1	2/18/2017 03:16 AM
1,2,3-Trichlorobenzene	ND	0.056	4.9	ug/Kg	1	2/18/2017 03:16 AM
1,2,3-Trichloropropane	ND	0.24	4.9	ug/Kg	1	2/18/2017 03:16 AM
1,2,4-Trichlorobenzene	ND	0.13	4.9	ug/Kg	1	2/18/2017 03:16 AM
1,2,4-Trimethylbenzene	ND	0.062	4.9	ug/Kg	1	2/18/2017 03:16 AM
1,2-Dibromo-3-chloropropane	ND	0.45	4.9	ug/Kg	1	2/18/2017 03:16 AM
1,2-Dibromoethane	ND	0.15	4.9	ug/Kg	1	2/18/2017 03:16 AM
1,2-Dichlorobenzene	ND	0.11	4.9	ug/Kg	1	2/18/2017 03:16 AM
1,2-Dichloroethane	ND	0.12	4.9	ug/Kg	1	2/18/2017 03:16 AM
1,2-Dichloropropane	ND	0.23	4.9	ug/Kg	1	2/18/2017 03:16 AM
1,3,5-Trimethylbenzene	ND	0.079	4.9	ug/Kg	1	2/18/2017 03:16 AM
1,3-Dichlorobenzene	ND	0.12	4.9	ug/Kg	1	2/18/2017 03:16 AM
1,3-Dichloropropane	ND	0.16	4.9	ug/Kg	1	2/18/2017 03:16 AM
1,4-Dichlorobenzene	ND	0.092	4.9	ug/Kg	1	2/18/2017 03:16 AM
2,2-Dichloropropane	ND	0.13	4.9	ug/Kg	1	2/18/2017 03:16 AM
2-Butanone	2.9	1.7	49	J ug/Kg	1	2/18/2017 03:16 AM
2-Chlorotoluene	ND	0.093	4.9	ug/Kg	1	2/18/2017 03:16 AM
2-Hexanone	ND	1.3	45	ug/Kg	1	2/21/2017 03:47 PM
4-Chlorotoluene	ND	0.17	4.9	ug/Kg	1	2/18/2017 03:16 AM
4-Isopropyltoluene	ND	0.096	4.9	ug/Kg	1	2/18/2017 03:16 AM
4-Methyl-2-pentanone	ND	0.59	49	ug/Kg	1	2/18/2017 03:16 AM
Acetone	ND	1.7	45	ug/Kg	1	2/21/2017 03:47 PM
Acrolein	ND	4.5	97	ug/Kg	1	2/18/2017 03:16 AM
Acrylonitrile	ND	1.6	49	ug/Kg	1	2/18/2017 03:16 AM
Benzene	1.4	0.11	4.9	J ug/Kg	1	2/18/2017 03:16 AM
Bromobenzene	ND	0.27	4.9	ug/Kg	1	2/18/2017 03:16 AM
Bromochloromethane	ND	0.53	4.9	ug/Kg	1	2/18/2017 03:16 AM
Bromodichloromethane	ND	0.16	4.9	ug/Kg	1	2/18/2017 03:16 AM
Bromoform	ND	0.41	4.9	ug/Kg	1	2/18/2017 03:16 AM
Bromomethane	ND	0.35	4.9	ug/Kg	1	2/18/2017 03:16 AM

Qualifiers: B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
Results are wet unless otherwise specified

E Value above quantitation range
J Analyte detected below quantitation limits
S Spike/Surrogate outside of limits due to matrix interference
DO Surrogate Diluted Out



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ANALYTICAL RESULTS

Print Date: 23-Feb-17

CLIENT: CH2MHill
Lab Order: N023124
Project: KMEP Norwalk
Lab ID: N023124-005

Client Sample ID: SVM-22-9.5
Collection Date: 2/14/2017 11:15:00 AM
Matrix: SOIL

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: NV00922-MS5_170217B	QC Batch: P17VS015	PrepDate	2/17/2017	Analyst: RB		
Carbon disulfide	ND	0.16	4.9	ug/Kg	1	2/18/2017 03:16 AM
Carbon tetrachloride	ND	0.16	4.9	ug/Kg	1	2/18/2017 03:16 AM
Chlorobenzene	ND	0.090	4.9	ug/Kg	1	2/18/2017 03:16 AM
Chloroethane	ND	0.48	4.9	ug/Kg	1	2/18/2017 03:16 AM
Chloroform	ND	0.14	4.9	ug/Kg	1	2/18/2017 03:16 AM
Chloromethane	ND	0.17	4.9	ug/Kg	1	2/18/2017 03:16 AM
cis-1,2-Dichloroethene	ND	0.23	4.9	ug/Kg	1	2/18/2017 03:16 AM
cis-1,3-Dichloropropene	ND	0.099	4.9	ug/Kg	1	2/18/2017 03:16 AM
Di-isopropyl ether	ND	0.097	4.9	ug/Kg	1	2/18/2017 03:16 AM
Dibromochloromethane	ND	0.45	4.9	ug/Kg	1	2/18/2017 03:16 AM
Dibromomethane	ND	0.22	4.9	ug/Kg	1	2/18/2017 03:16 AM
Dichlorodifluoromethane	ND	0.18	4.9	ug/Kg	1	2/18/2017 03:16 AM
Ethyl Tert-butyl ether	ND	0.14	4.9	ug/Kg	1	2/18/2017 03:16 AM
Ethylbenzene	ND	0.13	4.9	ug/Kg	1	2/18/2017 03:16 AM
Freon-113	ND	0.55	4.9	ug/Kg	1	2/18/2017 03:16 AM
Hexachlorobutadiene	ND	0.26	4.9	ug/Kg	1	2/18/2017 03:16 AM
Isopropylbenzene	ND	0.074	4.9	ug/Kg	1	2/18/2017 03:16 AM
m,p-Xylene	ND	0.13	4.9	ug/Kg	1	2/18/2017 03:16 AM
Methylene chloride	1.7	0.99	4.9	J ug/Kg	1	2/18/2017 03:16 AM
MTBE	ND	0.21	4.9	ug/Kg	1	2/18/2017 03:16 AM
n-Butylbenzene	ND	0.096	4.9	ug/Kg	1	2/18/2017 03:16 AM
n-Propylbenzene	ND	0.11	4.9	ug/Kg	1	2/18/2017 03:16 AM
Naphthalene	ND	0.10	4.9	ug/Kg	1	2/18/2017 03:16 AM
o-Xylene	ND	0.053	4.9	ug/Kg	1	2/18/2017 03:16 AM
sec-Butylbenzene	ND	0.090	4.9	ug/Kg	1	2/18/2017 03:16 AM
Styrene	ND	0.19	4.9	ug/Kg	1	2/18/2017 03:16 AM
Tert-amyl methyl ether	ND	0.16	4.9	ug/Kg	1	2/18/2017 03:16 AM
Tert-Butanol	ND	1.4	24	ug/Kg	1	2/18/2017 03:16 AM
tert-Butylbenzene	ND	0.12	4.9	ug/Kg	1	2/18/2017 03:16 AM
Tetrachloroethene	ND	0.27	4.9	ug/Kg	1	2/18/2017 03:16 AM
Toluene	1.1	0.096	4.9	J ug/Kg	1	2/18/2017 03:16 AM
trans-1,2-Dichloroethene	ND	0.20	4.9	ug/Kg	1	2/18/2017 03:16 AM
trans-1,3-Dichloropropene	ND	0.076	4.9	ug/Kg	1	2/18/2017 03:16 AM
Trichloroethene	ND	0.11	4.9	ug/Kg	1	2/18/2017 03:16 AM
Trichlorofluoromethane	ND	0.61	4.9	ug/Kg	1	2/18/2017 03:16 AM
Vinyl chloride	ND	0.21	4.9	ug/Kg	1	2/18/2017 03:16 AM

Qualifiers: B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
Results are wet unless otherwise specified

E Value above quantitation range
J Analyte detected below quantitation limits
S Spike/Surrogate outside of limits due to matrix interference
DO Surrogate Diluted Out



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ANALYTICAL RESULTS

Print Date: 23-Feb-17

CLIENT: CH2MHill
Lab Order: N023124
Project: KMEP Norwalk
Lab ID: N023124-005

Client Sample ID: SVM-22-9.5
Collection Date: 2/14/2017 11:15:00 AM
Matrix: SOIL

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: NV00922-MS5_170217B	QC Batch: P17VS015	PrepDate	2/17/2017	Analyst: RB		
Xylenes, Total	ND	0.13	4.9	ug/Kg	1	2/18/2017 03:16 AM
Surr: 1,2-Dichloroethane-d4	117	0	52-149	%REC	1	2/21/2017 03:47 PM
Surr: 1,2-Dichloroethane-d4	117	0	52-149	%REC	1	2/18/2017 03:16 AM
Surr: 4-Bromofluorobenzene	95.6	0	65-135	%REC	1	2/18/2017 03:16 AM
Surr: 4-Bromofluorobenzene	93.0	0	65-135	%REC	1	2/21/2017 03:47 PM
Surr: Dibromofluoromethane	101	0	65-135	%REC	1	2/18/2017 03:16 AM
Surr: Dibromofluoromethane	102	0	65-135	%REC	1	2/21/2017 03:47 PM
Surr: Toluene-d8	102	0	75-125	%REC	1	2/18/2017 03:16 AM
Surr: Toluene-d8	102	0	75-125	%REC	1	2/21/2017 03:47 PM

DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID

EPA 3550B

EPA 8015B

RunID: NV00922-GC3_170221B	QC Batch: 61335	PrepDate	2/21/2017	Analyst: MDM		
TPH-Diesel (C13-C22)	ND	2900	10000	ug/Kg	1	2/22/2017 05:40 PM
TPH-Oil (C23-C44)	14000	1800	10000	ug/Kg	1	2/22/2017 05:40 PM
Surr: Octacosane	93.7	0	25-162	%REC	1	2/22/2017 05:40 PM
Surr: p-Terphenyl	97.0	0	47-142	%REC	1	2/22/2017 05:40 PM

GASOLINE RANGE ORGANICS BY GC/FID

EPA 8015B(M)

RunID: NV00922-GC4_170220A	QC Batch: E17VS027	PrepDate	2/20/2017	Analyst: RB		
GRO (C4 - C12)	0.086	0.036	0.82	J mg/Kg	1	2/20/2017 05:29 PM
Surr: Chlorobenzene - d5	148	0	46-154	%REC	1	2/20/2017 05:29 PM

Qualifiers:	B Analyte detected in the associated Method Blank	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	S Spike/Surrogate outside of limits due to matrix interference
	Results are wet unless otherwise specified	DO Surrogate Diluted Out



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ANALYTICAL RESULTS

Print Date: 23-Feb-17

CLIENT: CH2MHill
Lab Order: N023124
Project: KMEP Norwalk
Lab ID: N023124-006

Client Sample ID: SVM-21-4.5
Collection Date: 2/14/2017 1:20:00 PM
Matrix: SOIL

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: NV00922-MS5_170217B	QC Batch: P17VS015	PrepDate	2/17/2017	Analyst: RB		
1,1,1,2-Tetrachloroethane	ND	0.17	4.9	ug/Kg	1	2/18/2017 03:39 AM
1,1,1-Trichloroethane	ND	0.11	4.9	ug/Kg	1	2/18/2017 03:39 AM
1,1,2,2-Tetrachloroethane	ND	0.16	4.9	ug/Kg	1	2/18/2017 03:39 AM
1,1,2-Trichloroethane	ND	0.23	4.9	ug/Kg	1	2/18/2017 03:39 AM
1,1-Dichloroethane	ND	0.12	4.9	ug/Kg	1	2/18/2017 03:39 AM
1,1-Dichloroethene	ND	0.31	4.9	ug/Kg	1	2/18/2017 03:39 AM
1,1-Dichloropropene	ND	0.23	4.9	ug/Kg	1	2/18/2017 03:39 AM
1,2,3-Trichlorobenzene	ND	0.056	4.9	ug/Kg	1	2/18/2017 03:39 AM
1,2,3-Trichloropropane	ND	0.24	4.9	ug/Kg	1	2/18/2017 03:39 AM
1,2,4-Trichlorobenzene	ND	0.13	4.9	ug/Kg	1	2/18/2017 03:39 AM
1,2,4-Trimethylbenzene	ND	0.063	4.9	ug/Kg	1	2/18/2017 03:39 AM
1,2-Dibromo-3-chloropropane	ND	0.46	4.9	ug/Kg	1	2/18/2017 03:39 AM
1,2-Dibromoethane	ND	0.15	4.9	ug/Kg	1	2/18/2017 03:39 AM
1,2-Dichlorobenzene	ND	0.11	4.9	ug/Kg	1	2/18/2017 03:39 AM
1,2-Dichloroethane	ND	0.12	4.9	ug/Kg	1	2/18/2017 03:39 AM
1,2-Dichloropropane	ND	0.24	4.9	ug/Kg	1	2/18/2017 03:39 AM
1,3,5-Trimethylbenzene	ND	0.079	4.9	ug/Kg	1	2/18/2017 03:39 AM
1,3-Dichlorobenzene	ND	0.12	4.9	ug/Kg	1	2/18/2017 03:39 AM
1,3-Dichloropropane	ND	0.16	4.9	ug/Kg	1	2/18/2017 03:39 AM
1,4-Dichlorobenzene	ND	0.092	4.9	ug/Kg	1	2/18/2017 03:39 AM
2,2-Dichloropropane	ND	0.13	4.9	ug/Kg	1	2/18/2017 03:39 AM
2-Butanone	4.5	1.7	49	J ug/Kg	1	2/18/2017 03:39 AM
2-Chlorotoluene	ND	0.093	4.9	ug/Kg	1	2/18/2017 03:39 AM
2-Hexanone	ND	1.3	44	ug/Kg	1	2/21/2017 04:10 PM
4-Chlorotoluene	ND	0.17	4.9	ug/Kg	1	2/18/2017 03:39 AM
4-Isopropyltoluene	ND	0.097	4.9	ug/Kg	1	2/18/2017 03:39 AM
4-Methyl-2-pentanone	ND	0.59	49	ug/Kg	1	2/18/2017 03:39 AM
Acetone	ND	1.6	44	ug/Kg	1	2/21/2017 04:10 PM
Acrolein	ND	4.5	98	ug/Kg	1	2/18/2017 03:39 AM
Acrylonitrile	ND	1.6	49	ug/Kg	1	2/18/2017 03:39 AM
Benzene	0.69	0.11	4.9	J ug/Kg	1	2/18/2017 03:39 AM
Bromobenzene	ND	0.27	4.9	ug/Kg	1	2/18/2017 03:39 AM
Bromochloromethane	ND	0.53	4.9	ug/Kg	1	2/18/2017 03:39 AM
Bromodichloromethane	ND	0.16	4.9	ug/Kg	1	2/18/2017 03:39 AM
Bromoform	ND	0.41	4.9	ug/Kg	1	2/18/2017 03:39 AM
Bromomethane	ND	0.35	4.9	ug/Kg	1	2/18/2017 03:39 AM

Qualifiers: B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
Results are wet unless otherwise specified

E Value above quantitation range
J Analyte detected below quantitation limits
S Spike/Surrogate outside of limits due to matrix interference
DO Surrogate Diluted Out



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ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

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ANALYTICAL RESULTS

Print Date: 23-Feb-17

CLIENT: CH2MHill
Lab Order: N023124
Project: KMEP Norwalk
Lab ID: N023124-006

Client Sample ID: SVM-21-4.5
Collection Date: 2/14/2017 1:20:00 PM
Matrix: SOIL

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: NV00922-MS5_170217B	QC Batch: P17VS015	PrepDate	2/17/2017	Analyst: RB
Carbon disulfide	ND 0.16	4.9	ug/Kg	1 2/18/2017 03:39 AM
Carbon tetrachloride	ND 0.16	4.9	ug/Kg	1 2/18/2017 03:39 AM
Chlorobenzene	ND 0.090	4.9	ug/Kg	1 2/18/2017 03:39 AM
Chloroethane	ND 0.48	4.9	ug/Kg	1 2/18/2017 03:39 AM
Chloroform	ND 0.14	4.9	ug/Kg	1 2/18/2017 03:39 AM
Chloromethane	ND 0.17	4.9	ug/Kg	1 2/18/2017 03:39 AM
cis-1,2-Dichloroethene	ND 0.23	4.9	ug/Kg	1 2/18/2017 03:39 AM
cis-1,3-Dichloropropene	ND 0.10	4.9	ug/Kg	1 2/18/2017 03:39 AM
Di-isopropyl ether	ND 0.098	4.9	ug/Kg	1 2/18/2017 03:39 AM
Dibromochloromethane	ND 0.45	4.9	ug/Kg	1 2/18/2017 03:39 AM
Dibromomethane	ND 0.23	4.9	ug/Kg	1 2/18/2017 03:39 AM
Dichlorodifluoromethane	ND 0.18	4.9	ug/Kg	1 2/18/2017 03:39 AM
Ethyl Tert-butyl ether	ND 0.14	4.9	ug/Kg	1 2/18/2017 03:39 AM
Ethylbenzene	ND 0.13	4.9	ug/Kg	1 2/18/2017 03:39 AM
Freon-113	ND 0.55	4.9	ug/Kg	1 2/18/2017 03:39 AM
Hexachlorobutadiene	ND 0.26	4.9	ug/Kg	1 2/18/2017 03:39 AM
Isopropylbenzene	ND 0.074	4.9	ug/Kg	1 2/18/2017 03:39 AM
m,p-Xylene	ND 0.13	4.9	ug/Kg	1 2/18/2017 03:39 AM
Methylene chloride	1.5 0.99	4.9	J ug/Kg	1 2/18/2017 03:39 AM
MTBE	ND 0.21	4.9	ug/Kg	1 2/18/2017 03:39 AM
n-Butylbenzene	ND 0.096	4.9	ug/Kg	1 2/18/2017 03:39 AM
n-Propylbenzene	ND 0.11	4.9	ug/Kg	1 2/18/2017 03:39 AM
Naphthalene	ND 0.10	4.9	ug/Kg	1 2/18/2017 03:39 AM
o-Xylene	ND 0.053	4.9	ug/Kg	1 2/18/2017 03:39 AM
sec-Butylbenzene	ND 0.090	4.9	ug/Kg	1 2/18/2017 03:39 AM
Styrene	ND 0.19	4.9	ug/Kg	1 2/18/2017 03:39 AM
Tert-amyl methyl ether	ND 0.16	4.9	ug/Kg	1 2/18/2017 03:39 AM
Tert-Butanol	ND 1.4	24	ug/Kg	1 2/18/2017 03:39 AM
tert-Butylbenzene	ND 0.12	4.9	ug/Kg	1 2/18/2017 03:39 AM
Tetrachloroethene	ND 0.27	4.9	ug/Kg	1 2/18/2017 03:39 AM
Toluene	ND 0.097	4.9	ug/Kg	1 2/18/2017 03:39 AM
trans-1,2-Dichloroethene	ND 0.21	4.9	ug/Kg	1 2/18/2017 03:39 AM
trans-1,3-Dichloropropene	ND 0.076	4.9	ug/Kg	1 2/18/2017 03:39 AM
Trichloroethene	ND 0.11	4.9	ug/Kg	1 2/18/2017 03:39 AM
Trichlorofluoromethane	ND 0.61	4.9	ug/Kg	1 2/18/2017 03:39 AM
Vinyl chloride	ND 0.21	4.9	ug/Kg	1 2/18/2017 03:39 AM

Qualifiers: B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
Results are wet unless otherwise specified

E Value above quantitation range
J Analyte detected below quantitation limits
S Spike/Surrogate outside of limits due to matrix interference
DO Surrogate Diluted Out



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ANALYTICAL RESULTS

Print Date: 23-Feb-17

CLIENT: CH2MHill
Lab Order: N023124
Project: KMEP Norwalk
Lab ID: N023124-006

Client Sample ID: SVM-21-4.5
Collection Date: 2/14/2017 1:20:00 PM
Matrix: SOIL

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: NV00922-MS5_170217B	QC Batch: P17VS015	PrepDate	2/17/2017	Analyst: RB		
Xylenes, Total	ND	0.13	4.9	ug/Kg	1	2/18/2017 03:39 AM
Surr: 1,2-Dichloroethane-d4	124	0	52-149	%REC	1	2/21/2017 04:10 PM
Surr: 1,2-Dichloroethane-d4	123	0	52-149	%REC	1	2/18/2017 03:39 AM
Surr: 4-Bromofluorobenzene	97.1	0	65-135	%REC	1	2/18/2017 03:39 AM
Surr: 4-Bromofluorobenzene	87.5	0	65-135	%REC	1	2/21/2017 04:10 PM
Surr: Dibromofluoromethane	107	0	65-135	%REC	1	2/18/2017 03:39 AM
Surr: Dibromofluoromethane	113	0	65-135	%REC	1	2/21/2017 04:10 PM
Surr: Toluene-d8	103	0	75-125	%REC	1	2/18/2017 03:39 AM
Surr: Toluene-d8	103	0	75-125	%REC	1	2/21/2017 04:10 PM

DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID

EPA 3550B

EPA 8015B

RunID: NV00922-GC3_170221B	QC Batch: 61335	PrepDate	2/21/2017	Analyst: MDM			
TPH-Diesel (C13-C22)	4900	2900	10000	J	ug/Kg	1	2/22/2017 06:12 PM
TPH-Oil (C23-C44)	120000	1800	10000		ug/Kg	1	2/22/2017 06:12 PM
Surr: Octacosane	86.5	0	25-162	%REC	1	2/22/2017 06:12 PM	
Surr: p-Terphenyl	89.1	0	47-142	%REC	1	2/22/2017 06:12 PM	

GASOLINE RANGE ORGANICS BY GC/FID

EPA 8015B(M)

RunID: NV00922-GC4_170220A	QC Batch: E17VS027	PrepDate	2/20/2017	Analyst: RB			
GRO (C4 - C12)	0.10	0.044	1.0	J	mg/Kg	1	2/20/2017 06:03 PM
Surr: Chlorobenzene - d5	136	0	46-154	%REC	1	2/20/2017 06:03 PM	

Qualifiers: B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
Results are wet unless otherwise specified
E Value above quantitation range
J Analyte detected below quantitation limits
S Spike/Surrogate outside of limits due to matrix interference
DO Surrogate Diluted Out



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ANALYTICAL RESULTS

Print Date: 23-Feb-17

CLIENT: CH2MHill
Lab Order: N023124
Project: KMEP Norwalk
Lab ID: N023124-007

Client Sample ID: SVM-21-9.5
Collection Date: 2/14/2017 2:25:00 PM
Matrix: SOIL

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: NV00922-MS5_170217B	QC Batch: P17VS015	PrepDate	2/17/2017	Analyst: RB		
1,1,1,2-Tetrachloroethane	ND	0.15	4.3	ug/Kg	1	2/18/2017 04:02 AM
1,1,1-Trichloroethane	ND	0.095	4.3	ug/Kg	1	2/18/2017 04:02 AM
1,1,2,2-Tetrachloroethane	ND	0.14	4.3	ug/Kg	1	2/18/2017 04:02 AM
1,1,2-Trichloroethane	ND	0.20	4.3	ug/Kg	1	2/18/2017 04:02 AM
1,1-Dichloroethane	ND	0.10	4.3	ug/Kg	1	2/18/2017 04:02 AM
1,1-Dichloroethene	ND	0.27	4.3	ug/Kg	1	2/18/2017 04:02 AM
1,1-Dichloropropene	ND	0.20	4.3	ug/Kg	1	2/18/2017 04:02 AM
1,2,3-Trichlorobenzene	ND	0.049	4.3	ug/Kg	1	2/18/2017 04:02 AM
1,2,3-Trichloropropane	ND	0.21	4.3	ug/Kg	1	2/18/2017 04:02 AM
1,2,4-Trichlorobenzene	ND	0.12	4.3	ug/Kg	1	2/18/2017 04:02 AM
1,2,4-Trimethylbenzene	ND	0.055	4.3	ug/Kg	1	2/18/2017 04:02 AM
1,2-Dibromo-3-chloropropane	ND	0.40	4.3	ug/Kg	1	2/18/2017 04:02 AM
1,2-Dibromoethane	ND	0.14	4.3	ug/Kg	1	2/18/2017 04:02 AM
1,2-Dichlorobenzene	ND	0.099	4.3	ug/Kg	1	2/18/2017 04:02 AM
1,2-Dichloroethane	ND	0.11	4.3	ug/Kg	1	2/18/2017 04:02 AM
1,2-Dichloropropane	ND	0.21	4.3	ug/Kg	1	2/18/2017 04:02 AM
1,3,5-Trimethylbenzene	ND	0.070	4.3	ug/Kg	1	2/18/2017 04:02 AM
1,3-Dichlorobenzene	ND	0.11	4.3	ug/Kg	1	2/18/2017 04:02 AM
1,3-Dichloropropane	ND	0.14	4.3	ug/Kg	1	2/18/2017 04:02 AM
1,4-Dichlorobenzene	ND	0.081	4.3	ug/Kg	1	2/18/2017 04:02 AM
2,2-Dichloropropane	ND	0.12	4.3	ug/Kg	1	2/18/2017 04:02 AM
2-Butanone	ND	1.5	43	ug/Kg	1	2/18/2017 04:02 AM
2-Chlorotoluene	ND	0.082	4.3	ug/Kg	1	2/18/2017 04:02 AM
2-Hexanone	ND	1.3	46	ug/Kg	1	2/21/2017 04:33 PM
4-Chlorotoluene	ND	0.15	4.3	ug/Kg	1	2/18/2017 04:02 AM
4-Isopropyltoluene	ND	0.085	4.3	ug/Kg	1	2/18/2017 04:02 AM
4-Methyl-2-pentanone	ND	0.52	43	ug/Kg	1	2/18/2017 04:02 AM
Acetone	ND	1.7	46	ug/Kg	1	2/21/2017 04:33 PM
Acrolein	ND	4.0	86	ug/Kg	1	2/18/2017 04:02 AM
Acrylonitrile	ND	1.4	43	ug/Kg	1	2/18/2017 04:02 AM
Benzene	1.5	0.096	4.3	ug/Kg	J	2/18/2017 04:02 AM
Bromobenzene	ND	0.24	4.3	ug/Kg	1	2/18/2017 04:02 AM
Bromochloromethane	ND	0.47	4.3	ug/Kg	1	2/18/2017 04:02 AM
Bromodichloromethane	ND	0.14	4.3	ug/Kg	1	2/18/2017 04:02 AM
Bromoform	ND	0.36	4.3	ug/Kg	1	2/18/2017 04:02 AM
Bromomethane	ND	0.31	4.3	ug/Kg	1	2/18/2017 04:02 AM

Qualifiers: B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
Results are wet unless otherwise specified

E Value above quantitation range
J Analyte detected below quantitation limits
S Spike/Surrogate outside of limits due to matrix interference
DO Surrogate Diluted Out



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ANALYTICAL RESULTS

Print Date: 23-Feb-17

CLIENT: CH2MHill
Lab Order: N023124
Project: KMEP Norwalk
Lab ID: N023124-007

Client Sample ID: SVM-21-9.5
Collection Date: 2/14/2017 2:25:00 PM
Matrix: SOIL

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: NV00922-MS5_170217B	QC Batch: P17VS015	PrepDate	2/17/2017	Analyst: RB		
Carbon disulfide	ND	0.14	4.3	ug/Kg	1	2/18/2017 04:02 AM
Carbon tetrachloride	ND	0.14	4.3	ug/Kg	1	2/18/2017 04:02 AM
Chlorobenzene	ND	0.079	4.3	ug/Kg	1	2/18/2017 04:02 AM
Chloroethane	ND	0.42	4.3	ug/Kg	1	2/18/2017 04:02 AM
Chloroform	ND	0.13	4.3	ug/Kg	1	2/18/2017 04:02 AM
Chloromethane	ND	0.15	4.3	ug/Kg	1	2/18/2017 04:02 AM
cis-1,2-Dichloroethene	ND	0.21	4.3	ug/Kg	1	2/18/2017 04:02 AM
cis-1,3-Dichloropropene	ND	0.088	4.3	ug/Kg	1	2/18/2017 04:02 AM
Di-isopropyl ether	ND	0.086	4.3	ug/Kg	1	2/18/2017 04:02 AM
Dibromochloromethane	ND	0.40	4.3	ug/Kg	1	2/18/2017 04:02 AM
Dibromomethane	ND	0.20	4.3	ug/Kg	1	2/18/2017 04:02 AM
Dichlorodifluoromethane	ND	0.16	4.3	ug/Kg	1	2/18/2017 04:02 AM
Ethyl Tert-butyl ether	ND	0.12	4.3	ug/Kg	1	2/18/2017 04:02 AM
Ethylbenzene	ND	0.12	4.3	ug/Kg	1	2/18/2017 04:02 AM
Freon-113	ND	0.49	4.3	ug/Kg	1	2/18/2017 04:02 AM
Hexachlorobutadiene	ND	0.23	4.3	ug/Kg	1	2/18/2017 04:02 AM
Isopropylbenzene	ND	0.065	4.3	ug/Kg	1	2/18/2017 04:02 AM
m,p-Xylene	ND	0.12	4.3	ug/Kg	1	2/18/2017 04:02 AM
Methylene chloride	1.2	0.87	4.3	J ug/Kg	1	2/18/2017 04:02 AM
MTBE	ND	0.18	4.3	ug/Kg	1	2/18/2017 04:02 AM
n-Butylbenzene	ND	0.084	4.3	ug/Kg	1	2/18/2017 04:02 AM
n-Propylbenzene	ND	0.097	4.3	ug/Kg	1	2/18/2017 04:02 AM
Naphthalene	ND	0.092	4.3	ug/Kg	1	2/18/2017 04:02 AM
o-Xylene	ND	0.046	4.3	ug/Kg	1	2/18/2017 04:02 AM
sec-Butylbenzene	ND	0.079	4.3	ug/Kg	1	2/18/2017 04:02 AM
Styrene	ND	0.17	4.3	ug/Kg	1	2/18/2017 04:02 AM
Tert-amyl methyl ether	ND	0.14	4.3	ug/Kg	1	2/18/2017 04:02 AM
Tert-Butanol	ND	1.2	21	ug/Kg	1	2/18/2017 04:02 AM
tert-Butylbenzene	ND	0.10	4.3	ug/Kg	1	2/18/2017 04:02 AM
Tetrachloroethene	ND	0.24	4.3	ug/Kg	1	2/18/2017 04:02 AM
Toluene	1.3	0.085	4.3	J ug/Kg	1	2/18/2017 04:02 AM
trans-1,2-Dichloroethene	ND	0.18	4.3	ug/Kg	1	2/18/2017 04:02 AM
trans-1,3-Dichloropropene	ND	0.067	4.3	ug/Kg	1	2/18/2017 04:02 AM
Trichloroethene	ND	0.095	4.3	ug/Kg	1	2/18/2017 04:02 AM
Trichlorofluoromethane	ND	0.54	4.3	ug/Kg	1	2/18/2017 04:02 AM
Vinyl chloride	ND	0.18	4.3	ug/Kg	1	2/18/2017 04:02 AM

Qualifiers: B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
Results are wet unless otherwise specified

E Value above quantitation range
J Analyte detected below quantitation limits
S Spike/Surrogate outside of limits due to matrix interference
DO Surrogate Diluted Out



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ASSET Laboratories

ANALYTICAL RESULTS

Print Date: 23-Feb-17

CLIENT: CH2MHill
Lab Order: N023124
Project: KMEP Norwalk
Lab ID: N023124-007

Client Sample ID: SVM-21-9.5
Collection Date: 2/14/2017 2:25:00 PM
Matrix: SOIL

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: NV00922-MS5_170217B	QC Batch: P17VS015	PrepDate	2/17/2017	Analyst: RB		
Xylenes, Total	ND	0.12	4.3	ug/Kg	1	2/18/2017 04:02 AM
Surr: 1,2-Dichloroethane-d4	121	0	52-149	%REC	1	2/18/2017 04:02 AM
Surr: 1,2-Dichloroethane-d4	122	0	52-149	%REC	1	2/21/2017 04:33 PM
Surr: 4-Bromofluorobenzene	98.9	0	65-135	%REC	1	2/18/2017 04:02 AM
Surr: 4-Bromofluorobenzene	97.8	0	65-135	%REC	1	2/21/2017 04:33 PM
Surr: Dibromofluoromethane	102	0	65-135	%REC	1	2/18/2017 04:02 AM
Surr: Dibromofluoromethane	105	0	65-135	%REC	1	2/21/2017 04:33 PM
Surr: Toluene-d8	101	0	75-125	%REC	1	2/18/2017 04:02 AM
Surr: Toluene-d8	101	0	75-125	%REC	1	2/21/2017 04:33 PM

DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID

EPA 3550B

EPA 8015B

RunID: NV00922-GC3_170221B	QC Batch: 61335	PrepDate	2/21/2017	Analyst: MDM		
TPH-Diesel (C13-C22)	ND	2900	10000	ug/Kg	1	2/22/2017 06:45 PM
TPH-Oil (C23-C44)	35000	1800	10000	ug/Kg	1	2/22/2017 06:45 PM
Surr: Octacosane	86.1	0	25-162	%REC	1	2/22/2017 06:45 PM
Surr: p-Terphenyl	87.8	0	47-142	%REC	1	2/22/2017 06:45 PM

GASOLINE RANGE ORGANICS BY GC/FID

EPA 8015B(M)

RunID: NV00922-GC4_170220A	QC Batch: E17VS027	PrepDate	2/20/2017	Analyst: RB		
GRO (C4 - C12)	0.087	0.040	0.92	J mg/Kg	1	2/20/2017 06:38 PM
Surr: Chlorobenzene - d5	139	0	46-154	%REC	1	2/20/2017 06:38 PM

Qualifiers:	B Analyte detected in the associated Method Blank	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	S Spike/Surrogate outside of limits due to matrix interference
	Results are wet unless otherwise specified	DO Surrogate Diluted Out



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ANALYTICAL RESULTS

Print Date: 23-Feb-17

CLIENT: CH2MHill
Lab Order: N023124
Project: KMEP Norwalk
Lab ID: N023124-008

Client Sample ID: SVM-20-4.5
Collection Date: 2/15/2017 8:00:00 AM
Matrix: SOIL

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: NV00922-MS5_170217B	QC Batch: P17VS015	PrepDate	2/17/2017	Analyst: RB		
1,1,1,2-Tetrachloroethane	ND	0.18	5.3	ug/Kg	1	2/18/2017 04:25 AM
1,1,1-Trichloroethane	ND	0.12	5.3	ug/Kg	1	2/18/2017 04:25 AM
1,1,2,2-Tetrachloroethane	ND	0.17	5.3	ug/Kg	1	2/18/2017 04:25 AM
1,1,2-Trichloroethane	ND	0.25	5.3	ug/Kg	1	2/18/2017 04:25 AM
1,1-Dichloroethane	ND	0.13	5.3	ug/Kg	1	2/18/2017 04:25 AM
1,1-Dichloroethene	ND	0.34	5.3	ug/Kg	1	2/18/2017 04:25 AM
1,1-Dichloropropene	ND	0.25	5.3	ug/Kg	1	2/18/2017 04:25 AM
1,2,3-Trichlorobenzene	ND	0.061	5.3	ug/Kg	1	2/18/2017 04:25 AM
1,2,3-Trichloropropane	ND	0.26	5.3	ug/Kg	1	2/18/2017 04:25 AM
1,2,4-Trichlorobenzene	ND	0.14	5.3	ug/Kg	1	2/18/2017 04:25 AM
1,2,4-Trimethylbenzene	ND	0.068	5.3	ug/Kg	1	2/18/2017 04:25 AM
1,2-Dibromo-3-chloropropane	ND	0.50	5.3	ug/Kg	1	2/18/2017 04:25 AM
1,2-Dibromoethane	ND	0.17	5.3	ug/Kg	1	2/18/2017 04:25 AM
1,2-Dichlorobenzene	ND	0.12	5.3	ug/Kg	1	2/18/2017 04:25 AM
1,2-Dichloroethane	ND	0.13	5.3	ug/Kg	1	2/18/2017 04:25 AM
1,2-Dichloropropane	ND	0.26	5.3	ug/Kg	1	2/18/2017 04:25 AM
1,3,5-Trimethylbenzene	ND	0.087	5.3	ug/Kg	1	2/18/2017 04:25 AM
1,3-Dichlorobenzene	ND	0.14	5.3	ug/Kg	1	2/18/2017 04:25 AM
1,3-Dichloropropane	ND	0.18	5.3	ug/Kg	1	2/18/2017 04:25 AM
1,4-Dichlorobenzene	ND	0.10	5.3	ug/Kg	1	2/18/2017 04:25 AM
2,2-Dichloropropane	ND	0.15	5.3	ug/Kg	1	2/18/2017 04:25 AM
2-Butanone	ND	1.8	53	ug/Kg	1	2/18/2017 04:25 AM
2-Chlorotoluene	ND	0.10	5.3	ug/Kg	1	2/18/2017 04:25 AM
2-Hexanone	ND	1.8	62	ug/Kg	1	2/21/2017 04:55 PM
4-Chlorotoluene	ND	0.19	5.3	ug/Kg	1	2/18/2017 04:25 AM
4-Isopropyltoluene	ND	0.11	5.3	ug/Kg	1	2/18/2017 04:25 AM
4-Methyl-2-pentanone	ND	0.65	53	ug/Kg	1	2/18/2017 04:25 AM
Acetone	ND	2.3	62	ug/Kg	1	2/21/2017 04:55 PM
Acrolein	ND	5.0	110	ug/Kg	1	2/18/2017 04:25 AM
Acrylonitrile	ND	1.7	53	ug/Kg	1	2/18/2017 04:25 AM
Benzene	ND	0.12	5.3	ug/Kg	1	2/18/2017 04:25 AM
Bromobenzene	ND	0.30	5.3	ug/Kg	1	2/18/2017 04:25 AM
Bromochloromethane	ND	0.58	5.3	ug/Kg	1	2/18/2017 04:25 AM
Bromodichloromethane	ND	0.17	5.3	ug/Kg	1	2/18/2017 04:25 AM
Bromoform	ND	0.45	5.3	ug/Kg	1	2/18/2017 04:25 AM
Bromomethane	ND	0.39	5.3	ug/Kg	1	2/18/2017 04:25 AM

Qualifiers: B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
Results are wet unless otherwise specified

E Value above quantitation range
J Analyte detected below quantitation limits
S Spike/Surrogate outside of limits due to matrix interference
DO Surrogate Diluted Out



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ANALYTICAL RESULTS

Print Date: 23-Feb-17

CLIENT: CH2MHill
Lab Order: N023124
Project: KMEP Norwalk
Lab ID: N023124-008

Client Sample ID: SVM-20-4.5
Collection Date: 2/15/2017 8:00:00 AM
Matrix: SOIL

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: NV00922-MS5_170217B	QC Batch: P17VS015	PrepDate	2/17/2017	Analyst: RB		
Carbon disulfide	ND	0.17	5.3	ug/Kg	1	2/18/2017 04:25 AM
Carbon tetrachloride	ND	0.18	5.3	ug/Kg	1	2/18/2017 04:25 AM
Chlorobenzene	ND	0.098	5.3	ug/Kg	1	2/18/2017 04:25 AM
Chloroethane	ND	0.53	5.3	ug/Kg	1	2/18/2017 04:25 AM
Chloroform	ND	0.16	5.3	ug/Kg	1	2/18/2017 04:25 AM
Chloromethane	ND	0.19	5.3	ug/Kg	1	2/18/2017 04:25 AM
cis-1,2-Dichloroethene	ND	0.26	5.3	ug/Kg	1	2/18/2017 04:25 AM
cis-1,3-Dichloropropene	ND	0.11	5.3	ug/Kg	1	2/18/2017 04:25 AM
Di-isopropyl ether	ND	0.11	5.3	ug/Kg	1	2/18/2017 04:25 AM
Dibromochloromethane	ND	0.49	5.3	ug/Kg	1	2/18/2017 04:25 AM
Dibromomethane	ND	0.25	5.3	ug/Kg	1	2/18/2017 04:25 AM
Dichlorodifluoromethane	ND	0.20	5.3	ug/Kg	1	2/18/2017 04:25 AM
Ethyl Tert-butyl ether	ND	0.16	5.3	ug/Kg	1	2/18/2017 04:25 AM
Ethylbenzene	ND	0.15	5.3	ug/Kg	1	2/18/2017 04:25 AM
Freon-113	ND	0.60	5.3	ug/Kg	1	2/18/2017 04:25 AM
Hexachlorobutadiene	ND	0.29	5.3	ug/Kg	1	2/18/2017 04:25 AM
Isopropylbenzene	ND	0.081	5.3	ug/Kg	1	2/18/2017 04:25 AM
m,p-Xylene	ND	0.15	5.3	ug/Kg	1	2/18/2017 04:25 AM
Methylene chloride	1.8	1.1	5.3	J ug/Kg	1	2/18/2017 04:25 AM
MTBE	ND	0.23	5.3	ug/Kg	1	2/18/2017 04:25 AM
n-Butylbenzene	ND	0.10	5.3	ug/Kg	1	2/18/2017 04:25 AM
n-Propylbenzene	ND	0.12	5.3	ug/Kg	1	2/18/2017 04:25 AM
Naphthalene	ND	0.11	5.3	ug/Kg	1	2/18/2017 04:25 AM
o-Xylene	ND	0.058	5.3	ug/Kg	1	2/18/2017 04:25 AM
sec-Butylbenzene	ND	0.098	5.3	ug/Kg	1	2/18/2017 04:25 AM
Styrene	ND	0.21	5.3	ug/Kg	1	2/18/2017 04:25 AM
Tert-amyl methyl ether	ND	0.18	5.3	ug/Kg	1	2/18/2017 04:25 AM
Tert-Butanol	ND	1.5	27	ug/Kg	1	2/18/2017 04:25 AM
tert-Butylbenzene	ND	0.13	5.3	ug/Kg	1	2/18/2017 04:25 AM
Tetrachloroethene	ND	0.30	5.3	ug/Kg	1	2/18/2017 04:25 AM
Toluene	ND	0.11	5.3	ug/Kg	1	2/18/2017 04:25 AM
trans-1,2-Dichloroethene	ND	0.22	5.3	ug/Kg	1	2/18/2017 04:25 AM
trans-1,3-Dichloropropene	ND	0.083	5.3	ug/Kg	1	2/18/2017 04:25 AM
Trichloroethene	ND	0.12	5.3	ug/Kg	1	2/18/2017 04:25 AM
Trichlorofluoromethane	ND	0.67	5.3	ug/Kg	1	2/18/2017 04:25 AM
Vinyl chloride	ND	0.23	5.3	ug/Kg	1	2/18/2017 04:25 AM

Qualifiers: B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
Results are wet unless otherwise specified

E Value above quantitation range
J Analyte detected below quantitation limits
S Spike/Surrogate outside of limits due to matrix interference
DO Surrogate Diluted Out



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ANALYTICAL RESULTS

Print Date: 23-Feb-17

CLIENT: CH2MHill
Lab Order: N023124
Project: KMEP Norwalk
Lab ID: N023124-008

Client Sample ID: SVM-20-4.5
Collection Date: 2/15/2017 8:00:00 AM
Matrix: SOIL

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: NV00922-MS5_170217B	QC Batch: P17VS015	PrepDate	2/17/2017	Analyst: RB		
Xylenes, Total	ND	0.15	5.3	ug/Kg	1	2/18/2017 04:25 AM
Surr: 1,2-Dichloroethane-d4	120	0	52-149	%REC	1	2/21/2017 04:55 PM
Surr: 1,2-Dichloroethane-d4	123	0	52-149	%REC	1	2/18/2017 04:25 AM
Surr: 4-Bromofluorobenzene	98.9	0	65-135	%REC	1	2/18/2017 04:25 AM
Surr: 4-Bromofluorobenzene	96.3	0	65-135	%REC	1	2/21/2017 04:55 PM
Surr: Dibromofluoromethane	107	0	65-135	%REC	1	2/18/2017 04:25 AM
Surr: Dibromofluoromethane	108	0	65-135	%REC	1	2/21/2017 04:55 PM
Surr: Toluene-d8	101	0	75-125	%REC	1	2/18/2017 04:25 AM
Surr: Toluene-d8	104	0	75-125	%REC	1	2/21/2017 04:55 PM

DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID

EPA 3550B

EPA 8015B

RunID: NV00922-GC3_170221B	QC Batch: 61335	PrepDate	2/21/2017	Analyst: MDM		
TPH-Diesel (C13-C22)	ND	2900	10000	ug/Kg	1	2/22/2017 07:17 PM
TPH-Oil (C23-C44)	13000	1800	10000	ug/Kg	1	2/22/2017 07:17 PM
Surr: Octacosane	90.4	0	25-162	%REC	1	2/22/2017 07:17 PM
Surr: p-Terphenyl	93.2	0	47-142	%REC	1	2/22/2017 07:17 PM

GASOLINE RANGE ORGANICS BY GC/FID

EPA 8015B(M)

RunID: NV00922-GC4_170220A	QC Batch: E17VS027	PrepDate	2/20/2017	Analyst: RB		
GRO (C4 - C12)	0.10	0.047	1.1	J mg/Kg	1	2/20/2017 07:12 PM
Surr: Chlorobenzene - d5	145	0	46-154	%REC	1	2/20/2017 07:12 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	S	Spike/Surrogate outside of limits due to matrix interference
		Results are wet unless otherwise specified	DO	Surrogate Diluted Out



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ANALYTICAL RESULTS

Print Date: 23-Feb-17

CLIENT: CH2MHill
Lab Order: N023124
Project: KMEP Norwalk
Lab ID: N023124-009

Client Sample ID: SVM-20-9.5
Collection Date: 2/15/2017 8:15:00 AM
Matrix: SOIL

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: NV00922-MS5_170217B	QC Batch: P17VS015	PrepDate	2/17/2017	Analyst: RB		
1,1,1,2-Tetrachloroethane	ND	0.15	4.4	ug/Kg	1	2/18/2017 04:48 AM
1,1,1-Trichloroethane	ND	0.098	4.4	ug/Kg	1	2/18/2017 04:48 AM
1,1,2,2-Tetrachloroethane	ND	0.14	4.4	ug/Kg	1	2/18/2017 04:48 AM
1,1,2-Trichloroethane	ND	0.21	4.4	ug/Kg	1	2/18/2017 04:48 AM
1,1-Dichloroethane	ND	0.11	4.4	ug/Kg	1	2/18/2017 04:48 AM
1,1-Dichloroethene	ND	0.28	4.4	ug/Kg	1	2/18/2017 04:48 AM
1,1-Dichloropropene	ND	0.20	4.4	ug/Kg	1	2/18/2017 04:48 AM
1,2,3-Trichlorobenzene	ND	0.050	4.4	ug/Kg	1	2/18/2017 04:48 AM
1,2,3-Trichloropropane	ND	0.22	4.4	ug/Kg	1	2/18/2017 04:48 AM
1,2,4-Trichlorobenzene	ND	0.12	4.4	ug/Kg	1	2/18/2017 04:48 AM
1,2,4-Trimethylbenzene	ND	0.056	4.4	ug/Kg	1	2/18/2017 04:48 AM
1,2-Dibromo-3-chloropropane	ND	0.41	4.4	ug/Kg	1	2/18/2017 04:48 AM
1,2-Dibromoethane	ND	0.14	4.4	ug/Kg	1	2/18/2017 04:48 AM
1,2-Dichlorobenzene	ND	0.10	4.4	ug/Kg	1	2/18/2017 04:48 AM
1,2-Dichloroethane	ND	0.11	4.4	ug/Kg	1	2/18/2017 04:48 AM
1,2-Dichloropropane	ND	0.21	4.4	ug/Kg	1	2/18/2017 04:48 AM
1,3,5-Trimethylbenzene	ND	0.071	4.4	ug/Kg	1	2/18/2017 04:48 AM
1,3-Dichlorobenzene	ND	0.11	4.4	ug/Kg	1	2/18/2017 04:48 AM
1,3-Dichloropropane	ND	0.15	4.4	ug/Kg	1	2/18/2017 04:48 AM
1,4-Dichlorobenzene	ND	0.083	4.4	ug/Kg	1	2/18/2017 04:48 AM
2,2-Dichloropropane	ND	0.12	4.4	ug/Kg	1	2/18/2017 04:48 AM
2-Butanone	ND	1.5	44	ug/Kg	1	2/18/2017 04:48 AM
2-Chlorotoluene	ND	0.084	4.4	ug/Kg	1	2/18/2017 04:48 AM
2-Hexanone	ND	1.2	43	ug/Kg	1	2/21/2017 05:18 PM
4-Chlorotoluene	ND	0.16	4.4	ug/Kg	1	2/18/2017 04:48 AM
4-Isopropyltoluene	ND	0.087	4.4	ug/Kg	1	2/18/2017 04:48 AM
4-Methyl-2-pentanone	ND	0.53	44	ug/Kg	1	2/18/2017 04:48 AM
Acetone	ND	1.6	43	ug/Kg	1	2/21/2017 05:18 PM
Acrolein	ND	4.1	88	ug/Kg	1	2/18/2017 04:48 AM
Acrylonitrile	ND	1.4	44	ug/Kg	1	2/18/2017 04:48 AM
Benzene	0.67	0.099	4.4	J ug/Kg	1	2/18/2017 04:48 AM
Bromobenzene	ND	0.25	4.4	ug/Kg	1	2/18/2017 04:48 AM
Bromochloromethane	ND	0.48	4.4	ug/Kg	1	2/18/2017 04:48 AM
Bromodichloromethane	ND	0.14	4.4	ug/Kg	1	2/18/2017 04:48 AM
Bromoform	ND	0.37	4.4	ug/Kg	1	2/18/2017 04:48 AM
Bromomethane	ND	0.32	4.4	ug/Kg	1	2/18/2017 04:48 AM

Qualifiers: B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
Results are wet unless otherwise specified

E Value above quantitation range
J Analyte detected below quantitation limits
S Spike/Surrogate outside of limits due to matrix interference
DO Surrogate Diluted Out



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ANALYTICAL RESULTS

Print Date: 23-Feb-17

CLIENT: CH2MHill
Lab Order: N023124
Project: KMEP Norwalk
Lab ID: N023124-009

Client Sample ID: SVM-20-9.5
Collection Date: 2/15/2017 8:15:00 AM
Matrix: SOIL

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: NV00922-MS5_170217B	QC Batch: P17VS015	PrepDate	2/17/2017	Analyst: RB		
Carbon disulfide	ND	0.14	4.4	ug/Kg	1	2/18/2017 04:48 AM
Carbon tetrachloride	ND	0.15	4.4	ug/Kg	1	2/18/2017 04:48 AM
Chlorobenzene	ND	0.081	4.4	ug/Kg	1	2/18/2017 04:48 AM
Chloroethane	ND	0.44	4.4	ug/Kg	1	2/18/2017 04:48 AM
Chloroform	ND	0.13	4.4	ug/Kg	1	2/18/2017 04:48 AM
Chloromethane	ND	0.15	4.4	ug/Kg	1	2/18/2017 04:48 AM
cis-1,2-Dichloroethene	ND	0.21	4.4	ug/Kg	1	2/18/2017 04:48 AM
cis-1,3-Dichloropropene	ND	0.090	4.4	ug/Kg	1	2/18/2017 04:48 AM
Di-isopropyl ether	ND	0.088	4.4	ug/Kg	1	2/18/2017 04:48 AM
Dibromochloromethane	ND	0.41	4.4	ug/Kg	1	2/18/2017 04:48 AM
Dibromomethane	ND	0.20	4.4	ug/Kg	1	2/18/2017 04:48 AM
Dichlorodifluoromethane	ND	0.16	4.4	ug/Kg	1	2/18/2017 04:48 AM
Ethyl Tert-butyl ether	ND	0.13	4.4	ug/Kg	1	2/18/2017 04:48 AM
Ethylbenzene	ND	0.12	4.4	ug/Kg	1	2/18/2017 04:48 AM
Freon-113	ND	0.50	4.4	ug/Kg	1	2/18/2017 04:48 AM
Hexachlorobutadiene	ND	0.24	4.4	ug/Kg	1	2/18/2017 04:48 AM
Isopropylbenzene	ND	0.067	4.4	ug/Kg	1	2/18/2017 04:48 AM
m,p-Xylene	ND	0.12	4.4	ug/Kg	1	2/18/2017 04:48 AM
Methylene chloride	1.5	0.89	4.4	J ug/Kg	1	2/18/2017 04:48 AM
MTBE	ND	0.19	4.4	ug/Kg	1	2/18/2017 04:48 AM
n-Butylbenzene	ND	0.086	4.4	ug/Kg	1	2/18/2017 04:48 AM
n-Propylbenzene	ND	0.10	4.4	ug/Kg	1	2/18/2017 04:48 AM
Naphthalene	ND	0.094	4.4	ug/Kg	1	2/18/2017 04:48 AM
o-Xylene	ND	0.048	4.4	ug/Kg	1	2/18/2017 04:48 AM
sec-Butylbenzene	ND	0.081	4.4	ug/Kg	1	2/18/2017 04:48 AM
Styrene	ND	0.17	4.4	ug/Kg	1	2/18/2017 04:48 AM
Tert-amyl methyl ether	ND	0.15	4.4	ug/Kg	1	2/18/2017 04:48 AM
Tert-Butanol	ND	1.2	22	ug/Kg	1	2/18/2017 04:48 AM
tert-Butylbenzene	ND	0.11	4.4	ug/Kg	1	2/18/2017 04:48 AM
Tetrachloroethene	ND	0.25	4.4	ug/Kg	1	2/18/2017 04:48 AM
Toluene	0.68	0.087	4.4	J ug/Kg	1	2/18/2017 04:48 AM
trans-1,2-Dichloroethene	ND	0.19	4.4	ug/Kg	1	2/18/2017 04:48 AM
trans-1,3-Dichloropropene	ND	0.069	4.4	ug/Kg	1	2/18/2017 04:48 AM
Trichloroethene	ND	0.097	4.4	ug/Kg	1	2/18/2017 04:48 AM
Trichlorofluoromethane	ND	0.55	4.4	ug/Kg	1	2/18/2017 04:48 AM
Vinyl chloride	ND	0.19	4.4	ug/Kg	1	2/18/2017 04:48 AM

Qualifiers: B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
Results are wet unless otherwise specified

E Value above quantitation range
J Analyte detected below quantitation limits
S Spike/Surrogate outside of limits due to matrix interference
DO Surrogate Diluted Out



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ANALYTICAL RESULTS

Print Date: 23-Feb-17

CLIENT: CH2MHill
Lab Order: N023124
Project: KMEP Norwalk
Lab ID: N023124-009

Client Sample ID: SVM-20-9.5
Collection Date: 2/15/2017 8:15:00 AM
Matrix: SOIL

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: NV00922-MS5_170217B	QC Batch: P17VS015	PrepDate	2/17/2017	Analyst: RB
Xylenes, Total	ND 0.12	4.4	ug/Kg	1 2/18/2017 04:48 AM
Surr: 1,2-Dichloroethane-d4	124 0	52-149	%REC	1 2/21/2017 05:18 PM
Surr: 1,2-Dichloroethane-d4	121 0	52-149	%REC	1 2/18/2017 04:48 AM
Surr: 4-Bromofluorobenzene	98.9 0	65-135	%REC	1 2/18/2017 04:48 AM
Surr: 4-Bromofluorobenzene	99.6 0	65-135	%REC	1 2/21/2017 05:18 PM
Surr: Dibromofluoromethane	102 0	65-135	%REC	1 2/18/2017 04:48 AM
Surr: Dibromofluoromethane	108 0	65-135	%REC	1 2/21/2017 05:18 PM
Surr: Toluene-d8	102 0	75-125	%REC	1 2/18/2017 04:48 AM
Surr: Toluene-d8	104 0	75-125	%REC	1 2/21/2017 05:18 PM

DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID

EPA 3550B

EPA 8015B

RunID: NV00922-GC3_170221B	QC Batch: 61335	PrepDate	2/21/2017	Analyst: MDM
TPH-Diesel (C13-C22)	ND 2900	10000	ug/Kg	1 2/22/2017 07:50 PM
TPH-Oil (C23-C44)	13000 1800	10000	ug/Kg	1 2/22/2017 07:50 PM
Surr: Octacosane	87.4 0	25-162	%REC	1 2/22/2017 07:50 PM
Surr: p-Terphenyl	90.3 0	47-142	%REC	1 2/22/2017 07:50 PM

GASOLINE RANGE ORGANICS BY GC/FID

EPA 8015B(M)

RunID: NV00922-GC4_170220A	QC Batch: E17VS027	PrepDate	2/20/2017	Analyst: RB
GRO (C4 - C12)	0.091 0.042	0.96	J mg/Kg	1 2/20/2017 07:46 PM
Surr: Chlorobenzene - d5	121 0	46-154	%REC	1 2/20/2017 07:46 PM

Qualifiers: B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
Results are wet unless otherwise specified

E Value above quantitation range
J Analyte detected below quantitation limits
S Spike/Surrogate outside of limits due to matrix interference
DO Surrogate Diluted Out



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ANALYTICAL RESULTS

Print Date: 23-Feb-17

CLIENT: CH2MHill
Lab Order: N023124
Project: KMEP Norwalk
Lab ID: N023124-010

Client Sample ID: EB-1
Collection Date: 2/15/2017 9:05:00 AM
Matrix: WATER

Analyses Result MDL PQL Qual Units DF Date Analyzed

SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS-SIM

EPA 3510C

EPA 8270CSIM

RunID: NV00922-MS9_170216A	QC Batch: 61275	PrepDate	2/16/2017	Analyst: MDM
1-Methylnaphthalene	ND	0.018	0.20	ug/L 1 2/16/2017 05:35 PM
2-Methylnaphthalene	ND	0.022	0.20	ug/L 1 2/16/2017 05:35 PM
Acenaphthene	ND	0.018	0.20	ug/L 1 2/16/2017 05:35 PM
Acenaphthylene	ND	0.017	0.20	ug/L 1 2/16/2017 05:35 PM
Anthracene	ND	0.018	0.20	ug/L 1 2/16/2017 05:35 PM
Benzo(a)anthracene	ND	0.015	0.20	ug/L 1 2/16/2017 05:35 PM
Benzo(a)pyrene	ND	0.031	0.20	ug/L 1 2/16/2017 05:35 PM
Benzo(b)fluoranthene	ND	0.044	0.20	ug/L 1 2/16/2017 05:35 PM
Benzo(g,h,i)perylene	ND	0.015	0.20	ug/L 1 2/16/2017 05:35 PM
Benzo(k)fluoranthene	ND	0.015	0.20	ug/L 1 2/16/2017 05:35 PM
Chrysene	ND	0.027	0.20	ug/L 1 2/16/2017 05:35 PM
Dibenz(a,h)anthracene	ND	0.015	0.20	ug/L 1 2/16/2017 05:35 PM
Fluoranthene	ND	0.017	0.20	ug/L 1 2/16/2017 05:35 PM
Fluorene	ND	0.017	0.20	ug/L 1 2/16/2017 05:35 PM
Indeno(1,2,3-cd)pyrene	ND	0.017	0.20	ug/L 1 2/16/2017 05:35 PM
Naphthalene	ND	0.022	0.20	ug/L 1 2/16/2017 05:35 PM
Phenanthrene	0.020	0.018	0.20	J ug/L 1 2/16/2017 05:35 PM
Pyrene	ND	0.015	0.20	ug/L 1 2/16/2017 05:35 PM
Surr: 1,2-Dichlorobenzene-d4	53.0	0	27-100	%REC 1 2/16/2017 05:35 PM
Surr: 2-Fluorobiphenyl	51.0	0	34-135	%REC 1 2/16/2017 05:35 PM
Surr: 4-Terphenyl-d14	63.0	0	34-167	%REC 1 2/16/2017 05:35 PM
Surr: Nitrobenzene-d5	52.0	0	25-135	%REC 1 2/16/2017 05:35 PM

VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: NV00922-MS5_170217A	QC Batch: P17VW025	PrepDate	Analyst: RB
1,1,1,2-Tetrachloroethane	ND	0.089	1.0 ug/L 1 2/17/2017 06:25 PM
1,1,1-Trichloroethane	ND	0.15	1.0 ug/L 1 2/17/2017 06:25 PM
1,1,2,2-Tetrachloroethane	ND	0.14	1.0 ug/L 1 2/17/2017 06:25 PM
1,1,2-Trichloroethane	ND	0.15	1.0 ug/L 1 2/17/2017 06:25 PM
1,1-Dichloroethane	ND	0.13	0.50 ug/L 1 2/17/2017 06:25 PM
1,1-Dichloroethene	ND	0.15	1.0 ug/L 1 2/17/2017 06:25 PM
1,1-Dichloropropene	ND	0.12	1.0 ug/L 1 2/17/2017 06:25 PM
1,2,3-Trichlorobenzene	ND	0.16	1.0 ug/L 1 2/17/2017 06:25 PM
1,2,3-Trichloropropane	ND	0.097	1.0 ug/L 1 2/17/2017 06:25 PM
1,2,4-Trichlorobenzene	ND	0.13	1.0 ug/L 1 2/17/2017 06:25 PM

Qualifiers: B Analyte detected in the associated Method Blank E Value above quantitation range
H Holding times for preparation or analysis exceeded J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit S Spike/Surrogate outside of limits due to matrix interference
Results are wet unless otherwise specified DO Surrogate Diluted Out



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ANALYTICAL RESULTS

Print Date: 23-Feb-17

CLIENT: CH2MHill
Lab Order: N023124
Project: KMEP Norwalk
Lab ID: N023124-010

Client Sample ID: EB-1
Collection Date: 2/15/2017 9:05:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: NV00922-MS5_170217A	QC Batch: P17VW025				PrepDate	Analyst: RB	
1,2,4-Trimethylbenzene	ND	0.094	1.0		ug/L	1	2/17/2017 06:25 PM
1,2-Dibromo-3-chloropropane	ND	0.36	2.0		ug/L	1	2/17/2017 06:25 PM
1,2-Dibromoethane	ND	0.18	1.0		ug/L	1	2/17/2017 06:25 PM
1,2-Dichlorobenzene	ND	0.14	1.0		ug/L	1	2/17/2017 06:25 PM
1,2-Dichloroethane	ND	0.13	0.50		ug/L	1	2/17/2017 06:25 PM
1,2-Dichloropropane	ND	0.14	1.0		ug/L	1	2/17/2017 06:25 PM
1,3,5-Trimethylbenzene	ND	0.11	1.0		ug/L	1	2/17/2017 06:25 PM
1,3-Dichlorobenzene	ND	0.11	1.0		ug/L	1	2/17/2017 06:25 PM
1,3-Dichloropropane	ND	0.13	1.0		ug/L	1	2/17/2017 06:25 PM
1,4-Dichlorobenzene	ND	0.13	1.0		ug/L	1	2/17/2017 06:25 PM
2,2-Dichloropropane	ND	0.16	1.0		ug/L	1	2/17/2017 06:25 PM
2-Butanone	ND	1.9	10		ug/L	1	2/17/2017 06:25 PM
2-Chlorotoluene	ND	0.14	1.0		ug/L	1	2/17/2017 06:25 PM
2-Hexanone	ND	1.7	5.0		ug/L	1	2/17/2017 06:25 PM
4-Chlorotoluene	ND	0.14	1.0		ug/L	1	2/17/2017 06:25 PM
4-Isopropyltoluene	ND	0.13	1.0		ug/L	1	2/17/2017 06:25 PM
4-Methyl-2-pentanone	ND	1.4	10		ug/L	1	2/17/2017 06:25 PM
Acetone	ND	4.3	10		ug/L	1	2/17/2017 06:25 PM
Acrolein	ND	1.9	20		ug/L	1	2/17/2017 06:25 PM
Acrylonitrile	ND	2.5	20		ug/L	1	2/17/2017 06:25 PM
Benzene	ND	0.14	1.0		ug/L	1	2/17/2017 06:25 PM
Bromobenzene	ND	0.13	1.0		ug/L	1	2/17/2017 06:25 PM
Bromochloromethane	ND	0.15	1.0		ug/L	1	2/17/2017 06:25 PM
Bromodichloromethane	ND	0.10	1.0		ug/L	1	2/17/2017 06:25 PM
Bromoform	ND	0.34	1.0		ug/L	1	2/17/2017 06:25 PM
Bromomethane	ND	0.12	1.0		ug/L	1	2/17/2017 06:25 PM
Carbon disulfide	ND	0.14	1.0		ug/L	1	2/17/2017 06:25 PM
Carbon tetrachloride	ND	0.13	0.50		ug/L	1	2/17/2017 06:25 PM
Chlorobenzene	ND	0.13	1.0		ug/L	1	2/17/2017 06:25 PM
Chloroethane	ND	0.19	1.0		ug/L	1	2/17/2017 06:25 PM
Chloroform	ND	0.18	1.0		ug/L	1	2/17/2017 06:25 PM
Chloromethane	ND	0.22	1.0		ug/L	1	2/17/2017 06:25 PM
cis-1,2-Dichloroethene	ND	0.20	1.0		ug/L	1	2/17/2017 06:25 PM
cis-1,3-Dichloropropene	ND	0.14	1.0		ug/L	1	2/17/2017 06:25 PM
Di-isopropyl ether	ND	0.18	1.0		ug/L	1	2/17/2017 06:25 PM
Dibromochloromethane	ND	0.12	1.0		ug/L	1	2/17/2017 06:25 PM

Qualifiers: B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
Results are wet unless otherwise specified

E Value above quantitation range
J Analyte detected below quantitation limits
S Spike/Surrogate outside of limits due to matrix interference
DO Surrogate Diluted Out



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ANALYTICAL RESULTS

Print Date: 23-Feb-17

CLIENT: CH2MHill
Lab Order: N023124
Project: KMEP Norwalk
Lab ID: N023124-010

Client Sample ID: EB-1
Collection Date: 2/15/2017 9:05:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: NV00922-MS5_170217A	QC Batch: P17VW025	PrepDate	Analyst: RB			
Dibromomethane	ND	0.12	1.0	ug/L	1	2/17/2017 06:25 PM
Dichlorodifluoromethane	ND	0.17	1.0	ug/L	1	2/17/2017 06:25 PM
Ethyl tert-butyl ether	ND	0.15	1.0	ug/L	1	2/17/2017 06:25 PM
Ethylbenzene	ND	0.14	1.0	ug/L	1	2/17/2017 06:25 PM
Freon-113	ND	0.19	1.0	ug/L	1	2/17/2017 06:25 PM
Hexachlorobutadiene	ND	0.15	1.0	ug/L	1	2/17/2017 06:25 PM
Isopropylbenzene	ND	0.11	1.0	ug/L	1	2/17/2017 06:25 PM
m,p-Xylene	ND	0.23	1.0	ug/L	1	2/17/2017 06:25 PM
Methylene chloride	0.91	0.26	2.0	J ug/L	1	2/17/2017 06:25 PM
MTBE	ND	0.13	1.0	ug/L	1	2/17/2017 06:25 PM
n-Butylbenzene	ND	0.15	1.0	ug/L	1	2/17/2017 06:25 PM
n-Propylbenzene	ND	0.16	1.0	ug/L	1	2/17/2017 06:25 PM
Naphthalene	ND	0.094	1.0	ug/L	1	2/17/2017 06:25 PM
o-Xylene	ND	0.13	1.0	ug/L	1	2/17/2017 06:25 PM
sec-Butylbenzene	ND	0.12	1.0	ug/L	1	2/17/2017 06:25 PM
Styrene	ND	0.14	1.0	ug/L	1	2/17/2017 06:25 PM
Tert-amyl methyl ether	ND	0.12	1.0	ug/L	1	2/17/2017 06:25 PM
Tert-Butanol	ND	1.8	5.0	ug/L	1	2/17/2017 06:25 PM
tert-Butylbenzene	ND	0.11	1.0	ug/L	1	2/17/2017 06:25 PM
Tetrachloroethene	ND	0.13	1.0	ug/L	1	2/17/2017 06:25 PM
Toluene	0.22	0.14	2.0	J ug/L	1	2/17/2017 06:25 PM
trans-1,2-Dichloroethene	ND	0.20	1.0	ug/L	1	2/17/2017 06:25 PM
trans-1,3-Dichloropropene	ND	0.13	1.0	ug/L	1	2/17/2017 06:25 PM
Trichloroethene	ND	0.14	1.0	ug/L	1	2/17/2017 06:25 PM
Trichlorofluoromethane	ND	0.13	1.0	ug/L	1	2/17/2017 06:25 PM
Vinyl chloride	ND	0.15	0.50	ug/L	1	2/17/2017 06:25 PM
Xylenes, Total	ND	1.5	2.0	ug/L	1	2/17/2017 06:25 PM
Surr: 1,2-Dichloroethane-d4	91.4	0	72-119	%REC	1	2/17/2017 06:25 PM
Surr: 4-Bromofluorobenzene	97.8	0	76-119	%REC	1	2/17/2017 06:25 PM
Surr: Dibromofluoromethane	94.6	0	85-115	%REC	1	2/17/2017 06:25 PM
Surr: Toluene-d8	100	0	81-120	%REC	1	2/17/2017 06:25 PM

TPH EXTRACTABLE BY GC/FID

EPA 3510C

EPA 8015B

RunID: NV00922-GC3_170221A	QC Batch: 61334	PrepDate	2/21/2017	Analyst: MDM		
TPH-Diesel (C13-C22)	ND	15	25	ug/L	1	2/22/2017 11:42 AM

Qualifiers: B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
Results are wet unless otherwise specified

E Value above quantitation range
J Analyte detected below quantitation limits
S Spike/Surrogate outside of limits due to matrix interference
DO Surrogate Diluted Out



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ANALYTICAL RESULTS

Print Date: 23-Feb-17

CLIENT: CH2MHill
Lab Order: N023124
Project: KMEP Norwalk
Lab ID: N023124-010

Client Sample ID: EB-1
Collection Date: 2/15/2017 9:05:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TPH EXTRACTABLE BY GC/FID

EPA 3510C

EPA 8015B

RunID: NV00922-GC3_170221A	QC Batch: 61334			PrepDate	2/21/2017		Analyst: MDM
TPH-Oil (C23-C44)	22	14	25	J	ug/L	1	2/22/2017 11:42 AM
Surr: Octacosane	84.8	0	26-152		%REC	1	2/22/2017 11:42 AM
Surr: p-Terphenyl	88.0	0	57-132		%REC	1	2/22/2017 11:42 AM

GASOLINE RANGE ORGANICS BY GC/FID

EPA 8015B

RunID: NV00922-GC4_170219A	QC Batch: E17VW019			PrepDate			Analyst: RB
TPH-Gasoline (C4-C12)	30	16	50	J	ug/L	1	2/19/2017 07:07 PM
Surr: Chlorobenzene - d5	115	0	74-138		%REC	1	2/19/2017 07:07 PM

TOTAL TPH

EPA 8015B

RunID: NV00922-GC3_170221A	QC Batch: R113662			PrepDate			Analyst: MDM
Total TPH	52	16	100	J	ug/L	1	2/23/2017

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	S	Spike/Surrogate outside of limits due to matrix interference
		Results are wet unless otherwise specified	DO	Surrogate Diluted Out



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CLIENT: CH2MHill
Work Order: N023124
Project: KMEP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_S_DM_SFPP

Sample ID MB-61335	SampType: MBLK	TestCode: 8015_S_DM_	Units: ug/Kg	Prep Date: 2/21/2017	RunNo: 113695						
Client ID: PBS	Batch ID: 61335	TestNo: EPA 8015B EPA 3550B		Analysis Date: 2/22/2017	SeqNo: 2576657						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Diesel (C13-C22)	ND	10000									
TPH-Oil (C23-C44)	9049.000	10000									J
Surr: Octacosane	25328.667		26670		95.0	25	162				
Surr: p-Terphenyl	24674.667		26670		92.5	47	142				

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- Calculations are based on raw values



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CLIENT: CH2MHill
Work Order: N023124
Project: KMEP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_W_FP_SFPP

Sample ID MB-61334	SampType: MBLK	TestCode: 8015_W_FP_	Units: ug/L	Prep Date: 2/21/2017	RunNo: 113662						
Client ID: PBW	Batch ID: 61334	TestNo: EPA 8015B EPA 3510C		Analysis Date: 2/22/2017	SeqNo: 2576565						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Diesel (C13-C22)	ND	25									
TPH-Oil (C23-C44)	24.097	25									J
Surr: Octacosane	70.879		80.00		88.6	26	152				
Surr: p-Terphenyl	70.274		80.00		87.8	57	132				

Qualifiers:

- | | | |
|--|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | ND Not Detected at the Reporting Limit | R RPD outside accepted recovery limits |
| S Spike/Surrogate outside of limits due to matrix interference | DO Surrogate Diluted Out | Calculations are based on raw values |



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CLIENT: CH2MHill
Work Order: N023124
Project: KMEP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_W_SFPPTOT

Sample ID MB-R113662	SampType: MBLK	TestCode: 8015_W_SFP	Units: ug/L	Prep Date:	RunNo: 113662						
Client ID: PBW	Batch ID: R113662	TestNo: EPA 8015B		Analysis Date: 2/23/2017	SeqNo: 2577238						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total TPH	56.000	100									J

Qualifiers:

- | | | |
|--|--|--|
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| S Spike/Surrogate outside of limits due to matrix interference | DO Surrogate Diluted Out | Calculations are based on raw values |

CLIENT: CH2MHill
Work Order: N023124
Project: KMEP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015GAS_5035C4C12

Sample ID E170220LCS	SampType: LCS	TestCode: 8015GAS_50	Units: mg/Kg	Prep Date:	RunNo: 113641						
Client ID: LCSS	Batch ID: E17VS027	TestNo: EPA 8015B(M)		Analysis Date: 2/20/2017	SeqNo: 2573891						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

GRO (C4 - C12)	4.869	1.0	5.000	0	97.4	70	137				
Surr: Chlorobenzene - d5	104.901		100.0		105	46	154				

Sample ID E170220LCSD	SampType: LCSD	TestCode: 8015GAS_50	Units: mg/Kg	Prep Date:	RunNo: 113641						
Client ID: LCSS02	Batch ID: E17VS027	TestNo: EPA 8015B(M)		Analysis Date: 2/20/2017	SeqNo: 2573892						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

GRO (C4 - C12)	5.015	1.0	5.000	0	100	70	137	4.869	2.95	20	
Surr: Chlorobenzene - d5	106.239		100.0		106	46	154		0		

Sample ID E170220MB2	SampType: MBLK	TestCode: 8015GAS_50	Units: mg/Kg	Prep Date:	RunNo: 113641						
Client ID: PBS	Batch ID: E17VS027	TestNo: EPA 8015B(M)		Analysis Date: 2/20/2017	SeqNo: 2573894						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

GRO (C4 - C12)	0.101	1.0									J
Surr: Chlorobenzene - d5	110.225		100.0		110	46	154				

Sample ID N023125-047ADUP	SampType: DUP	TestCode: 8015GAS_50	Units: mg/Kg	Prep Date:	RunNo: 113641						
Client ID: ZZZZZZ	Batch ID: E17VS027	TestNo: EPA 8015B(M)		Analysis Date: 2/20/2017	SeqNo: 2573898						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

GRO (C4 - C12)	0.090	1.0						0.09900	0	20	J
Surr: Chlorobenzene - d5	115.206		100.0		115	46	154		0		

Sample ID N023125-048AMS	SampType: MS	TestCode: 8015GAS_50	Units: mg/Kg	Prep Date:	RunNo: 113641						
Client ID: ZZZZZZ	Batch ID: E17VS027	TestNo: EPA 8015B(M)		Analysis Date: 2/20/2017	SeqNo: 2573899						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

GRO (C4 - C12)	2.246	1.0	5.000	0.09600	43.0	46	155				S
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Qualifiers:

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|--|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | ND Not Detected at the Reporting Limit | R RPD outside accepted recovery limits |
| S Spike/Surrogate outside of limits due to matrix interference | DO Surrogate Diluted Out | Calculations are based on raw values |

CLIENT: CH2MHill
Work Order: N023124
Project: KMEP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015GAS_5035C4C12

Sample ID N023125-048AMS	SampType: MS	TestCode: 8015GAS_50	Units: mg/Kg	Prep Date:	RunNo: 113641						
Client ID: ZZZZZ	Batch ID: E17VS027	TestNo: EPA 8015B(M)	Analysis Date: 2/20/2017	SeqNo: 2573899							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Chlorobenzene - d5	104.919		100.0		105	46	154				

Sample ID N023125-048AMSD	SampType: MSD	TestCode: 8015GAS_50	Units: mg/Kg	Prep Date:	RunNo: 113641						
Client ID: ZZZZZ	Batch ID: E17VS027	TestNo: EPA 8015B(M)	Analysis Date: 2/20/2017	SeqNo: 2573900							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO (C4 - C12)	2.131	1.0	5.000	0.09600	40.7	46	155	2.246	5.25	20	S
Surr: Chlorobenzene - d5	93.632		100.0		93.6	46	154		0		

Qualifiers:

- | | | |
|--|--|--|
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CLIENT: CH2MHill
Work Order: N023124
Project: KMEP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015GAS_WSFPP

Sample ID E170219LCS	SampType: LCS	TestCode: 8015GAS_W	Units: ug/L	Prep Date:	RunNo: 113620						
Client ID: LCSW	Batch ID: E17VW019	TestNo: EPA 8015B		Analysis Date: 2/19/2017	SeqNo: 2573953						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Gasoline (C4-C12)	905.000	50	1000	0	90.5	67	136				
Surr: Chlorobenzene - d5	58326.000		50000		117	74	138				

Sample ID E170219MB2	SampType: MBLK	TestCode: 8015GAS_W	Units: ug/L	Prep Date:	RunNo: 113620						
Client ID: PBW	Batch ID: E17VW019	TestNo: EPA 8015B		Analysis Date: 2/19/2017	SeqNo: 2573955						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Gasoline (C4-C12)	32.000	50									J
Surr: Chlorobenzene - d5	63003.000		50000		126	74	138				

Sample ID N023124-010AMS	SampType: MS	TestCode: 8015GAS_W	Units: ug/L	Prep Date:	RunNo: 113620						
Client ID: ZZZZZ	Batch ID: E17VW019	TestNo: EPA 8015B		Analysis Date: 2/19/2017	SeqNo: 2573957						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Gasoline (C4-C12)	832.000	50	1000	30.00	80.2	67	136				
Surr: Chlorobenzene - d5	59040.000		50000		118	74	138				

Sample ID N023124-010AMSD	SampType: MSD	TestCode: 8015GAS_W	Units: ug/L	Prep Date:	RunNo: 113620						
Client ID: ZZZZZ	Batch ID: E17VW019	TestNo: EPA 8015B		Analysis Date: 2/19/2017	SeqNo: 2573958						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Gasoline (C4-C12)	899.000	50	1000	30.00	86.9	67	136	832.0	7.74	30	
Surr: Chlorobenzene - d5	57003.000		50000		114	74	138		0	0	

Qualifiers:

- | | | |
|--|--|--|
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CLIENT: CH2MHill
Work Order: N023124
Project: KMEP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_S_5035PGE

Sample ID	P170217LCS	SampType: LCS	TestCode: 8260_S_5035	Units: ug/Kg	Prep Date:	RunNo: 113598					
Client ID:	LCSS	Batch ID:	P17VS015	TestNo:	EPA 8260B	Analysis Date:	2/17/2017	SeqNo:	2570915		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	42.110	5.0	40.00	0	105	74	125				
1,1,1-Trichloroethane	36.810	5.0	40.00	0	92.0	68	130				
1,1,2,2-Tetrachloroethane	39.050	5.0	40.00	0	97.6	59	140				
1,1,2-Trichloroethane	38.080	5.0	40.00	0	95.2	62	127				
1,1-Dichloroethane	35.440	5.0	40.00	0	88.6	73	125				
1,1-Dichloroethene	35.140	5.0	40.00	0	87.9	65	136				
1,1-Dichloropropene	38.750	5.0	40.00	0	96.9	70	135				
1,2,3-Trichlorobenzene	36.620	5.0	40.00	0	91.6	62	133				
1,2,3-Trichloropropane	36.500	5.0	40.00	0	91.2	63	130				
1,2,4-Trichlorobenzene	35.010	5.0	40.00	0	87.5	65	131				
1,2,4-Trimethylbenzene	42.170	5.0	40.00	0	105	65	135				
1,2-Dibromo-3-chloropropane	43.500	5.0	40.00	0	109	49	135				
1,2-Dibromoethane	42.340	5.0	40.00	0	106	70	124				
1,2-Dichlorobenzene	41.130	5.0	40.00	0	103	74	120				
1,2-Dichloroethane	37.450	5.0	40.00	0	93.6	72	137				
1,2-Dichloropropane	37.730	5.0	40.00	0	94.3	71	120				
1,3,5-Trimethylbenzene	40.550	5.0	40.00	0	101	65	133				
1,3-Dichlorobenzene	40.080	5.0	40.00	0	100	72	124				
1,3-Dichloropropane	41.590	5.0	40.00	0	104	76	123				
1,4-Dichlorobenzene	39.520	5.0	40.00	0	98.8	72	125				
2,2-Dichloropropane	36.630	5.0	40.00	0	91.6	67	134				
2-Butanone	219.890	50	400.0	0	55.0	40	135				
2-Chlorotoluene	37.530	5.0	40.00	0	93.8	69	128				
2-Hexanone	261.850	50	400.0	0	65.5	70	130				S
4-Chlorotoluene	38.970	5.0	40.00	0	97.4	73	126				
4-Isopropyltoluene	42.930	5.0	40.00	0	107	70	130				
4-Methyl-2-pentanone	348.320	50	400.0	0	87.1	65	135				
Acetone	200.880	50	400.0	0	50.2	40	141				
Acrolein	381.390	100	400.0	0	95.3	65	135				
Acrylonitrile	380.640	50	400.0	0	95.2	65	135				

Qualifiers:

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CLIENT: CH2MHill
Work Order: N023124
Project: KMEP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_S_5035PGE

Sample ID	P170217LCS	SampType:	LCS	TestCode:	8260_S_5035	Units:	ug/Kg	Prep Date:	RunNo:			
Client ID:	LCSS	Batch ID:	P17VS015	TestNo:	EPA 8260B	Analysis Date:	2/17/2017	SeqNo:	2570915			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Benzene	38.170	5.0	40.00	0	95.4	73	126					
Bromobenzene	37.070	5.0	40.00	0	92.7	66	121					
Bromochloromethane	39.250	5.0	40.00	0	98.1	71	127					
Bromodichloromethane	40.710	5.0	40.00	0	102	72	128					
Bromoform	40.160	5.0	40.00	0	100	66	137					
Bromomethane	35.330	5.0	40.00	0	88.3	45	141					
Carbon disulfide	29.760	5.0	40.00	0	74.4	66	135					
Carbon tetrachloride	40.650	5.0	40.00	0	102	67	133					
Chlorobenzene	40.100	5.0	40.00	0	100	75	123					
Chloroethane	39.140	5.0	40.00	0	97.9	41	141					
Chloroform	36.880	5.0	40.00	0	92.2	72	124					
Chloromethane	31.480	5.0	40.00	0	78.7	51	129					
cis-1,2-Dichloroethene	37.440	5.0	40.00	0	93.6	67	125					
cis-1,3-Dichloropropene	41.140	5.0	40.00	0	103	72	126					
Di-isopropyl ether	33.210	5.0	40.00	0	83.0	70	130					
Dibromochloromethane	44.550	5.0	40.00	0	111	66	130					
Dibromomethane	38.820	5.0	40.00	0	97.0	73	128					
Dichlorodifluoromethane	40.220	5.0	40.00	0	101	34	136					
Ethyl Tert-butyl ether	33.650	5.0	40.00	0	84.1	70	130					
Ethylbenzene	38.710	5.0	40.00	0	96.8	74	127					
Freon-113	30.200	5.0	40.00	0	75.5	65	135					
Hexachlorobutadiene	41.650	5.0	40.00	0	104	53	142					
Isopropylbenzene	32.200	5.0	40.00	0	80.5	77	129					
m,p-Xylene	78.270	5.0	80.00	0	97.8	79	126					
Methylene chloride	36.970	5.0	40.00	0	92.4	63	137					
MTBE	34.390	5.0	40.00	0	86.0	50	135					
n-Butylbenzene	35.140	5.0	40.00	0	87.9	65	138					
n-Propylbenzene	39.960	5.0	40.00	0	99.9	63	135					
Naphthalene	41.810	5.0	40.00	0	105	51	135					
o-Xylene	40.910	5.0	40.00	0	102	77	125					

Qualifiers:

- | | | |
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Project: KMEP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_S_5035PGE

Sample ID	P170217LCS	SampType: LCS	TestCode: 8260_S_5035	Units: ug/Kg	Prep Date:	RunNo: 113598					
Client ID:	LCSS	Batch ID:	P17VS015	TestNo:	EPA 8260B	Analysis Date:	2/17/2017	SeqNo:	2570915		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
sec-Butylbenzene	41.670	5.0	40.00	0	104	63	132				
Styrene	40.660	5.0	40.00	0	102	74	128				
Tert-amyl methyl ether	36.230	5.0	40.00	0	90.6	70	130				
Tert-Butanol	189.000	25	200.0	0	94.5	70	130				
tert-Butylbenzene	40.850	5.0	40.00	0	102	65	132				
Tetrachloroethene	37.990	5.0	40.00	0	95.0	67	139				
Toluene	36.460	5.0	40.00	0	91.2	71	127				
trans-1,2-Dichloroethene	37.440	5.0	40.00	0	93.6	66	134				
trans-1,3-Dichloropropene	40.790	5.0	40.00	0	102	65	127				
Trichloroethene	40.620	5.0	40.00	0	102	77	124				
Trichlorofluoromethane	41.940	5.0	40.00	0	105	49	139				
Vinyl chloride	35.370	5.0	40.00	0	88.4	58	126				
Xylenes, Total	119.180	5.0	120.0	0	99.3	65	125				
Surr: 1,2-Dichloroethane-d4	48.190		50.00		96.4	52	149				
Surr: 4-Bromofluorobenzene	51.350		50.00		103	65	135				
Surr: Dibromofluoromethane	48.430		50.00		96.9	65	135				
Surr: Toluene-d8	50.640		50.00		101	75	125				

Sample ID	P170217LCSD	SampType: LCSD	TestCode: 8260_S_5035	Units: ug/Kg	Prep Date:	RunNo: 113598					
Client ID:	LCSS02	Batch ID:	P17VS015	TestNo:	EPA 8260B	Analysis Date:	2/17/2017	SeqNo:	2570916		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	43.660	5.0	40.00	0	109	74	125	42.11	3.61	30	
1,1,1-Trichloroethane	39.270	5.0	40.00	0	98.2	68	130	36.81	6.47	30	
1,1,2,2-Tetrachloroethane	39.730	5.0	40.00	0	99.3	59	140	39.05	1.73	30	
1,1,2-Trichloroethane	39.220	5.0	40.00	0	98.0	62	127	38.08	2.95	30	
1,1-Dichloroethane	36.100	5.0	40.00	0	90.3	73	125	35.44	1.85	30	
1,1-Dichloroethene	36.860	5.0	40.00	0	92.2	65	136	35.14	4.78	30	
1,1-Dichloropropene	40.540	5.0	40.00	0	101	70	135	38.75	4.52	30	
1,2,3-Trichlorobenzene	36.510	5.0	40.00	0	91.3	62	133	36.62	0.301	30	

Qualifiers:

- | | | |
|--|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
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CLIENT: CH2MHill
Work Order: N023124
Project: KMEP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_S_5035PGE

Sample ID	P170217LCSD	SampType: LCSD	TestCode: 8260_S_5035	Units: ug/Kg	Prep Date:	RunNo: 113598					
Client ID:	LCSS02	Batch ID:	P17VS015	TestNo:	EPA 8260B	Analysis Date:	2/17/2017	SeqNo:	2570916		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,3-Trichloropropane	36.240	5.0	40.00	0	90.6	63	130	36.50	0.715	30	
1,2,4-Trichlorobenzene	35.210	5.0	40.00	0	88.0	65	131	35.01	0.570	30	
1,2,4-Trimethylbenzene	42.890	5.0	40.00	0	107	65	135	42.17	1.69	30	
1,2-Dibromo-3-chloropropane	43.550	5.0	40.00	0	109	49	135	43.50	0.115	30	
1,2-Dibromoethane	42.800	5.0	40.00	0	107	70	124	42.34	1.08	30	
1,2-Dichlorobenzene	41.580	5.0	40.00	0	104	74	120	41.13	1.09	30	
1,2-Dichloroethane	38.530	5.0	40.00	0	96.3	72	137	37.45	2.84	30	
1,2-Dichloropropane	40.020	5.0	40.00	0	100	71	120	37.73	5.89	30	
1,3,5-Trimethylbenzene	41.210	5.0	40.00	0	103	65	133	40.55	1.61	30	
1,3-Dichlorobenzene	40.030	5.0	40.00	0	100	72	124	40.08	0.125	30	
1,3-Dichloropropane	42.800	5.0	40.00	0	107	76	123	41.59	2.87	30	
1,4-Dichlorobenzene	40.410	5.0	40.00	0	101	72	125	39.52	2.23	30	
2,2-Dichloropropane	37.870	5.0	40.00	0	94.7	67	134	36.63	3.33	30	
2-Butanone	195.910	50	400.0	0	49.0	40	135	219.9	11.5	30	
2-Chlorotoluene	38.030	5.0	40.00	0	95.1	69	128	37.53	1.32	30	
2-Hexanone	248.580	50	400.0	0	62.1	70	130	261.8	5.20	30	S
4-Chlorotoluene	38.910	5.0	40.00	0	97.3	73	126	38.97	0.154	30	
4-Isopropyltoluene	44.050	5.0	40.00	0	110	70	130	42.93	2.58	30	
4-Methyl-2-pentanone	355.150	50	400.0	0	88.8	65	135	348.3	1.94	30	
Acetone	148.190	50	400.0	0	37.0	40	141	200.9	30.2	30	SR
Acrolein	373.880	100	400.0	0	93.5	65	135	381.4	1.99	30	
Acrylonitrile	382.150	50	400.0	0	95.5	65	135	380.6	0.396	30	
Benzene	39.680	5.0	40.00	0	99.2	73	126	38.17	3.88	30	
Bromobenzene	38.200	5.0	40.00	0	95.5	66	121	37.07	3.00	30	
Bromochloromethane	39.630	5.0	40.00	0	99.1	71	127	39.25	0.963	30	
Bromodichloromethane	41.130	5.0	40.00	0	103	72	128	40.71	1.03	30	
Bromoform	41.260	5.0	40.00	0	103	66	137	40.16	2.70	30	
Bromomethane	35.530	5.0	40.00	0	88.8	45	141	35.33	0.564	30	
Carbon disulfide	31.360	5.0	40.00	0	78.4	66	135	29.76	5.24	30	
Carbon tetrachloride	43.980	5.0	40.00	0	110	67	133	40.65	7.87	30	

Qualifiers:

- B Analyte detected in the associated Method Blank
 - J Analyte detected below quantitation limits
 - S Spike/Surrogate outside of limits due to matrix interference
 - E Value above quantitation range
 - ND Not Detected at the Reporting Limit
 - DO Surrogate Diluted Out
 - H Holding times for preparation or analysis exceeded
 - R RPD outside accepted recovery limits
- Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N023124
Project: KMEP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_S_5035PGE

Sample ID	P170217LCSD	SampType:	LCSD	TestCode:	8260_S_5035	Units:	ug/Kg	Prep Date:	RunNo:			
Client ID:	LCSS02	Batch ID:	P17VS015	TestNo:	EPA 8260B	Analysis Date:	2/17/2017	SeqNo:	2570916			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Chlorobenzene	41.720	5.0	40.00	0	104	75	123	40.10	3.96	30		
Chloroethane	40.570	5.0	40.00	0	101	41	141	39.14	3.59	30		
Chloroform	38.110	5.0	40.00	0	95.3	72	124	36.88	3.28	30		
Chloromethane	32.840	5.0	40.00	0	82.1	51	129	31.48	4.23	30		
cis-1,2-Dichloroethene	38.480	5.0	40.00	0	96.2	67	125	37.44	2.74	30		
cis-1,3-Dichloropropene	41.900	5.0	40.00	0	105	72	126	41.14	1.83	30		
Di-isopropyl ether	33.650	5.0	40.00	0	84.1	70	130	33.21	1.32	30		
Dibromochloromethane	44.940	5.0	40.00	0	112	66	130	44.55	0.872	30		
Dibromomethane	38.890	5.0	40.00	0	97.2	73	128	38.82	0.180	30		
Dichlorodifluoromethane	33.350	5.0	40.00	0	83.4	34	136	40.22	18.7	30		
Ethyl Tert-butyl ether	34.970	5.0	40.00	0	87.4	70	130	33.65	3.85	30		
Ethylbenzene	40.830	5.0	40.00	0	102	74	127	38.71	5.33	30		
Freon-113	32.380	5.0	40.00	0	81.0	65	135	30.20	6.97	30		
Hexachlorobutadiene	43.200	5.0	40.00	0	108	53	142	41.65	3.65	30		
Isopropylbenzene	33.090	5.0	40.00	0	82.7	77	129	32.20	2.73	30		
m,p-Xylene	80.730	5.0	80.00	0	101	79	126	78.27	3.09	30		
Methylene chloride	37.610	5.0	40.00	0	94.0	63	137	36.97	1.72	30		
MTBE	35.770	5.0	40.00	0	89.4	50	135	34.39	3.93	30		
n-Butylbenzene	35.620	5.0	40.00	0	89.0	65	138	35.14	1.36	30		
n-Propylbenzene	40.890	5.0	40.00	0	102	63	135	39.96	2.30	30		
Naphthalene	41.580	5.0	40.00	0	104	51	135	41.81	0.552	30		
o-Xylene	42.050	5.0	40.00	0	105	77	125	40.91	2.75	30		
sec-Butylbenzene	42.650	5.0	40.00	0	107	63	132	41.67	2.32	30		
Styrene	42.000	5.0	40.00	0	105	74	128	40.66	3.24	30		
Tert-amyl methyl ether	36.690	5.0	40.00	0	91.7	70	130	36.23	1.26	30		
Tert-Butanol	174.730	25	200.0	0	87.4	70	130	189.0	7.85	30		
tert-Butylbenzene	41.450	5.0	40.00	0	104	65	132	40.85	1.46	30		
Tetrachloroethene	40.620	5.0	40.00	0	102	67	139	37.99	6.69	30		
Toluene	37.930	5.0	40.00	0	94.8	71	127	36.46	3.95	30		
trans-1,2-Dichloroethene	37.910	5.0	40.00	0	94.8	66	134	37.44	1.25	30		

Qualifiers:

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|--|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | ND Not Detected at the Reporting Limit | R RPD outside accepted recovery limits |
| S Spike/Surrogate outside of limits due to matrix interference | DO Surrogate Diluted Out | Calculations are based on raw values |



CALIFORNIA | P: 562.219.7435 F: 562.219.7436
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703
 ELAP Cert 2921
 EPA ID CA01638

NEVADA | P: 702.307.2659 F: 702.307.2697
 3151 W. Post Rd., Las Vegas, NV 89118
 ELAP Cert 2676 | NV Cert NVO0922
 ORELAP/NELAP Cert 4046

CLIENT: CH2MHill
Work Order: N023124
Project: KMEP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_S_5035PGE

Sample ID	P170217LCSD	SampType:	LCSD	TestCode:	8260_S_5035	Units:	ug/Kg	Prep Date:	RunNo: 113598			
Client ID:	LCSS02	Batch ID:	P17VS015	TestNo:	EPA 8260B			Analysis Date:	2/17/2017		SeqNo: 2570916	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
trans-1,3-Dichloropropene	41.660	5.0	40.00	0	104	65	127	40.79	2.11	30		
Trichloroethene	41.070	5.0	40.00	0	103	77	124	40.62	1.10	30		
Trichlorofluoromethane	44.120	5.0	40.00	0	110	49	139	41.94	5.07	30		
Vinyl chloride	36.070	5.0	40.00	0	90.2	58	126	35.37	1.96	30		
Xylenes, Total	122.780	5.0	120.0	0	102	65	125	119.2	2.98	30		
Surr: 1,2-Dichloroethane-d4	48.430		50.00		96.9	52	149		0			
Surr: 4-Bromofluorobenzene	52.640		50.00		105	65	135		0			
Surr: Dibromofluoromethane	49.340		50.00		98.7	65	135		0			
Surr: Toluene-d8	52.000		50.00		104	75	125		0			

Sample ID	P170217MB3	SampType:	MBLK	TestCode:	8260_S_5035	Units:	ug/Kg	Prep Date:	RunNo: 113598			
Client ID:	PBS	Batch ID:	P17VS015	TestNo:	EPA 8260B			Analysis Date:	2/17/2017		SeqNo: 2570919	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
1,1,1,2-Tetrachloroethane	ND	5.0										
1,1,1-Trichloroethane	ND	5.0										
1,1,2,2-Tetrachloroethane	ND	5.0										
1,1,2-Trichloroethane	ND	5.0										
1,1-Dichloroethane	ND	5.0										
1,1-Dichloroethene	ND	5.0										
1,1-Dichloropropene	ND	5.0										
1,2,3-Trichlorobenzene	ND	5.0										
1,2,3-Trichloropropane	ND	5.0										
1,2,4-Trichlorobenzene	ND	5.0										
1,2,4-Trimethylbenzene	ND	5.0										
1,2-Dibromo-3-chloropropane	ND	5.0										
1,2-Dibromoethane	ND	5.0										
1,2-Dichlorobenzene	ND	5.0										
1,2-Dichloroethane	ND	5.0										
1,2-Dichloropropane	ND	5.0										

Qualifiers:

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| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | ND Not Detected at the Reporting Limit | R RPD outside accepted recovery limits |
| S Spike/Surrogate outside of limits due to matrix interference | DO Surrogate Diluted Out | Calculations are based on raw values |

CLIENT: CH2MHill
Work Order: N023124
Project: KMEP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_S_5035PGE

Sample ID P170217MB3	SampType: MBLK	TestCode: 8260_S_5035	Units: ug/Kg	Prep Date:	RunNo: 113598						
Client ID: PBS	Batch ID: P17VS015	TestNo: EPA 8260B	Analysis Date: 2/17/2017	SeqNo: 2570919							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,3,5-Trimethylbenzene	ND	5.0									
1,3-Dichlorobenzene	ND	5.0									
1,3-Dichloropropane	ND	5.0									
1,4-Dichlorobenzene	ND	5.0									
2,2-Dichloropropane	ND	5.0									
2-Butanone	ND	50									
2-Chlorotoluene	ND	5.0									
2-Hexanone	ND	50									
4-Chlorotoluene	ND	5.0									
4-Isopropyltoluene	ND	5.0									
4-Methyl-2-pentanone	ND	50									
Acetone	ND	50									
Acrolein	ND	100									
Acrylonitrile	ND	50									
Benzene	ND	5.0									
Bromobenzene	ND	5.0									
Bromochloromethane	ND	5.0									
Bromodichloromethane	ND	5.0									
Bromoform	ND	5.0									
Bromomethane	ND	5.0									
Carbon disulfide	ND	5.0									
Carbon tetrachloride	ND	5.0									
Chlorobenzene	ND	5.0									
Chloroethane	ND	5.0									
Chloroform	ND	5.0									
Chloromethane	ND	5.0									
cis-1,2-Dichloroethene	ND	5.0									
cis-1,3-Dichloropropene	ND	5.0									
Di-isopropyl ether	ND	5.0									
Dibromochloromethane	ND	5.0									

Qualifiers:

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| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | ND Not Detected at the Reporting Limit | R RPD outside accepted recovery limits |
| S Spike/Surrogate outside of limits due to matrix interference | DO Surrogate Diluted Out | Calculations are based on raw values |

CLIENT: CH2MHill
Work Order: N023124
Project: KMEP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_S_5035PGE

Sample ID	SampType	TestCode	Units	Prep Date	RunNo						
P170217MB3	MBLK	8260_S_5035	ug/Kg		113598						
Client ID: PBS	Batch ID: P17VS015	TestNo: EPA 8260B		Analysis Date: 2/17/2017	SeqNo: 2570919						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dibromomethane	ND	5.0									
Dichlorodifluoromethane	ND	5.0									
Ethyl Tert-butyl ether	ND	5.0									
Ethylbenzene	ND	5.0									
Freon-113	ND	5.0									
Hexachlorobutadiene	ND	5.0									
Isopropylbenzene	ND	5.0									
m,p-Xylene	ND	5.0									
Methylene chloride	2.050	5.0									J
MTBE	ND	5.0									
n-Butylbenzene	ND	5.0									
n-Propylbenzene	ND	5.0									
Naphthalene	ND	5.0									
o-Xylene	ND	5.0									
sec-Butylbenzene	ND	5.0									
Styrene	ND	5.0									
Tert-amyl methyl ether	ND	5.0									
Tert-Butanol	ND	25									
tert-Butylbenzene	ND	5.0									
Tetrachloroethene	ND	5.0									
Toluene	ND	5.0									
trans-1,2-Dichloroethene	ND	5.0									
trans-1,3-Dichloropropene	ND	5.0									
Trichloroethene	ND	5.0									
Trichlorofluoromethane	ND	5.0									
Vinyl chloride	ND	5.0									
Xylenes, Total	ND	5.0									
Surr: 1,2-Dichloroethane-d4	49.470		50.00		98.9	52	149				
Surr: 4-Bromofluorobenzene	50.790		50.00		102	65	135				
Surr: Dibromofluoromethane	49.140		50.00		98.3	65	135				

Qualifiers:

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| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | ND Not Detected at the Reporting Limit | R RPD outside accepted recovery limits |
| S Spike/Surrogate outside of limits due to matrix interference | DO Surrogate Diluted Out | Calculations are based on raw values |

CLIENT: CH2MHill
Work Order: N023124
Project: KMEP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_S_5035PGE

Sample ID P170217MB3	SampType: MBLK	TestCode: 8260_S_5035	Units: ug/Kg	Prep Date:	RunNo: 113598						
Client ID: PBS	Batch ID: P17VS015	TestNo: EPA 8260B		Analysis Date: 2/17/2017	SeqNo: 2570919						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Toluene-d8	51.410		50.00		103	75	125				

Sample ID N023121-001AMS	SampType: MS	TestCode: 8260_S_5035	Units: ug/Kg	Prep Date:	RunNo: 113598						
Client ID: ZZZZZ	Batch ID: P17VS015	TestNo: EPA 8260B		Analysis Date: 2/18/2017	SeqNo: 2570937						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	1760.000	250	2000	0	88.0	74	125				
1,1,1-Trichloroethane	1528.000	250	2000	0	76.4	68	130				
1,1,2,2-Tetrachloroethane	1989.500	250	2000	0	99.5	59	140				
1,1,2-Trichloroethane	1947.500	250	2000	0	97.4	62	127				
1,1-Dichloroethane	1523.500	250	2000	0	76.2	73	125				
1,1-Dichloroethene	1405.500	250	2000	0	70.3	65	136				
1,1-Dichloropropene	1619.500	250	2000	0	81.0	70	135				
1,2,3-Trichlorobenzene	1860.500	250	2000	0	93.0	62	133				
1,2,3-Trichloropropane	1821.500	250	2000	0	91.1	63	130				
1,2,4-Trichlorobenzene	1766.500	250	2000	0	88.3	65	131				
1,2,4-Trimethylbenzene	1734.500	250	2000	0	86.7	65	135				
1,2-Dibromo-3-chloropropane	2397.500	250	2000	0	120	49	135				
1,2-Dibromoethane	2077.500	250	2000	0	104	70	124				
1,2-Dichlorobenzene	1765.000	250	2000	0	88.3	74	120				
1,2-Dichloroethane	1827.500	250	2000	0	91.4	72	137				
1,2-Dichloropropane	1691.500	250	2000	0	84.6	71	120				
1,3,5-Trimethylbenzene	1586.000	250	2000	0	79.3	65	133				
1,3-Dichlorobenzene	1640.500	250	2000	0	82.0	72	124				
1,3-Dichloropropane	2022.500	250	2000	0	101	76	123				
1,4-Dichlorobenzene	1667.500	250	2000	0	83.4	72	125				
2,2-Dichloropropane	1416.000	250	2000	0	70.8	67	134				
2-Butanone	8697.500	2500	20000	0	43.5	40	135				
2-Chlorotoluene	1527.500	250	2000	0	76.4	69	128				
2-Hexanone	14065.000	2500	20000	0	70.3	70	130				

Qualifiers:

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| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | ND Not Detected at the Reporting Limit | R RPD outside accepted recovery limits |
| S Spike/Surrogate outside of limits due to matrix interference | DO Surrogate Diluted Out | Calculations are based on raw values |

CLIENT: CH2MHill
Work Order: N023124
Project: KMEP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_S_5035PGE

Sample ID	SampType: MS	TestCode: 8260_S_5035	Units: ug/Kg	Prep Date:	RunNo: 113598						
Client ID: ZZZZZZ	Batch ID: P17VS015	TestNo: EPA 8260B		Analysis Date: 2/18/2017	SeqNo: 2570937						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4-Chlorotoluene	1565.500	250	2000	0	78.3	73	126				
4-Isopropyltoluene	2883.500	250	2000	0	144	70	130				S
4-Methyl-2-pentanone	19313.000	2500	20000	0	96.6	65	135				
Acetone	5507.500	2500	20000	0	27.5	40	141				S
Acrolein	18248.000	5000	20000	0	91.2	65	135				
Acrylonitrile	17008.000	2500	20000	0	85.0	65	135				
Benzene	1642.000	250	2000	0	82.1	73	126				
Bromobenzene	1558.000	250	2000	0	77.9	66	121				
Bromochloromethane	1758.000	250	2000	0	87.9	71	127				
Bromodichloromethane	1731.500	250	2000	0	86.6	72	128				
Bromoform	1934.000	250	2000	0	96.7	66	137				
Bromomethane	1298.500	250	2000	0	64.9	45	141				
Carbon disulfide	1123.000	250	2000	0	56.2	66	135				S
Carbon tetrachloride	1611.000	250	2000	0	80.6	67	133				
Chlorobenzene	1708.500	250	2000	0	85.4	75	123				
Chloroethane	830.500	250	2000	0	41.5	41	141				
Chloroform	1616.000	250	2000	0	80.8	72	124				
Chloromethane	1420.000	250	2000	0	71.0	51	129				
cis-1,2-Dichloroethene	1641.500	250	2000	0	82.1	67	125				
cis-1,3-Dichloropropene	1685.000	250	2000	0	84.3	72	126				
Di-isopropyl ether	1501.500	250	2000	0	75.1	70	130				
Dibromochloromethane	1991.000	250	2000	0	99.6	66	130				
Dibromomethane	1869.500	250	2000	0	93.5	73	128				
Dichlorodifluoromethane	1036.000	250	2000	0	51.8	34	136				
Ethyl Tert-butyl ether	1623.500	250	2000	0	81.2	70	130				
Ethylbenzene	1638.500	250	2000	0	81.9	74	127				
Freon-113	1104.500	250	2000	0	55.2	65	135				S
Hexachlorobutadiene	1846.500	250	2000	0	92.3	53	142				
Isopropylbenzene	1254.500	250	2000	0	62.7	77	129				S
m,p-Xylene	3425.000	250	4000	0	85.6	79	126				

Qualifiers:

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|--|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | ND Not Detected at the Reporting Limit | R RPD outside accepted recovery limits |
| S Spike/Surrogate outside of limits due to matrix interference | DO Surrogate Diluted Out | Calculations are based on raw values |

CLIENT: CH2MHill
Work Order: N023124
Project: KMEP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_S_5035PGE

Sample ID	N023121-001AMS	SampType: MS	TestCode: 8260_S_5035	Units: ug/Kg	Prep Date:	RunNo: 113598					
Client ID:	ZZZZZZ	Batch ID: P17VS015	TestNo: EPA 8260B		Analysis Date: 2/18/2017	SeqNo: 2570937					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methylene chloride	1655.000	250	2000	0	82.8	63	137				
MTBE	1692.500	250	2000	0	84.6	50	135				
n-Butylbenzene	1666.000	250	2000	0	83.3	65	138				
n-Propylbenzene	1566.000	250	2000	0	78.3	63	135				
Naphthalene	2243.000	250	2000	0	112	51	135				
o-Xylene	1783.500	250	2000	0	89.2	77	125				
sec-Butylbenzene	1897.000	250	2000	0	94.8	63	132				
Styrene	1713.000	250	2000	0	85.6	74	128				
Tert-amyl methyl ether	1682.500	250	2000	0	84.1	70	130				
Tert-Butanol	8105.500	1200	10000	0	81.1	70	130				
tert-Butylbenzene	1557.000	250	2000	0	77.8	65	132				
Tetrachloroethene	1511.500	250	2000	0	75.6	67	139				
Toluene	1529.000	250	2000	0	76.5	71	127				
trans-1,2-Dichloroethene	1511.000	250	2000	0	75.6	66	134				
trans-1,3-Dichloropropene	1736.000	250	2000	0	86.8	65	127				
Trichloroethene	1589.000	250	2000	0	79.4	77	124				
Trichlorofluoromethane	834.500	250	2000	0	41.7	49	139				S
Vinyl chloride	1145.500	250	2000	0	57.3	58	126				S
Xylenes, Total	5208.500	250	6000	0	86.8	65	125				
Surr: 1,2-Dichloroethane-d4	2525.500		2500		101	52	149				
Surr: 4-Bromofluorobenzene	2571.000		2500		103	65	135				
Surr: Dibromofluoromethane	2432.500		2500		97.3	65	135				
Surr: Toluene-d8	2538.000		2500		102	75	125				

Sample ID	N023121-001AMS	SampType: MSD	TestCode: 8260_S_5035	Units: ug/Kg	Prep Date:	RunNo: 113598					
Client ID:	ZZZZZZ	Batch ID: P17VS015	TestNo: EPA 8260B		Analysis Date: 2/18/2017	SeqNo: 2570938					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	1878.500	250	2000	0	93.9	74	125	1760	6.51	30	
1,1,1-Trichloroethane	1542.000	250	2000	0	77.1	68	130	1528	0.912	30	

Qualifiers:

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| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | ND Not Detected at the Reporting Limit | R RPD outside accepted recovery limits |
| S Spike/Surrogate outside of limits due to matrix interference | DO Surrogate Diluted Out | Calculations are based on raw values |

CLIENT: CH2MHill
Work Order: N023124
Project: KMEP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_S_5035PGE

Sample ID	N023121-001AMSD	SampType: MSD	TestCode: 8260_S_5035	Units: ug/Kg	Prep Date:	RunNo: 113598					
Client ID:	ZZZZZZ	Batch ID: P17VS015	TestNo: EPA 8260B		Analysis Date: 2/18/2017	SeqNo: 2570938					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,2,2-Tetrachloroethane	2082.500	250	2000	0	104	59	140	1990	4.57	30	
1,1,2-Trichloroethane	1866.500	250	2000	0	93.3	62	127	1948	4.25	30	
1,1-Dichloroethane	1582.000	250	2000	0	79.1	73	125	1524	3.77	30	
1,1-Dichloroethene	1402.500	250	2000	0	70.1	65	136	1406	0.214	30	
1,1-Dichloropropene	1625.500	250	2000	0	81.3	70	135	1620	0.370	30	
1,2,3-Trichlorobenzene	2007.000	250	2000	0	100	62	133	1860	7.58	30	
1,2,3-Trichloropropane	1913.000	250	2000	0	95.6	63	130	1822	4.90	30	
1,2,4-Trichlorobenzene	1978.500	250	2000	0	98.9	65	131	1766	11.3	30	
1,2,4-Trimethylbenzene	1872.500	250	2000	0	93.6	65	135	1734	7.65	30	
1,2-Dibromo-3-chloropropane	2460.500	250	2000	0	123	49	135	2398	2.59	30	
1,2-Dibromoethane	2148.000	250	2000	0	107	70	124	2078	3.34	30	
1,2-Dichlorobenzene	1900.000	250	2000	0	95.0	74	120	1765	7.37	30	
1,2-Dichloroethane	1867.500	250	2000	0	93.4	72	137	1828	2.17	30	
1,2-Dichloropropane	1793.000	250	2000	0	89.7	71	120	1692	5.83	30	
1,3,5-Trimethylbenzene	1704.000	250	2000	0	85.2	65	133	1586	7.17	30	
1,3-Dichlorobenzene	1739.500	250	2000	0	87.0	72	124	1640	5.86	30	
1,3-Dichloropropane	2159.500	250	2000	0	108	76	123	2023	6.55	30	
1,4-Dichlorobenzene	1818.000	250	2000	0	90.9	72	125	1668	8.64	30	
2,2-Dichloropropane	1427.000	250	2000	0	71.4	67	134	1416	0.774	30	
2-Butanone	8920.000	2500	20000	0	44.6	40	135	8698	2.53	30	
2-Chlorotoluene	1605.000	250	2000	0	80.2	69	128	1528	4.95	30	
2-Hexanone	14155.500	2500	20000	0	70.8	70	130	14060	0.641	30	
4-Chlorotoluene	1639.500	250	2000	0	82.0	73	126	1566	4.62	30	
4-Isopropyltoluene	2948.500	250	2000	0	147	70	130	2884	2.23	30	S
4-Methyl-2-pentanone	19567.000	2500	20000	0	97.8	65	135	19310	1.31	30	
Acetone	6407.500	2500	20000	0	32.0	40	141	5508	15.1	30	S
Acrolein	18805.500	5000	20000	0	94.0	65	135	18250	3.01	30	
Acrylonitrile	19040.000	2500	20000	0	95.2	65	135	17010	11.3	30	
Benzene	1676.000	250	2000	0	83.8	73	126	1642	2.05	30	
Bromobenzene	1641.500	250	2000	0	82.1	66	121	1558	5.22	30	

Qualifiers:

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| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | ND Not Detected at the Reporting Limit | R RPD outside accepted recovery limits |
| S Spike/Surrogate outside of limits due to matrix interference | DO Surrogate Diluted Out | Calculations are based on raw values |

CLIENT: CH2MHill
Work Order: N023124
Project: KMEP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_S_5035PGE

Sample ID	N023121-001AMSD	SampType: MSD	TestCode: 8260_S_5035	Units: ug/Kg	Prep Date:	RunNo: 113598					
Client ID:	ZZZZZZ	Batch ID:	P17VS015	TestNo:	EPA 8260B	Analysis Date:	2/18/2017	SeqNo:	2570938		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromochloromethane	1840.500	250	2000	0	92.0	71	127	1758	4.59	30	
Bromodichloromethane	1812.000	250	2000	0	90.6	72	128	1732	4.54	30	
Bromoform	2019.000	250	2000	0	101	66	137	1934	4.30	30	
Bromomethane	1304.500	250	2000	0	65.2	45	141	1298	0.461	30	
Carbon disulfide	1116.500	250	2000	0	55.8	66	135	1123	0.580	30	S
Carbon tetrachloride	1666.000	250	2000	0	83.3	67	133	1611	3.36	30	
Chlorobenzene	1794.000	250	2000	0	89.7	75	123	1708	4.88	30	
Chloroethane	856.500	250	2000	0	42.8	41	141	830.5	3.08	30	
Chloroform	1650.000	250	2000	0	82.5	72	124	1616	2.08	30	
Chloromethane	1483.500	250	2000	0	74.2	51	129	1420	4.37	30	
cis-1,2-Dichloroethene	1663.000	250	2000	0	83.2	67	125	1642	1.30	30	
cis-1,3-Dichloropropene	1799.000	250	2000	0	90.0	72	126	1685	6.54	30	
Di-isopropyl ether	1560.500	250	2000	0	78.0	70	130	1502	3.85	30	
Dibromochloromethane	2093.000	250	2000	0	105	66	130	1991	5.00	30	
Dibromomethane	1915.000	250	2000	0	95.8	73	128	1870	2.40	30	
Dichlorodifluoromethane	1000.500	250	2000	0	50.0	34	136	1036	3.49	30	
Ethyl Tert-butyl ether	1671.000	250	2000	0	83.6	70	130	1624	2.88	30	
Ethylbenzene	1735.000	250	2000	0	86.8	74	127	1639	5.72	30	
Freon-113	1087.500	250	2000	0	54.4	65	135	1104	1.55	30	S
Hexachlorobutadiene	1877.000	250	2000	0	93.8	53	142	1846	1.64	30	
Isopropylbenzene	1340.500	250	2000	0	67.0	77	129	1254	6.63	30	S
m,p-Xylene	3657.000	250	4000	0	91.4	79	126	3425	6.55	30	
Methylene chloride	1710.500	250	2000	0	85.5	63	137	1655	3.30	30	
MTBE	1723.000	250	2000	0	86.2	50	135	1692	1.79	30	
n-Butylbenzene	1847.000	250	2000	0	92.4	65	138	1666	10.3	30	
n-Propylbenzene	1667.500	250	2000	0	83.4	63	135	1566	6.28	30	
Naphthalene	2430.000	250	2000	0	122	51	135	2243	8.00	30	
o-Xylene	1883.000	250	2000	0	94.2	77	125	1784	5.43	30	
sec-Butylbenzene	2019.000	250	2000	0	101	63	132	1897	6.23	30	
Styrene	1829.000	250	2000	0	91.4	74	128	1713	6.55	30	

Qualifiers:

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| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | ND Not Detected at the Reporting Limit | R RPD outside accepted recovery limits |
| S Spike/Surrogate outside of limits due to matrix interference | DO Surrogate Diluted Out | Calculations are based on raw values |

CLIENT: CH2MHill
Work Order: N023124
Project: KMEP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_S_5035PGE

Sample ID	N023121-001AMSD	SampType: MSD	TestCode: 8260_S_5035	Units: ug/Kg	Prep Date:	RunNo: 113598					
Client ID:	ZZZZZZ	Batch ID:	P17VS015	TestNo:	EPA 8260B	Analysis Date:	2/18/2017	SeqNo:	2570938		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Tert-amyl methyl ether	1774.500	250	2000	0	88.7	70	130	1682	5.32	30	
Tert-Butanol	9723.000	1200	10000	0	97.2	70	130	8106	18.1	30	
tert-Butylbenzene	1662.500	250	2000	0	83.1	65	132	1557	6.55	30	
Tetrachloroethene	1604.500	250	2000	0	80.2	67	139	1512	5.97	30	
Toluene	1581.000	250	2000	0	79.0	71	127	1529	3.34	30	
trans-1,2-Dichloroethene	1583.500	250	2000	0	79.2	66	134	1511	4.69	30	
trans-1,3-Dichloropropene	1793.000	250	2000	0	89.7	65	127	1736	3.23	30	
Trichloroethene	1672.500	250	2000	0	83.6	77	124	1589	5.12	30	
Trichlorofluoromethane	954.000	250	2000	0	47.7	49	139	834.5	13.4	30	S
Vinyl chloride	1111.500	250	2000	0	55.6	58	126	1146	3.01	30	S
Xylenes, Total	5540.000	250	6000	0	92.3	65	125	5208	6.17	30	
Surr: 1,2-Dichloroethane-d4	2389.500		2500		95.6	52	149		0		
Surr: 4-Bromofluorobenzene	2520.500		2500		101	65	135		0		
Surr: Dibromofluoromethane	2328.000		2500		93.1	65	135		0		
Surr: Toluene-d8	2474.000		2500		99.0	75	125		0		

Qualifiers:

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| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | ND Not Detected at the Reporting Limit | R RPD outside accepted recovery limits |
| S Spike/Surrogate outside of limits due to matrix interference | DO Surrogate Diluted Out | Calculations are based on raw values |

CLIENT: CH2MHill
Work Order: N023124
Project: KMPE Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_S_5035PGE

Sample ID	SampType	TestCode	Units	Prep Date	RunNo						
P170221LCS	LCS	8260_S_5035	ug/Kg		113673						
Client ID: LCSS	Batch ID: P17VS016	TestNo: EPA 8260B		Analysis Date: 2/21/2017	SeqNo: 2575570						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2-Hexanone	321.250	50	400.0	0	80.3	70	130				
Acetone	313.120	50	400.0	0	78.3	40	141				
Surr: 1,2-Dichloroethane-d4	50.420		50.00		101	52	149				
Surr: 4-Bromofluorobenzene	49.700		50.00		99.4	65	135				
Surr: Dibromofluoromethane	48.980		50.00		98.0	65	135				
Surr: Toluene-d8	50.730		50.00		101	75	125				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo						
P170221MB3	MBLK	8260_S_5035	ug/Kg		113673						
Client ID: PBS	Batch ID: P17VS016	TestNo: EPA 8260B		Analysis Date: 2/21/2017	SeqNo: 2575573						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2-Hexanone	ND	50									
Acetone	ND	50									
Surr: 1,2-Dichloroethane-d4	50.510		50.00		101	52	149				
Surr: 4-Bromofluorobenzene	46.000		50.00		92.0	65	135				
Surr: Dibromofluoromethane	49.120		50.00		98.2	65	135				
Surr: Toluene-d8	51.010		50.00		102	75	125				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo						
N023129-001AMS	MS	8260_S_5035	ug/Kg		113673						
Client ID: ZZZZZ	Batch ID: P17VS016	TestNo: EPA 8260B		Analysis Date: 2/21/2017	SeqNo: 2575590						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2-Hexanone	486.900	50	400.0	0	122	70	130				
Acetone	534.120	50	400.0	0	134	40	141				
Surr: 1,2-Dichloroethane-d4	59.290		50.00		119	52	149				
Surr: 4-Bromofluorobenzene	52.350		50.00		105	65	135				
Surr: Dibromofluoromethane	48.840		50.00		97.7	65	135				
Surr: Toluene-d8	50.690		50.00		101	75	125				

Qualifiers:

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| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | ND Not Detected at the Reporting Limit | R RPD outside accepted recovery limits |
| S Spike/Surrogate outside of limits due to matrix interference | DO Surrogate Diluted Out | Calculations are based on raw values |

CLIENT: CH2MHill
Work Order: N023124
Project: KMEP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_S_5035PGE

Sample ID N023129-001AMSD	SampType: MSD	TestCode: 8260_S_5035	Units: ug/Kg	Prep Date:	RunNo: 113673						
Client ID: ZZZZZZ	Batch ID: P17VS016	TestNo: EPA 8260B	Analysis Date: 2/21/2017	SeqNo: 2575591							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2-Hexanone	461.510	50	400.0	0	115	70	130	486.9	5.35	30	
Acetone	559.820	50	400.0	0	140	40	141	534.1	4.70	30	
Surr: 1,2-Dichloroethane-d4	60.180		50.00		120	52	149		0		
Surr: 4-Bromofluorobenzene	50.840		50.00		102	65	135		0		
Surr: Dibromofluoromethane	49.720		50.00		99.4	65	135		0		
Surr: Toluene-d8	50.960		50.00		102	75	125		0		

Qualifiers:

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| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | ND Not Detected at the Reporting Limit | R RPD outside accepted recovery limits |
| S Spike/Surrogate outside of limits due to matrix interference | DO Surrogate Diluted Out | Calculations are based on raw values |

CLIENT: CH2MHill
Work Order: N023124
Project: KMEP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID	P170217LCS	SampType: LCS	TestCode: 8260_WP_SF Units: ug/L			Prep Date:			RunNo: 113586		
Client ID:	LCSW	Batch ID:	P17VW025	TestNo:	EPA 8260B	Analysis Date:			2/17/2017		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	21.110	1.0	20.00	0	106	81	129				
1,1,1-Trichloroethane	19.260	1.0	20.00	0	96.3	67	132				
1,1,2,2-Tetrachloroethane	18.690	1.0	20.00	0	93.5	63	128				
1,1,2-Trichloroethane	19.630	1.0	20.00	0	98.2	75	125				
1,1-Dichloroethane	18.100	0.50	20.00	0	90.5	69	133				
1,1-Dichloroethene	19.210	1.0	20.00	0	96.0	68	130				
1,1-Dichloropropene	20.890	1.0	20.00	0	104	73	132				
1,2,3-Trichlorobenzene	17.890	1.0	20.00	0	89.4	67	137				
1,2,3-Trichloropropane	18.280	1.0	20.00	0	91.4	73	124				
1,2,4-Trichlorobenzene	17.540	1.0	20.00	0	87.7	66	134				
1,2,4-Trimethylbenzene	21.670	1.0	20.00	0	108	74	132				
1,2-Dibromo-3-chloropropane	20.260	2.0	20.00	0	101	50	132				
1,2-Dibromoethane	20.810	1.0	20.00	0	104	80	121				
1,2-Dichlorobenzene	21.200	1.0	20.00	0	106	71	122				
1,2-Dichloroethane	19.000	0.50	20.00	0	95.0	69	132				
1,2-Dichloropropane	19.630	1.0	20.00	0	98.2	75	125				
1,3,5-Trimethylbenzene	20.830	1.0	20.00	0	104	74	131				
1,3-Dichlorobenzene	20.310	1.0	20.00	0	102	75	124				
1,3-Dichloropropane	20.620	1.0	20.00	0	103	73	126				
1,4-Dichlorobenzene	20.400	1.0	20.00	0	102	74	123				
2,2-Dichloropropane	20.030	1.0	20.00	0	100	69	137				
2-Butanone	148.700	10	200.0	0	74.4	49	136				
2-Chlorotoluene	19.130	1.0	20.00	0	95.7	73	126				
2-Hexanone	172.640	5.0	200.0	0	86.3	70	130				
4-Chlorotoluene	19.560	1.0	20.00	0	97.8	74	128				
4-Isopropyltoluene	22.590	1.0	20.00	0	113	73	130				
4-Methyl-2-pentanone	176.550	10	200.0	0	88.3	58	134				
Acetone	165.750	10	200.0	0	82.9	40	135				
Acrolein	186.390	20	200.0	0	93.2	75	125				
Acrylonitrile	175.170	20	200.0	0	87.6	75	125				

Qualifiers:

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| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | ND Not Detected at the Reporting Limit | R RPD outside accepted recovery limits |
| S Spike/Surrogate outside of limits due to matrix interference | DO Surrogate Diluted Out | Calculations are based on raw values |

CLIENT: CH2MHill
Work Order: N023124
Project: KMEP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID	P170217LCS	SampType: LCS	TestCode: 8260_WP_SF Units: ug/L			Prep Date:			RunNo: 113586		
Client ID:	LCSW	Batch ID:	P17VW025	TestNo: EPA 8260B		Analysis Date: 2/17/2017			SeqNo: 2571530		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	19.980	1.0	20.00	0	99.9	81	122				
Bromobenzene	18.850	1.0	20.00	0	94.3	76	124				
Bromochloromethane	19.100	1.0	20.00	0	95.5	65	129				
Bromodichloromethane	19.850	1.0	20.00	0	99.2	76	121				
Bromoform	19.110	1.0	20.00	0	95.6	69	128				
Bromomethane	17.630	1.0	20.00	0	88.2	53	141				
Carbon disulfide	16.040	1.0	20.00	0	80.2	75	125				
Carbon tetrachloride	21.900	0.50	20.00	0	110	66	138				
Chlorobenzene	20.600	1.0	20.00	0	103	81	122				
Chloroethane	19.760	1.0	20.00	0	98.8	58	133				
Chloroform	19.050	1.0	20.00	0	95.2	69	128				
Chloromethane	16.230	1.0	20.00	0	81.2	56	131				
cis-1,2-Dichloroethene	18.740	1.0	20.00	0	93.7	72	126				
cis-1,3-Dichloropropene	20.620	1.0	20.00	0	103	69	131				
Di-isopropyl ether	16.710	1.0	20.00	0	83.6	70	130				
Dibromochloromethane	21.110	1.0	20.00	0	106	66	133				
Dibromomethane	19.410	1.0	20.00	0	97.0	76	125				
Dichlorodifluoromethane	21.610	1.0	20.00	0	108	53	153				
Ethyl tert-butyl ether	16.730	1.0	20.00	0	83.6	70	130				
Ethylbenzene	20.300	1.0	20.00	0	102	73	127				
Freon-113	16.490	1.0	20.00	0	82.5	75	125				
Hexachlorobutadiene	21.810	1.0	20.00	0	109	67	131				
Isopropylbenzene	16.780	1.0	20.00	0	83.9	75	127				
m,p-Xylene	40.550	1.0	40.00	0	101	76	128				
Methylene chloride	17.890	2.0	20.00	0	89.4	63	137				
MTBE	17.110	1.0	20.00	0	85.6	65	123				
n-Butylbenzene	18.140	1.0	20.00	0	90.7	69	137				
n-Propylbenzene	20.820	1.0	20.00	0	104	72	129				
Naphthalene	18.750	1.0	20.00	0	93.8	54	138				
o-Xylene	20.970	1.0	20.00	0	105	80	121				

Qualifiers:

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| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | ND Not Detected at the Reporting Limit | R RPD outside accepted recovery limits |
| S Spike/Surrogate outside of limits due to matrix interference | DO Surrogate Diluted Out | Calculations are based on raw values |

CLIENT: CH2MHill
Work Order: N023124
Project: KMEP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID	P170217LCS	SampType: LCS	TestCode: 8260_WP_SF Units: ug/L				Prep Date:			RunNo: 113586			
Client ID:	LCSW	Batch ID:	P17VW025	TestNo:		EPA 8260B	Analysis Date:			2/17/2017			SeqNo: 2571530
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
sec-Butylbenzene	21.850	1.0	20.00	0	109	72	127						
Styrene	20.650	1.0	20.00	0	103	65	134						
Tert-amyl methyl ether	17.970	1.0	20.00	0	89.8	70	130						
Tert-Butanol	88.520	5.0	100.0	0	88.5	70	130						
tert-Butylbenzene	21.210	1.0	20.00	0	106	70	129						
Tetrachloroethene	20.470	1.0	20.00	0	102	66	128						
Toluene	19.060	2.0	20.00	0	95.3	77	122						
trans-1,2-Dichloroethene	19.000	1.0	20.00	0	95.0	63	137						
trans-1,3-Dichloropropene	20.550	1.0	20.00	0	103	59	135						
Trichloroethene	20.860	1.0	20.00	0	104	70	127						
Trichlorofluoromethane	19.320	1.0	20.00	0	96.6	57	129						
Vinyl chloride	18.820	0.50	20.00	0	94.1	50	134						
Xylenes, Total	61.520	2.0	60.00	0	103	75	125						
Surr: 1,2-Dichloroethane-d4	24.400		25.00		97.6	72	119						
Surr: 4-Bromofluorobenzene	24.650		25.00		98.6	76	119						
Surr: Dibromofluoromethane	24.540		25.00		98.2	85	115						
Surr: Toluene-d8	25.100		25.00		100	81	120						

Sample ID	P170217LCSD	SampType: LCSD	TestCode: 8260_WP_SF Units: ug/L				Prep Date:			RunNo: 113586			
Client ID:	LCSS02	Batch ID:	P17VW025	TestNo:		EPA 8260B	Analysis Date:			2/17/2017			SeqNo: 2571531
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
1,1,1,2-Tetrachloroethane	20.700	1.0	20.00	0	104	81	129	21.11	1.96	20			
1,1,1-Trichloroethane	19.180	1.0	20.00	0	95.9	67	132	19.26	0.416	20			
1,1,2,2-Tetrachloroethane	19.570	1.0	20.00	0	97.9	63	128	18.69	4.60	20			
1,1,2-Trichloroethane	19.980	1.0	20.00	0	99.9	75	125	19.63	1.77	20			
1,1-Dichloroethane	18.120	0.50	20.00	0	90.6	69	133	18.10	0.110	20			
1,1-Dichloroethene	18.800	1.0	20.00	0	94.0	68	130	19.21	2.16	20			
1,1-Dichloropropene	20.370	1.0	20.00	0	102	73	132	20.89	2.52	20			
1,2,3-Trichlorobenzene	18.060	1.0	20.00	0	90.3	67	137	17.89	0.946	20			

Qualifiers:

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| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | ND Not Detected at the Reporting Limit | R RPD outside accepted recovery limits |
| S Spike/Surrogate outside of limits due to matrix interference | DO Surrogate Diluted Out | Calculations are based on raw values |

CLIENT: CH2MHill
Work Order: N023124
Project: KMEP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID	P170217LCSD	SampType: LCSD	TestCode: 8260_WP_SF Units: ug/L				Prep Date:			RunNo: 113586		
Client ID:	LCSS02	Batch ID:	P17VW025	TestNo: EPA 8260B		Analysis Date: 2/17/2017			SeqNo: 2571531			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
1,2,3-Trichloropropane	18.660	1.0	20.00	0	93.3	73	124	18.28	2.06	20		
1,2,4-Trichlorobenzene	17.450	1.0	20.00	0	87.2	66	134	17.54	0.514	20		
1,2,4-Trimethylbenzene	21.310	1.0	20.00	0	107	74	132	21.67	1.68	20		
1,2-Dibromo-3-chloropropane	22.490	2.0	20.00	0	112	50	132	20.26	10.4	20		
1,2-Dibromoethane	20.880	1.0	20.00	0	104	80	121	20.81	0.336	20		
1,2-Dichlorobenzene	21.010	1.0	20.00	0	105	71	122	21.20	0.900	20		
1,2-Dichloroethane	19.630	0.50	20.00	0	98.2	69	132	19.00	3.26	20		
1,2-Dichloropropane	19.600	1.0	20.00	0	98.0	75	125	19.63	0.153	20		
1,3,5-Trimethylbenzene	20.390	1.0	20.00	0	102	74	131	20.83	2.13	20		
1,3-Dichlorobenzene	19.970	1.0	20.00	0	99.8	75	124	20.31	1.69	20		
1,3-Dichloropropane	21.030	1.0	20.00	0	105	73	126	20.62	1.97	20		
1,4-Dichlorobenzene	20.060	1.0	20.00	0	100	74	123	20.40	1.68	20		
2,2-Dichloropropane	19.650	1.0	20.00	0	98.2	69	137	20.03	1.92	20		
2-Butanone	149.820	10	200.0	0	74.9	49	136	148.7	0.750	20		
2-Chlorotoluene	18.450	1.0	20.00	0	92.2	73	126	19.13	3.62	20		
2-Hexanone	170.030	5.0	200.0	0	85.0	70	130	172.6	1.52	20		
4-Chlorotoluene	19.230	1.0	20.00	0	96.2	74	128	19.56	1.70	20		
4-Isopropyltoluene	21.810	1.0	20.00	0	109	73	130	22.59	3.51	20		
4-Methyl-2-pentanone	184.130	10	200.0	0	92.1	58	134	176.6	4.20	20		
Acetone	171.500	10	200.0	0	85.8	40	135	165.8	3.41	20		
Acrolein	206.130	20	200.0	0	103	75	125	186.4	10.1	20		
Acrylonitrile	203.070	20	200.0	0	102	75	125	175.2	14.8	20		
Benzene	19.350	1.0	20.00	0	96.8	81	122	19.98	3.20	20		
Bromobenzene	18.540	1.0	20.00	0	92.7	76	124	18.85	1.66	20		
Bromochloromethane	18.770	1.0	20.00	0	93.8	65	129	19.10	1.74	20		
Bromodichloromethane	20.040	1.0	20.00	0	100	76	121	19.85	0.953	20		
Bromoform	19.590	1.0	20.00	0	98.0	69	128	19.11	2.48	20		
Bromomethane	17.040	1.0	20.00	0	85.2	53	141	17.63	3.40	20		
Carbon disulfide	15.550	1.0	20.00	0	77.8	75	125	16.04	3.10	20		
Carbon tetrachloride	21.250	0.50	20.00	0	106	66	138	21.90	3.01	20		

Qualifiers:

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| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | ND Not Detected at the Reporting Limit | R RPD outside accepted recovery limits |
| S Spike/Surrogate outside of limits due to matrix interference | DO Surrogate Diluted Out | Calculations are based on raw values |

CLIENT: CH2MHill
Work Order: N023124
Project: KMEP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID	P170217LCSD	SampType: LCSD	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 113586					
Client ID:	LCSS02	Batch ID:	P17VW025	TestNo:	EPA 8260B	Analysis Date:	2/17/2017	SeqNo:	2571531		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chlorobenzene	20.770	1.0	20.00	0	104	81	122	20.60	0.822	20	
Chloroethane	19.930	1.0	20.00	0	99.7	58	133	19.76	0.857	20	
Chloroform	18.670	1.0	20.00	0	93.4	69	128	19.05	2.01	20	
Chloromethane	16.520	1.0	20.00	0	82.6	56	131	16.23	1.77	20	
cis-1,2-Dichloroethene	19.010	1.0	20.00	0	95.1	72	126	18.74	1.43	20	
cis-1,3-Dichloropropene	20.680	1.0	20.00	0	103	69	131	20.62	0.291	20	
Di-isopropyl ether	16.580	1.0	20.00	0	82.9	70	130	16.71	0.781	20	
Dibromochloromethane	22.240	1.0	20.00	0	111	66	133	21.11	5.21	20	
Dibromomethane	19.500	1.0	20.00	0	97.5	76	125	19.41	0.463	20	
Dichlorodifluoromethane	22.320	1.0	20.00	0	112	53	153	21.61	3.23	20	
Ethyl tert-butyl ether	17.210	1.0	20.00	0	86.1	70	130	16.73	2.83	20	
Ethylbenzene	19.800	1.0	20.00	0	99.0	73	127	20.30	2.49	20	
Freon-113	15.770	1.0	20.00	0	78.8	75	125	16.49	4.46	20	
Hexachlorobutadiene	20.670	1.0	20.00	0	103	67	131	21.81	5.37	20	
Isopropylbenzene	16.060	1.0	20.00	0	80.3	75	127	16.78	4.38	20	
m,p-Xylene	40.090	1.0	40.00	0	100	76	128	40.55	1.14	20	
Methylene chloride	18.430	2.0	20.00	0	92.2	63	137	17.89	2.97	20	
MTBE	17.390	1.0	20.00	0	87.0	65	123	17.11	1.62	20	
n-Butylbenzene	17.490	1.0	20.00	0	87.5	69	137	18.14	3.65	20	
n-Propylbenzene	20.150	1.0	20.00	0	101	72	129	20.82	3.27	20	
Naphthalene	19.580	1.0	20.00	0	97.9	54	138	18.75	4.33	20	
o-Xylene	20.580	1.0	20.00	0	103	80	121	20.97	1.88	20	
sec-Butylbenzene	21.040	1.0	20.00	0	105	72	127	21.85	3.78	20	
Styrene	20.580	1.0	20.00	0	103	65	134	20.65	0.340	20	
Tert-amyl methyl ether	18.110	1.0	20.00	0	90.6	70	130	17.97	0.776	20	
Tert-Butanol	90.880	5.0	100.0	0	90.9	70	130	88.52	2.63	20	
tert-Butylbenzene	20.320	1.0	20.00	0	102	70	129	21.21	4.29	20	
Tetrachloroethene	20.420	1.0	20.00	0	102	66	128	20.47	0.245	20	
Toluene	18.690	2.0	20.00	0	93.5	77	122	19.06	1.96	20	
trans-1,2-Dichloroethene	18.720	1.0	20.00	0	93.6	63	137	19.00	1.48	20	

Qualifiers:

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| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | ND Not Detected at the Reporting Limit | R RPD outside accepted recovery limits |
| S Spike/Surrogate outside of limits due to matrix interference | DO Surrogate Diluted Out | Calculations are based on raw values |

CLIENT: CH2MHill
Work Order: N023124
Project: KMEP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID	SampType	TestCode	Units	Prep Date	RunNo						
P170217LCSD	LCSD	8260_WP_SF	ug/L		113586						
Client ID: LCSS02	Batch ID: P17VW025	TestNo: EPA 8260B		Analysis Date: 2/17/2017	SeqNo: 2571531						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
trans-1,3-Dichloropropene	20.920	1.0	20.00	0	105	59	135	20.55	1.78	20	
Trichloroethene	19.930	1.0	20.00	0	99.7	70	127	20.86	4.56	20	
Trichlorofluoromethane	21.340	1.0	20.00	0	107	57	129	19.32	9.94	20	
Vinyl chloride	18.330	0.50	20.00	0	91.7	50	134	18.82	2.64	20	
Xylenes, Total	60.670	2.0	60.00	0	101	75	125	61.52	1.39	20	
Surr: 1,2-Dichloroethane-d4	25.810		25.00		103	72	119		0		
Surr: 4-Bromofluorobenzene	25.310		25.00		101	76	119		0		
Surr: Dibromofluoromethane	24.800		25.00		99.2	85	115		0		
Surr: Toluene-d8	25.200		25.00		101	81	120		0		

Sample ID	SampType	TestCode	Units	Prep Date	RunNo						
P170217MB3	MBLK	8260_WP_SF	ug/L		113586						
Client ID: PBW	Batch ID: P17VW025	TestNo: EPA 8260B		Analysis Date: 2/17/2017	SeqNo: 2571532						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	ND	1.0									
1,1,1-Trichloroethane	ND	1.0									
1,1,2,2-Tetrachloroethane	ND	1.0									
1,1,2-Trichloroethane	ND	1.0									
1,1-Dichloroethane	ND	0.50									
1,1-Dichloroethene	ND	1.0									
1,1-Dichloropropene	ND	1.0									
1,2,3-Trichlorobenzene	ND	1.0									
1,2,3-Trichloropropane	ND	1.0									
1,2,4-Trichlorobenzene	ND	1.0									
1,2,4-Trimethylbenzene	ND	1.0									
1,2-Dibromo-3-chloropropane	ND	2.0									
1,2-Dibromoethane	ND	1.0									
1,2-Dichlorobenzene	ND	1.0									
1,2-Dichloroethane	ND	0.50									
1,2-Dichloropropane	ND	1.0									

Qualifiers:

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|--|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | ND Not Detected at the Reporting Limit | R RPD outside accepted recovery limits |
| S Spike/Surrogate outside of limits due to matrix interference | DO Surrogate Diluted Out | Calculations are based on raw values |

CLIENT: CH2MHill
Work Order: N023124
Project: KMEP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID	SampType	TestCode	Units	Prep Date	RunNo						
P170217MB3	MBLK	8260_WP_SF	ug/L		113586						
Client ID: PBW	Batch ID: P17VW025	TestNo: EPA 8260B		Analysis Date: 2/17/2017	SeqNo: 2571532						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,3,5-Trimethylbenzene	ND	1.0									
1,3-Dichlorobenzene	ND	1.0									
1,3-Dichloropropane	ND	1.0									
1,4-Dichlorobenzene	ND	1.0									
2,2-Dichloropropane	ND	1.0									
2-Butanone	ND	10									
2-Chlorotoluene	ND	1.0									
2-Hexanone	ND	5.0									
4-Chlorotoluene	ND	1.0									
4-Isopropyltoluene	ND	1.0									
4-Methyl-2-pentanone	ND	10									
Acetone	ND	10									
Acrolein	ND	20									
Acrylonitrile	ND	20									
Benzene	ND	1.0									
Bromobenzene	ND	1.0									
Bromochloromethane	ND	1.0									
Bromodichloromethane	ND	1.0									
Bromoform	ND	1.0									
Bromomethane	ND	1.0									
Carbon disulfide	ND	1.0									
Carbon tetrachloride	ND	0.50									
Chlorobenzene	ND	1.0									
Chloroethane	ND	1.0									
Chloroform	ND	1.0									
Chloromethane	ND	1.0									
cis-1,2-Dichloroethene	ND	1.0									
cis-1,3-Dichloropropene	ND	1.0									
Di-isopropyl ether	ND	1.0									
Dibromochloromethane	ND	1.0									

Qualifiers:

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|--|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | ND Not Detected at the Reporting Limit | R RPD outside accepted recovery limits |
| S Spike/Surrogate outside of limits due to matrix interference | DO Surrogate Diluted Out | Calculations are based on raw values |

CLIENT: CH2MHill
Work Order: N023124
Project: KMEP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID	SampType	TestCode	Units	Prep Date	RunNo						
P170217MB3	MBLK	8260_WP_SF	ug/L		113586						
Client ID: PBW	Batch ID: P17VW025	TestNo: EPA 8260B		Analysis Date: 2/17/2017	SeqNo: 2571532						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dibromomethane	ND	1.0									
Dichlorodifluoromethane	ND	1.0									
Ethyl tert-butyl ether	ND	1.0									
Ethylbenzene	ND	1.0									
Freon-113	ND	1.0									
Hexachlorobutadiene	ND	1.0									
Isopropylbenzene	ND	1.0									
m,p-Xylene	ND	1.0									
Methylene chloride	0.510	2.0									J
MTBE	ND	1.0									
n-Butylbenzene	ND	1.0									
n-Propylbenzene	ND	1.0									
Naphthalene	ND	1.0									
o-Xylene	ND	1.0									
sec-Butylbenzene	ND	1.0									
Styrene	ND	1.0									
Tert-amyl methyl ether	ND	1.0									
Tert-Butanol	ND	5.0									
tert-Butylbenzene	ND	1.0									
Tetrachloroethene	ND	1.0									
Toluene	ND	2.0									
trans-1,2-Dichloroethene	ND	1.0									
trans-1,3-Dichloropropene	ND	1.0									
Trichloroethene	ND	1.0									
Trichlorofluoromethane	ND	1.0									
Vinyl chloride	ND	0.50									
Xylenes, Total	ND	2.0									
Surr: 1,2-Dichloroethane-d4	24.020		25.00		96.1	72	119				
Surr: 4-Bromofluorobenzene	24.300		25.00		97.2	76	119				
Surr: Dibromofluoromethane	24.000		25.00		96.0	85	115				

Qualifiers:

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| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | ND Not Detected at the Reporting Limit | R RPD outside accepted recovery limits |
| S Spike/Surrogate outside of limits due to matrix interference | DO Surrogate Diluted Out | Calculations are based on raw values |

CLIENT: CH2MHill
Work Order: N023124
Project: KMEP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID P170217MB3	SampType: MBLK	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 113586						
Client ID: PBW	Batch ID: P17VW025	TestNo: EPA 8260B		Analysis Date: 2/17/2017	SeqNo: 2571532						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Toluene-d8	25.600		25.00		102	81	120				

Sample ID N023124-010AMS	SampType: MS	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 113586						
Client ID: ZZZZZ	Batch ID: P17VW025	TestNo: EPA 8260B		Analysis Date: 2/17/2017	SeqNo: 2571549						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	20.310	1.0	20.00	0	102	81	129				
1,1,1-Trichloroethane	18.350	1.0	20.00	0	91.8	67	132				
1,1,2,2-Tetrachloroethane	18.740	1.0	20.00	0	93.7	63	128				
1,1,2-Trichloroethane	19.260	1.0	20.00	0	96.3	75	125				
1,1-Dichloroethane	17.040	0.50	20.00	0	85.2	69	133				
1,1-Dichloroethene	17.920	1.0	20.00	0	89.6	68	130				
1,1-Dichloropropene	19.680	1.0	20.00	0	98.4	73	132				
1,2,3-Trichlorobenzene	17.350	1.0	20.00	0	86.8	67	137				
1,2,3-Trichloropropane	17.110	1.0	20.00	0	85.6	73	124				
1,2,4-Trichlorobenzene	16.630	1.0	20.00	0	83.2	66	134				
1,2,4-Trimethylbenzene	18.270	1.0	20.00	0	91.4	74	132				
1,2-Dibromo-3-chloropropane	20.000	2.0	20.00	0	100	50	132				
1,2-Dibromoethane	19.700	1.0	20.00	0	98.5	80	121				
1,2-Dichlorobenzene	20.200	1.0	20.00	0	101	71	122				
1,2-Dichloroethane	18.750	0.50	20.00	0	93.8	69	132				
1,2-Dichloropropane	18.930	1.0	20.00	0	94.6	75	125				
1,3,5-Trimethylbenzene	16.740	1.0	20.00	0	83.7	74	131				
1,3-Dichlorobenzene	19.350	1.0	20.00	0	96.8	75	124				
1,3-Dichloropropane	20.140	1.0	20.00	0	101	73	126				
1,4-Dichlorobenzene	19.460	1.0	20.00	0	97.3	74	123				
2,2-Dichloropropane	17.510	1.0	20.00	0	87.6	69	137				
2-Butanone	84.760	10	200.0	0	42.4	49	136				S
2-Chlorotoluene	17.860	1.0	20.00	0	89.3	73	126				
2-Hexanone	114.360	5.0	200.0	0	57.2	70	130				S

Qualifiers:

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|--|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | ND Not Detected at the Reporting Limit | R RPD outside accepted recovery limits |
| S Spike/Surrogate outside of limits due to matrix interference | DO Surrogate Diluted Out | Calculations are based on raw values |

CLIENT: CH2MHill
Work Order: N023124
Project: KMEP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID	N023124-010AMS	SampType: MS	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 113586					
Client ID:	ZZZZZZ	Batch ID: P17VW025	TestNo: EPA 8260B		Analysis Date: 2/17/2017	SeqNo: 2571549					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4-Chlorotoluene	18.590	1.0	20.00	0	93.0	74	128				
4-Isopropyltoluene	20.810	1.0	20.00	0	104	73	130				
4-Methyl-2-pentanone	163.270	10	200.0	0	81.6	58	134				
Acetone	52.500	10	200.0	0	26.2	40	135				S
Acrolein	135.880	20	200.0	0	67.9	75	125				S
Acrylonitrile	161.900	20	200.0	0	81.0	75	125				
Benzene	18.980	1.0	20.00	0	94.9	81	122				
Bromobenzene	18.220	1.0	20.00	0	91.1	76	124				
Bromochloromethane	18.190	1.0	20.00	0	91.0	65	129				
Bromodichloromethane	19.140	1.0	20.00	0	95.7	76	121				
Bromoform	17.820	1.0	20.00	0	89.1	69	128				
Bromomethane	17.560	1.0	20.00	0	87.8	53	141				
Carbon disulfide	14.820	1.0	20.00	0	74.1	75	125				S
Carbon tetrachloride	20.570	0.50	20.00	0	103	66	138				
Chlorobenzene	20.040	1.0	20.00	0	100	81	122				
Chloroethane	19.700	1.0	20.00	0	98.5	58	133				
Chloroform	17.670	1.0	20.00	0	88.4	69	128				
Chloromethane	15.140	1.0	20.00	0	75.7	56	131				
cis-1,2-Dichloroethene	18.010	1.0	20.00	0	90.1	72	126				
cis-1,3-Dichloropropene	19.840	1.0	20.00	0	99.2	69	131				
Di-isopropyl ether	15.850	1.0	20.00	0	79.2	70	130				
Dibromochloromethane	20.840	1.0	20.00	0	104	66	133				
Dibromomethane	18.580	1.0	20.00	0	92.9	76	125				
Dichlorodifluoromethane	21.010	1.0	20.00	0	105	53	153				
Ethyl tert-butyl ether	16.070	1.0	20.00	0	80.4	70	130				
Ethylbenzene	19.310	1.0	20.00	0	96.6	73	127				
Freon-113	15.700	1.0	20.00	0	78.5	75	125				
Hexachlorobutadiene	20.110	1.0	20.00	0	101	67	131				
Isopropylbenzene	15.840	1.0	20.00	0	79.2	75	127				
m,p-Xylene	37.110	1.0	40.00	0	92.8	76	128				

Qualifiers:

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| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | ND Not Detected at the Reporting Limit | R RPD outside accepted recovery limits |
| S Spike/Surrogate outside of limits due to matrix interference | DO Surrogate Diluted Out | Calculations are based on raw values |

CLIENT: CH2MHill
Work Order: N023124
Project: KMEP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID	N023124-010AMS	SampType: MS	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 113586					
Client ID:	ZZZZZZ	Batch ID: P17VW025	TestNo: EPA 8260B		Analysis Date: 2/17/2017	SeqNo: 2571549					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methylene chloride	17.850	2.0	20.00	0.9100	84.7	63	137				
MTBE	16.240	1.0	20.00	0	81.2	65	123				
n-Butylbenzene	17.170	1.0	20.00	0	85.9	69	137				
n-Propylbenzene	19.770	1.0	20.00	0	98.8	72	129				
Naphthalene	17.220	1.0	20.00	0	86.1	54	138				
o-Xylene	19.140	1.0	20.00	0	95.7	80	121				
sec-Butylbenzene	20.390	1.0	20.00	0	102	72	127				
Styrene	16.770	1.0	20.00	0	83.9	65	134				
Tert-amyl methyl ether	17.540	1.0	20.00	0	87.7	70	130				
Tert-Butanol	86.770	5.0	100.0	0	86.8	70	130				
tert-Butylbenzene	19.970	1.0	20.00	0	99.8	70	129				
Tetrachloroethene	20.270	1.0	20.00	0	101	66	128				
Toluene	17.970	2.0	20.00	0.2200	88.8	77	122				
trans-1,2-Dichloroethene	18.170	1.0	20.00	0	90.9	63	137				
trans-1,3-Dichloropropene	19.330	1.0	20.00	0	96.7	59	135				
Trichloroethene	19.680	1.0	20.00	0	98.4	70	127				
Trichlorofluoromethane	20.720	1.0	20.00	0	104	57	129				
Vinyl chloride	17.540	0.50	20.00	0	87.7	50	134				
Xylenes, Total	56.250	2.0	60.00	0	93.8	75	125				
Surr: 1,2-Dichloroethane-d4	23.330		25.00		93.3	72	119				
Surr: 4-Bromofluorobenzene	25.330		25.00		101	76	119				
Surr: Dibromofluoromethane	23.430		25.00		93.7	85	115				
Surr: Toluene-d8	25.300		25.00		101	81	120				

Sample ID	N023124-010AMS	SampType: MSD	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 113586					
Client ID:	ZZZZZZ	Batch ID: P17VW025	TestNo: EPA 8260B		Analysis Date: 2/17/2017	SeqNo: 2571550					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	21.020	1.0	20.00	0	105	81	129	20.31	3.44	20	
1,1,1-Trichloroethane	18.920	1.0	20.00	0	94.6	67	132	18.35	3.06	20	

Qualifiers:

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| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | ND Not Detected at the Reporting Limit | R RPD outside accepted recovery limits |
| S Spike/Surrogate outside of limits due to matrix interference | DO Surrogate Diluted Out | Calculations are based on raw values |

CLIENT: CH2MHill
Work Order: N023124
Project: KMEP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID	N023124-010AMSD	SampType: MSD	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 113586					
Client ID:	ZZZZZZ	Batch ID:	P17VW025	TestNo:	EPA 8260B	Analysis Date:	2/17/2017	SeqNo:	2571550		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,2,2-Tetrachloroethane	18.470	1.0	20.00	0	92.4	63	128	18.74	1.45	20	
1,1,2-Trichloroethane	18.900	1.0	20.00	0	94.5	75	125	19.26	1.89	20	
1,1-Dichloroethane	18.090	0.50	20.00	0	90.4	69	133	17.04	5.98	20	
1,1-Dichloroethene	17.570	1.0	20.00	0	87.9	68	130	17.92	1.97	20	
1,1-Dichloropropene	19.540	1.0	20.00	0	97.7	73	132	19.68	0.714	20	
1,2,3-Trichlorobenzene	18.670	1.0	20.00	0	93.4	67	137	17.35	7.33	20	
1,2,3-Trichloropropane	17.350	1.0	20.00	0	86.8	73	124	17.11	1.39	20	
1,2,4-Trichlorobenzene	17.850	1.0	20.00	0	89.2	66	134	16.63	7.08	20	
1,2,4-Trimethylbenzene	17.400	1.0	20.00	0	87.0	74	132	18.27	4.88	20	
1,2-Dibromo-3-chloropropane	20.990	2.0	20.00	0	105	50	132	20.00	4.83	20	
1,2-Dibromoethane	21.220	1.0	20.00	0	106	80	121	19.70	7.43	20	
1,2-Dichlorobenzene	20.450	1.0	20.00	0	102	71	122	20.20	1.23	20	
1,2-Dichloroethane	19.230	0.50	20.00	0	96.2	69	132	18.75	2.53	20	
1,2-Dichloropropane	19.260	1.0	20.00	0	96.3	75	125	18.93	1.73	20	
1,3,5-Trimethylbenzene	15.670	1.0	20.00	0	78.4	74	131	16.74	6.60	20	
1,3-Dichlorobenzene	19.760	1.0	20.00	0	98.8	75	124	19.35	2.10	20	
1,3-Dichloropropane	20.630	1.0	20.00	0	103	73	126	20.14	2.40	20	
1,4-Dichlorobenzene	19.820	1.0	20.00	0	99.1	74	123	19.46	1.83	20	
2,2-Dichloropropane	18.160	1.0	20.00	0	90.8	69	137	17.51	3.64	20	
2-Butanone	90.080	10	200.0	0	45.0	49	136	84.76	6.09	20	S
2-Chlorotoluene	17.960	1.0	20.00	0	89.8	73	126	17.86	0.558	20	
2-Hexanone	118.270	5.0	200.0	0	59.1	70	130	114.4	3.36	20	S
4-Chlorotoluene	19.160	1.0	20.00	0	95.8	74	128	18.59	3.02	20	
4-Isopropyltoluene	20.710	1.0	20.00	0	104	73	130	20.81	0.482	20	
4-Methyl-2-pentanone	169.590	10	200.0	0	84.8	58	134	163.3	3.80	20	
Acetone	50.000	10	200.0	0	25.0	40	135	52.50	4.88	20	S
Acrolein	147.470	20	200.0	0	73.7	75	125	135.9	8.18	20	S
Acrylonitrile	193.680	20	200.0	0	96.8	75	125	161.9	17.9	20	
Benzene	19.440	1.0	20.00	0	97.2	81	122	18.98	2.39	20	
Bromobenzene	18.650	1.0	20.00	0	93.3	76	124	18.22	2.33	20	

Qualifiers:

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|--|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
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| S Spike/Surrogate outside of limits due to matrix interference | DO Surrogate Diluted Out | Calculations are based on raw values |

CLIENT: CH2MHill
Work Order: N023124
Project: KMEP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID	SampType	TestCode	Units	Prep Date:	RunNo:						
N023124-010AMSD	MSD	8260_WP_SF	ug/L		113586						
Client ID:	Batch ID:	TestNo:	Analysis Date:	SeqNo:							
ZZZZZ	P17VW025	EPA 8260B	2/17/2017	2571550							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromochloromethane	19.350	1.0	20.00	0	96.8	65	129	18.19	6.18	20	
Bromodichloromethane	19.650	1.0	20.00	0	98.2	76	121	19.14	2.63	20	
Bromoform	18.800	1.0	20.00	0	94.0	69	128	17.82	5.35	20	
Bromomethane	17.820	1.0	20.00	0	89.1	53	141	17.56	1.47	20	
Carbon disulfide	15.210	1.0	20.00	0	76.1	75	125	14.82	2.60	20	
Carbon tetrachloride	21.170	0.50	20.00	0	106	66	138	20.57	2.87	20	
Chlorobenzene	20.300	1.0	20.00	0	102	81	122	20.04	1.29	20	
Chloroethane	19.710	1.0	20.00	0	98.6	58	133	19.70	0.0507	20	
Chloroform	18.490	1.0	20.00	0	92.5	69	128	17.67	4.54	20	
Chloromethane	16.390	1.0	20.00	0	82.0	56	131	15.14	7.93	20	
cis-1,2-Dichloroethene	18.980	1.0	20.00	0	94.9	72	126	18.01	5.24	20	
cis-1,3-Dichloropropene	20.300	1.0	20.00	0	102	69	131	19.84	2.29	20	
Di-isopropyl ether	17.090	1.0	20.00	0	85.4	70	130	15.85	7.53	20	
Dibromochloromethane	21.400	1.0	20.00	0	107	66	133	20.84	2.65	20	
Dibromomethane	19.150	1.0	20.00	0	95.8	76	125	18.58	3.02	20	
Dichlorodifluoromethane	21.650	1.0	20.00	0	108	53	153	21.01	3.00	20	
Ethyl tert-butyl ether	17.050	1.0	20.00	0	85.2	70	130	16.07	5.92	20	
Ethylbenzene	19.220	1.0	20.00	0	96.1	73	127	19.31	0.467	20	
Freon-113	15.440	1.0	20.00	0	77.2	75	125	15.70	1.67	20	
Hexachlorobutadiene	20.880	1.0	20.00	0	104	67	131	20.11	3.76	20	
Isopropylbenzene	15.140	1.0	20.00	0	75.7	75	127	15.84	4.52	20	
m,p-Xylene	36.710	1.0	40.00	0	91.8	76	128	37.11	1.08	20	
Methylene chloride	18.750	2.0	20.00	0.9100	89.2	63	137	17.85	4.92	20	
MTBE	16.830	1.0	20.00	0	84.2	65	123	16.24	3.57	20	
n-Butylbenzene	17.270	1.0	20.00	0	86.4	69	137	17.17	0.581	20	
n-Propylbenzene	19.360	1.0	20.00	0	96.8	72	129	19.77	2.10	20	
Naphthalene	17.860	1.0	20.00	0	89.3	54	138	17.22	3.65	20	
o-Xylene	19.510	1.0	20.00	0	97.6	80	121	19.14	1.91	20	
sec-Butylbenzene	20.180	1.0	20.00	0	101	72	127	20.39	1.04	20	
Styrene	15.520	1.0	20.00	0	77.6	65	134	16.77	7.74	20	

Qualifiers:

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|--|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
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| S Spike/Surrogate outside of limits due to matrix interference | DO Surrogate Diluted Out | Calculations are based on raw values |

CLIENT: CH2MHill
Work Order: N023124
Project: KMEP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID	N023124-010AMSD	SampType: MSD	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 113586					
Client ID:	ZZZZZZ	Batch ID:	P17VW025	TestNo:	EPA 8260B	Analysis Date:	2/17/2017	SeqNo:	2571550		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Tert-amyl methyl ether	17.820	1.0	20.00	0	89.1	70	130	17.54	1.58	20	
Tert-Butanol	89.490	5.0	100.0	0	89.5	70	130	86.77	3.09	20	
tert-Butylbenzene	19.890	1.0	20.00	0	99.4	70	129	19.97	0.401	20	
Tetrachloroethene	20.270	1.0	20.00	0	101	66	128	20.27	0	20	
Toluene	17.950	2.0	20.00	0.2200	88.6	77	122	17.97	0.111	20	
trans-1,2-Dichloroethene	18.280	1.0	20.00	0	91.4	63	137	18.17	0.604	20	
trans-1,3-Dichloropropene	19.720	1.0	20.00	0	98.6	59	135	19.33	2.00	20	
Trichloroethene	19.900	1.0	20.00	0	99.5	70	127	19.68	1.11	20	
Trichlorofluoromethane	20.580	1.0	20.00	0	103	57	129	20.72	0.678	20	
Vinyl chloride	18.280	0.50	20.00	0	91.4	50	134	17.54	4.13	20	
Xylenes, Total	56.220	2.0	60.00	0	93.7	75	125	56.25	0.0533	20	
Surr: 1,2-Dichloroethane-d4	24.750		25.00		99.0	72	119		0		
Surr: 4-Bromofluorobenzene	26.300		25.00		105	76	119		0		
Surr: Dibromofluoromethane	24.480		25.00		97.9	85	115		0		
Surr: Toluene-d8	25.690		25.00		103	81	120		0		

Qualifiers:

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|--|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | ND Not Detected at the Reporting Limit | R RPD outside accepted recovery limits |
| S Spike/Surrogate outside of limits due to matrix interference | DO Surrogate Diluted Out | Calculations are based on raw values |

CLIENT: CH2MHill
Work Order: N023124
Project: KMEP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270_W_SIMPGE

Sample ID	LCS-61275	SampType: LCS	TestCode: 8270_W_SIM	Units: ug/L	Prep Date: 2/16/2017	RunNo: 113565					
Client ID:	LCSW	Batch ID:	61275	TestNo:	EPA 8270CSI EPA 3510C	Analysis Date:	2/16/2017	SeqNo:	2569019		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1-Methylnaphthalene	0.750	0.20	1.000	0	75.0	35	131				
2-Methylnaphthalene	0.780	0.20	1.000	0	78.0	36	121				
Acenaphthene	0.800	0.20	1.000	0	80.0	39	125				
Acenaphthylene	0.810	0.20	1.000	0	81.0	43	140				
Anthracene	0.720	0.20	1.000	0	72.0	41	132				
Benzo(a)anthracene	0.960	0.20	1.000	0	96.0	58	141				
Benzo(a)pyrene	0.820	0.20	1.000	0	82.0	31	142				
Benzo(b)fluoranthene	0.950	0.20	1.000	0	95.0	42	156				
Benzo(g,h,i)perylene	0.760	0.20	1.000	0	76.0	12	171				
Benzo(k)fluoranthene	0.730	0.20	1.000	0	73.0	49	165				
Chrysene	0.760	0.20	1.000	0	76.0	51	155				
Dibenz(a,h)anthracene	0.820	0.20	1.000	0	82.0	28	153				
Fluoranthene	0.870	0.20	1.000	0	87.0	47	158				
Fluorene	0.850	0.20	1.000	0	85.0	40	140				
Indeno(1,2,3-cd)pyrene	0.810	0.20	1.000	0	81.0	20	167				
Naphthalene	0.710	0.20	1.000	0	71.0	39	125				
Phenanthrene	0.890	0.20	1.000	0	89.0	46	144				
Pyrene	0.870	0.20	1.000	0	87.0	39	158				
Surr: 1,2-Dichlorobenzene-d4	0.590		1.000		59.0	27	100				
Surr: 2-Fluorobiphenyl	0.620		1.000		62.0	34	135				
Surr: 4-Terphenyl-d14	0.670		1.000		67.0	34	167				
Surr: Nitrobenzene-d5	0.540		1.000		54.0	25	135				

Sample ID	LCSD-61275	SampType: LCSD	TestCode: 8270_W_SIM	Units: ug/L	Prep Date: 2/16/2017	RunNo: 113565					
Client ID:	LCSS02	Batch ID:	61275	TestNo:	EPA 8270CSI EPA 3510C	Analysis Date:	2/16/2017	SeqNo:	2569020		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1-Methylnaphthalene	0.680	0.20	1.000	0	68.0	35	131	0.7500	9.79	30	
2-Methylnaphthalene	0.700	0.20	1.000	0	70.0	36	121	0.7800	10.8	30	
Acenaphthene	0.720	0.20	1.000	0	72.0	39	125	0.8000	10.5	30	

Qualifiers:

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| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | ND Not Detected at the Reporting Limit | R RPD outside accepted recovery limits |
| S Spike/Surrogate outside of limits due to matrix interference | DO Surrogate Diluted Out | Calculations are based on raw values |

CLIENT: CH2MHill
Work Order: N023124
Project: KMEP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270_W_SIMPGE

Sample ID	LCSD-61275	SampType: LCSD	TestCode: 8270_W_SIM Units: ug/L				Prep Date: 2/16/2017				RunNo: 113565	
Client ID:	LCSS02	Batch ID: 61275	TestNo: EPA 8270CSI EPA 3510C				Analysis Date: 2/16/2017				SeqNo: 2569020	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Acenaphthylene	0.750	0.20	1.000	0	75.0	43	140	0.8100	7.69	30		
Anthracene	0.670	0.20	1.000	0	67.0	41	132	0.7200	7.19	30		
Benzo(a)anthracene	0.900	0.20	1.000	0	90.0	58	141	0.9600	6.45	30		
Benzo(a)pyrene	0.770	0.20	1.000	0	77.0	31	142	0.8200	6.29	30		
Benzo(b)fluoranthene	0.880	0.20	1.000	0	88.0	42	156	0.9500	7.65	30		
Benzo(g,h,i)perylene	0.700	0.20	1.000	0	70.0	12	171	0.7600	8.22	30		
Benzo(k)fluoranthene	0.700	0.20	1.000	0	70.0	49	165	0.7300	4.20	30		
Chrysene	0.780	0.20	1.000	0	78.0	51	155	0.7600	2.60	30		
Dibenz(a,h)anthracene	0.760	0.20	1.000	0	76.0	28	153	0.8200	7.59	30		
Fluoranthene	0.850	0.20	1.000	0	85.0	47	158	0.8700	2.33	30		
Fluorene	0.770	0.20	1.000	0	77.0	40	140	0.8500	9.88	30		
Indeno(1,2,3-cd)pyrene	0.750	0.20	1.000	0	75.0	20	167	0.8100	7.69	30		
Naphthalene	0.640	0.20	1.000	0	64.0	39	125	0.7100	10.4	30		
Phenanthrene	0.830	0.20	1.000	0	83.0	46	144	0.8900	6.98	30		
Pyrene	0.830	0.20	1.000	0	83.0	39	158	0.8700	4.71	30		
Surr: 1,2-Dichlorobenzene-d4	0.540		1.000		54.0	27	100		0			
Surr: 2-Fluorobiphenyl	0.570		1.000		57.0	34	135		0			
Surr: 4-Terphenyl-d14	0.640		1.000		64.0	34	167		0			
Surr: Nitrobenzene-d5	0.510		1.000		51.0	25	135		0			

Sample ID	MB-61275	SampType: MBLK	TestCode: 8270_W_SIM Units: ug/L				Prep Date: 2/16/2017				RunNo: 113565	
Client ID:	PBW	Batch ID: 61275	TestNo: EPA 8270CSI EPA 3510C				Analysis Date: 2/16/2017				SeqNo: 2569021	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
1-Methylnaphthalene	ND	0.20										
2-Methylnaphthalene	ND	0.20										
Acenaphthene	ND	0.20										
Acenaphthylene	ND	0.20										
Anthracene	ND	0.20										
Benzo(a)anthracene	0.020	0.20									J	

Qualifiers:

- | | | |
|--|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | ND Not Detected at the Reporting Limit | R RPD outside accepted recovery limits |
| S Spike/Surrogate outside of limits due to matrix interference | DO Surrogate Diluted Out | Calculations are based on raw values |

CLIENT: CH2MHill
Work Order: N023124
Project: KMEP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270_W_SIMPGE

Sample ID	SampType	TestCode	Units	Prep Date	RunNo						
MB-61275	MBLK	8270_W_SIM	ug/L	2/16/2017	113565						
Client ID: PBW	Batch ID: 61275	TestNo: EPA 8270CSI EPA 3510C		Analysis Date: 2/16/2017	SeqNo: 2569021						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene	ND	0.20									
Benzo(b)fluoranthene	ND	0.20									
Benzo(g,h,i)perylene	ND	0.20									
Benzo(k)fluoranthene	ND	0.20									
Chrysene	ND	0.20									
Dibenz(a,h)anthracene	ND	0.20									
Fluoranthene	0.040	0.20									J
Fluorene	ND	0.20									
Indeno(1,2,3-cd)pyrene	ND	0.20									
Naphthalene	ND	0.20									
Phenanthrene	0.040	0.20									J
Pyrene	0.020	0.20									J
Surr: 1,2-Dichlorobenzene-d4	0.430		1.000		43.0	27	100				
Surr: 2-Fluorobiphenyl	0.510		1.000		51.0	34	135				
Surr: 4-Terphenyl-d14	0.650		1.000		65.0	34	167				
Surr: Nitrobenzene-d5	0.450		1.000		45.0	25	135				

Qualifiers:

- | | | |
|--|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | ND Not Detected at the Reporting Limit | R RPD outside accepted recovery limits |
| S Spike/Surrogate outside of limits due to matrix interference | DO Surrogate Diluted Out | Calculations are based on raw values |

CHAIN OF CUSTODY RECORD

Contact us:
 Nevada: 3151 W. Post Road, Las Vegas, NV 89118
 P: 702.307.2659 F: 702.307.2691
 California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
 P: 562.219.7435 F: 562.219.7436
www.assetlaboratories.com

Page 1 of 1

Client: CH2M Hill Address: 6 Hutton Centre Drive Suite 700 Santa Ana, CA 92707 Submitted By: Matt Mayry Hydrogeologist	Report to: Daniel Jablonski Company: CH2M Hill Email: daniel.jablonski@ch2m.com Address: 6 Hutton Centre Drive 700 Santa Ana, CA 92707 Phone: 913-288-8911 Fax:	Bill to: Address: Email to: Phone: Fax:	EDD Requirement: Excel EDD <input type="checkbox"/> Geotracker <input type="checkbox"/> Labspec <input type="checkbox"/> Others <input type="checkbox"/> 1 Spills <input type="checkbox"/> Global ID <input type="checkbox"/>	QA/QC: RINF <input type="checkbox"/> RWOCB <input type="checkbox"/> CalTrans <input type="checkbox"/> Level III <input type="checkbox"/> LEVEL IV <input type="checkbox"/> Regulatory <input type="checkbox"/> Specify State:	Sample Receipt Condition: 1. Certified <input checked="" type="checkbox"/> Y <input type="checkbox"/> N 2. Headspace <input type="checkbox"/> 3. Container sealed <input checked="" type="checkbox"/> 4. Seal Present <input type="checkbox"/> <input checked="" type="checkbox"/> 5. IR number <input type="checkbox"/> 2 6. Method of Cooling <input type="checkbox"/> Sample Temp. 2.3°C / 2.1°C
Matrix: Ground <input type="checkbox"/> Sediment <input type="checkbox"/> Potable <input type="checkbox"/> Soil <input checked="" type="checkbox"/> NPDES <input type="checkbox"/> Other Solid <input type="checkbox"/> Surface <input type="checkbox"/> MARK X	Analyses Requested: TPH (C4-C14) <input checked="" type="checkbox"/> TPH (C15-C24) <input checked="" type="checkbox"/> TPH (C25-C40) <input checked="" type="checkbox"/> VOCs SVOC <input checked="" type="checkbox"/> PAHs	Sampled By: Steven Sanchez 11/14/17 (Initials for visibility and accountability of this sample. Each worker has timestamp with or without noting the sample location, date of time of collection is considered final and may be grounds for legal action.) Signature: Steven Sanchez Date: 11/14/17	Turn Around Time (TAT): <input type="checkbox"/> A - 24 Hrs or Same Day TAT <input type="checkbox"/> B - Next Workday <input type="checkbox"/> C - 2 Workdays <input type="checkbox"/> D - 3 Workdays <input type="checkbox"/> E - Routine 5-7 Workdays TAT Starts at 8 AM the following day if samples received after 3:00 PM.	Special Instruction:	

JM No.	Laboratory Work Order No.	Sample ID/Location	Date	Time	Water	Solid	Others	Remarks
1	N023124-01	SVM-08-4.5	11/14/17	0935		6		XXXXX
2	-02	SVM-08-4.5		0940				
3	-03	SVM-08-4.5		1100				
4	-04	SVM-08-4.5		1105				
5	-05	SVM-08-4.5		1115				
6	-06	SVM-08-4.5		1330				
7	-07	SVM-08-4.5		1425				
8	-08	SVM-08-4.5		0800		6		XXXXX
9	-09	SVM-20-4.5	2/15/17	0800		6		XXXXX
10	-10	SVM-20-9.5		0815				XXXXX
11	EB-1	SB-13-4.5		0905	8			XXXXXX
12	SB-13-4.5	SB-13-4.5		0945		6		XXXXX
13	SB-13-4.5	SB-13-4.5		0955				XXXXX

Quoted by (Signature and Printed Name): Matt Mayry / CH2M Date / Time: 2-15-17 14:10	Received by (Signature and Printed Name): Murphy A. Date / Time: 2-15-17 14:10	Turn Around Time (TAT): <input type="checkbox"/> A - 24 Hrs or Same Day TAT <input type="checkbox"/> B - Next Workday <input type="checkbox"/> C - 2 Workdays <input type="checkbox"/> D - 3 Workdays <input type="checkbox"/> E - Routine 5-7 Workdays TAT Starts at 8 AM the following day if samples received after 3:00 PM.	Special Instruction:
Quoted by (Signature and Printed Name): [Signature] Date / Time: 2-15-17 16:00	Received by (Signature and Printed Name): [Signature] Date / Time: 2/16/17 8:10		

18. Samples will be stored in 4°C coolers upon receipt and return will be attempted on the next business day unless otherwise specified. (TAT is 5 business days, see charges will apply for next analysis.)
 19. For analytical results, see charges will apply for next analysis.
 20. For analytical results, see charges will apply for next analysis.
 21. For analytical results, see charges will apply for next analysis.
 22. For analytical results, see charges will apply for next analysis.
 23. For analytical results, see charges will apply for next analysis.
 24. For analytical results, see charges will apply for next analysis.

White = Laboratory Copy
 Yellow = Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On: 2/15/2017 Workorder: N023124
 Rep sample Temp (Deg C): 2.3/2.1 IR Gun ID: 2
 Temp Blank: Yes No
 Carrier name: Golden State Overnight
 Last 4 digits of Tracking No.: 1128/1130 Packing Material Used: None
 Cooling process: Ice Ice Pack Dry Ice Other None

Sample Receipt Checklist

- | | | | |
|---|--|--|--|
| 1. Shipping container/cooler in good condition? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/> |
| 2. Custody seals intact, signed, dated on shipping container/cooler? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| 3. Custody seals intact on sample bottles? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| 4. Chain of custody present? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 5. Sampler's name present in COC? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 6. Chain of custody signed when relinquished and received? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 7. Chain of custody agrees with sample labels? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 8. Samples in proper container/bottle? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 9. Sample containers intact? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 10. Sufficient sample volume for indicated test? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 11. All samples received within holding time? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 12. Temperature of rep sample or Temp Blank within acceptable limit? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | NA <input type="checkbox"/> |
| 13. Water - VOA vials have zero headspace? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | NA <input type="checkbox"/> |
| 14. Water - pH acceptable upon receipt?
Example: pH > 12 for (CN,S); pH<2 for Metals | Yes <input type="checkbox"/> | No <input type="checkbox"/> | NA <input checked="" type="checkbox"/> |
| 15. Did the bottle labels indicate correct preservatives used? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | NA <input type="checkbox"/> |
| 16. Were there Non-Conformance issues at login?
Was Client notified? | Yes <input type="checkbox"/>
Yes <input type="checkbox"/> | No <input type="checkbox"/>
No <input type="checkbox"/> | NA <input checked="" type="checkbox"/>
NA <input checked="" type="checkbox"/> |

Comments:

Checklist Completed By: YR YB 2/17/2017

Reviewed By: 2 2/22/2017

quennie@assetlaboratories.com

From: Marlon Cartin [marlon@assetlaboratories.com]
Sent: Wednesday, February 22, 2017 9:44 AM
To: quennie@assetlaboratories.com
Cc: nancy@assetlaboratories.com
Subject: FW: Soil Wet Versus Dry Weight

Forwarding.

Marlon Cartin

Project Manager - ASSET Laboratories

California: 11060 Artesia Blvd., Ste. C, Cerritos, CA 90703 | P: 562.219.7435 | F: 562.219.7436

Nevada: 3151 W. Post Road, Las Vegas, NV 89118 | P: 702.307.2659 Ext. 410 | F: 702.307.2691 | M: 702.439.0421

From: Daniel.Jablonski@CH2M.com [<mailto:Daniel.Jablonski@CH2M.com>]
Sent: Tuesday, February 21, 2017 5:25 PM
To: marlon@assetlaboratories.com
Subject: RE: Soil Wet Versus Dry Weight

Yes, just wet weight is fine.
No need for dry weight

Daniel Jablonski
Project Manager
D 213.228.8271
M 818.257.3630

CH2M

Los Angeles, California (Teleworker)

www.ch2m.com | [LinkedIn](#) | [Twitter](#) | [Facebook](#)

From: Marlon Cartin [<mailto:marlon@assetlaboratories.com>]
Sent: Tuesday, February 21, 2017 3:59 PM
To: Jablonski, Daniel/LAC <Daniel.Jablonski@CH2M.com>
Subject: RE: Soil Wet Versus Dry Weight [EXTERNAL]

So wet weight result is good enough for now?

Marlon Cartin

Project Manager - ASSET Laboratories

California: 11060 Artesia Blvd., Ste. C, Cerritos, CA 90703 | P: 562.219.7435 | F: 562.219.7436

Nevada: 3151 W. Post Road, Las Vegas, NV 89118 | P: 702.307.2659 Ext. 410 | F: 702.307.2691 | M: 702.439.0421

From: Daniel.Jablonski@CH2M.com [<mailto:Daniel.Jablonski@CH2M.com>]
Sent: Tuesday, February 21, 2017 3:13 PM
To: marlon@assetlaboratories.com
Subject: RE: Soil Wet Versus Dry Weight

Actually, I just confirmed the other PRP at Norwalk is using wet weight basis so I'm fine with that for both COCs.

Daniel Jablonski
Project Manager

D 213.228.8271
M 818.257.3630

CH2M

Los Angeles, California (Teleworker)
www.ch2m.com | [LinkedIn](#) | [Twitter](#) | [Facebook](#)

From: Jablonski, Daniel/LAC
Sent: Tuesday, February 21, 2017 3:08 PM
To: 'Marlon B. Cartin' <marlon@assetlaboratories.com>
Subject: RE: Soil Wet Versus Dry Weight [EXTERNAL]

It would be good to provide 2 reports for each COC.
One dry weight and one wet weight.

Daniel Jablonski
Project Manager
D 213.228.8271
M 818.257.3630

CH2M

Los Angeles, California (Teleworker)
www.ch2m.com | [LinkedIn](#) | [Twitter](#) | [Facebook](#)

From: Marlon B. Cartin [<mailto:marlon@assetlaboratories.com>]
Sent: Tuesday, February 21, 2017 3:05 PM
To: Jablonski, Daniel/LAC <Daniel.Jablonski@CH2M.com>
Subject: FW: Soil Wet Versus Dry Weight [EXTERNAL]

Hi Dan,

Do you still need a dry-wt basis results?

Thanks,

Marlon B. Cartin
Project Manager
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 Ext. 410 | F: 702.307.2691 | M: 702.439.0421

From: John.Lowe@CH2M.com [<mailto:John.Lowe@CH2M.com>]
Sent: Tuesday, February 21, 2017 5:51 AM
To: Daniel.Jablonski@CH2M.com; Mark.Fesler@CH2M.com
Cc: marlon@assetlaboratories.com; Benny.Pataray@CH2M.com
Subject: RE: Soil Wet Versus Dry Weight

I've seen different opinions about the weight basis for reporting soil analytical results. Some prefer reporting soil concentrations on a dry soil basis because it's standardized. For me, as long as I know the weight basis, I can work with soil results reported as either dry- or wet-weight. If we're also analyzing for other physical parameters such as bulk density, that's measured on a dry-weight basis. If we have moisture contents reported for each sample, we can calculate dry-weight concentrations ourselves, if that's needed. However, I can work with wet-weight soil results.

From: Jablonski, Daniel/LAC
Sent: Monday, February 20, 2017 3:30 PM
To: Fesler, Mark/RDD <Mark.Fesler@CH2M.com>; Lowe, John/SPK <John.Lowe@CH2M.com>
Cc: Marlon Cartin (marlon@assetlaboratories.com) <marlon@assetlaboratories.com>; Pataray, Benny/SLC <Benny.Pataray@CH2M.com>
Subject: Soil Wet Versus Dry Weight
Importance: High

Mark, John:

It seems we have not been consistent with reporting soil results as wet versus dry weight basis for comparison of data with the Norwalk soil clean up goals and CHHSLs.

I assume wet weight is the one that we want for risk analysis. Can you please confirm?

Thanks,

Daniel Jablonski
Project Manager
D 213.228.8271
M 818.257.3630

CH2M
Los Angeles, California (Teleworker)
www.ch2m.com | [LinkedIn](#) | [Twitter](#) | [Facebook](#)



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www.avast.com

ASSET Laboratories

WORK ORDER Summary

17-Feb-17

WorkOrder: N023124

Client ID: CH2HI03

Project: KMEP Norwalk

QC Level: RTNE

Date Received: 2/15/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N023124-001A	SVM-23-4.5	2/14/2017 9:25:00 AM	2/22/2017	Soil	EPA 5035	Closed System Purge and Trap	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VS
			2/22/2017		EPA 8260B	VOLATILE ORGANIC COMPOUNDS BY GC/MS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VS
N023124-001B			2/22/2017		EPA 5035	Closed System Purge and Trap	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VS
			2/22/2017		EPA 8015B(M)	GASOLINE RANGE ORGANICS BY GC/FID	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VS
N023124-001C							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VS
N023124-001D							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VS
N023124-001E							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VS
N023124-001F			2/22/2017		EPA 3550B	ULTRASONIC EXTRACTION: EXTRACTABLE FUELS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WS
			2/22/2017		EPA 8015B	DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WS
			2/22/2017		D2216	PERCENT MOISTURE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WS
N023124-002A	SVM-23-9.5	2/14/2017 9:40:00 AM	2/22/2017		EPA 5035	Closed System Purge and Trap	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VS
			2/22/2017		EPA 8260B	VOLATILE ORGANIC COMPOUNDS BY GC/MS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VS
N023124-002B			2/22/2017		EPA 5035	Closed System Purge and Trap	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VS
			2/22/2017		EPA 8015B(M)	GASOLINE RANGE ORGANICS BY GC/FID	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VS
N023124-002C							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VS
N023124-002D							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VS
N023124-002E							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VS
N023124-002F			2/22/2017		EPA 3550B	ULTRASONIC EXTRACTION: EXTRACTABLE FUELS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WS
			2/22/2017		EPA 8015B	DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WS
			2/22/2017		D2216	PERCENT MOISTURE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WS

ASSET Laboratories

WORK ORDER Summary

17-Feb-17

WorkOrder: N023124

Client ID: CH2HI03

Project: KMEP Norwalk

QC Level: RTNE

Date Received: 2/15/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N023124-003A	SVM-22-4.5	2/14/2017 11:00:00 AM	2/22/2017	Soil	EPA 5035	Closed System Purge and Trap	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VS
			2/22/2017		EPA 8260B	VOLATILE ORGANIC COMPOUNDS BY GC/MS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VS
N023124-003B			2/22/2017		EPA 5035	Closed System Purge and Trap	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VS
			2/22/2017		EPA 8015B(M)	GASOLINE RANGE ORGANICS BY GC/FID	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VS
N023124-003C							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VS
N023124-003D							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VS
N023124-003E							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VS
N023124-003F			2/22/2017		EPA 3550B	ULTRASONIC EXTRACTION: EXTRACTABLE FUELS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WS
			2/22/2017		EPA 8015B	DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WS
			2/22/2017		D2216	PERCENT MOISTURE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WS
N023124-004A	DUP-1-4.5	2/14/2017 11:05:00 AM	2/22/2017		EPA 5035	Closed System Purge and Trap	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VS
			2/22/2017		EPA 8260B	VOLATILE ORGANIC COMPOUNDS BY GC/MS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VS
N023124-004B			2/22/2017		EPA 5035	Closed System Purge and Trap	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VS
			2/22/2017		EPA 8015B(M)	GASOLINE RANGE ORGANICS BY GC/FID	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VS
N023124-004C							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VS
N023124-004D							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VS
N023124-004E							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VS
N023124-004F			2/22/2017		EPA 3550B	ULTRASONIC EXTRACTION: EXTRACTABLE FUELS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WS
			2/22/2017		EPA 8015B	DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WS
			2/22/2017		D2216	PERCENT MOISTURE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WS

ASSET Laboratories

WORK ORDER Summary

17-Feb-17

WorkOrder: N023124

Client ID: CH2HI03

Project: KMEP Norwalk

QC Level: RTNE

Date Received: 2/15/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N023124-005A	SVM-22-9.5	2/14/2017 11:15:00 AM	2/22/2017	Soil	EPA 5035	Closed System Purge and Trap	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VS
			2/22/2017		EPA 8260B	VOLATILE ORGANIC COMPOUNDS BY GC/MS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VS
N023124-005B			2/22/2017		EPA 5035	Closed System Purge and Trap	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VS
			2/22/2017		EPA 8015B(M)	GASOLINE RANGE ORGANICS BY GC/FID	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VS
N023124-005C							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VS
N023124-005D							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VS
N023124-005E							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VS
N023124-005F			2/22/2017		EPA 3550B	ULTRASONIC EXTRACTION: EXTRACTABLE FUELS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WS
			2/22/2017		EPA 8015B	DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WS
			2/22/2017		D2216	PERCENT MOISTURE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WS
N023124-006A	SVM-21-4.5	2/14/2017 1:20:00 PM	2/22/2017		EPA 5035	Closed System Purge and Trap	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VS
			2/22/2017		EPA 8260B	VOLATILE ORGANIC COMPOUNDS BY GC/MS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VS
N023124-006B			2/22/2017		EPA 5035	Closed System Purge and Trap	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VS
			2/22/2017		EPA 8015B(M)	GASOLINE RANGE ORGANICS BY GC/FID	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VS
N023124-006C							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VS
N023124-006D							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VS
N023124-006E							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VS
N023124-006F			2/22/2017		EPA 3550B	ULTRASONIC EXTRACTION: EXTRACTABLE FUELS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WS
			2/22/2017		EPA 8015B	DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WS
			2/22/2017		D2216	PERCENT MOISTURE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WS

ASSET Laboratories

WORK ORDER Summary

17-Feb-17

WorkOrder: N023124

Client ID: CH2HI03

Project: KMEP Norwalk

QC Level: RTNE

Date Received: 2/15/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N023124-007A	SVM-21-9.5	2/14/2017 2:25:00 PM	2/22/2017	Soil	EPA 5035	Closed System Purge and Trap	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VS
			2/22/2017		EPA 8260B	VOLATILE ORGANIC COMPOUNDS BY GC/MS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VS
N023124-007B			2/22/2017		EPA 5035	Closed System Purge and Trap	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VS
			2/22/2017		EPA 8015B(M)	GASOLINE RANGE ORGANICS BY GC/FID	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VS
N023124-007C							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VS
N023124-007D							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VS
N023124-007E							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VS
N023124-007F			2/22/2017		EPA 3550B	ULTRASONIC EXTRACTION: EXTRACTABLE FUELS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WS
			2/22/2017		EPA 8015B	DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WS
			2/22/2017		D2216	PERCENT MOISTURE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WS
N023124-008A	SVM-20-4.5	2/15/2017 8:00:00 AM	2/22/2017		EPA 5035	Closed System Purge and Trap	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VS
			2/22/2017		EPA 8260B	VOLATILE ORGANIC COMPOUNDS BY GC/MS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VS
N023124-008B			2/22/2017		EPA 5035	Closed System Purge and Trap	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VS
			2/22/2017		EPA 8015B(M)	GASOLINE RANGE ORGANICS BY GC/FID	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VS
N023124-008C							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VS
N023124-008D							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VS
N023124-008E							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VS
N023124-008F			2/22/2017		EPA 3550B	ULTRASONIC EXTRACTION: EXTRACTABLE FUELS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WS
			2/22/2017		EPA 8015B	DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WS
			2/22/2017		D2216	PERCENT MOISTURE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WS

ASSET Laboratories

WORK ORDER Summary

17-Feb-17

WorkOrder: N023124

Client ID: CH2HI03

Project: KMEP Norwalk

QC Level: RTNE

Date Received: 2/15/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N023124-009A	SVM-20-9.5	2/15/2017 8:15:00 AM	2/22/2017	Soil	EPA 5035	Closed System Purge and Trap	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VS
			2/22/2017		EPA 8260B	VOLATILE ORGANIC COMPOUNDS BY GC/MS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VS
N023124-009B			2/22/2017		EPA 5035	Closed System Purge and Trap	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VS
			2/22/2017		EPA 8015B(M)	GASOLINE RANGE ORGANICS BY GC/FID	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VS
N023124-009C							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VS
N023124-009D							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VS
N023124-009E							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VS
N023124-009F			2/22/2017		EPA 3550B	ULTRASONIC EXTRACTION: EXTRACTABLE FUELS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WS
			2/22/2017		EPA 8015B	DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WS
			2/22/2017		D2216	PERCENT MOISTURE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WS
N023124-010A	EB-1	2/15/2017 9:05:00 AM	2/22/2017	Water	EPA 8015B	GASOLINE RANGE ORGANICS BY GC/FID	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VW
			2/22/2017		EPA 8260B	VOLATILE ORGANIC COMPOUNDS BY GC/MS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VW
N023124-010B			2/22/2017		EPA 3510C	SEPARATORY FUNNEL EXTRACTION: EXTRACTABLE FUELS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			2/22/2017		EPA 8015B	TPH EXTRACTABLE BY GC/FID	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			2/22/2017		EPA 8015B	Total TPH	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N023124-010C			2/22/2017		EPA 3510C	SEPARATORY FUNNEL EXTRACTION: 8270C - SIM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	MDM
			2/22/2017		EPA 8270CSIM	SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS-SIM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	MDM
N023124-011A	FOLDER	2/22/2017	2/22/2017	Folder	Folder	Folder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LAB

2/15/2017



800-322-5555 www.gso.com

Ship From
ASSET LABORATORIES
MOLKY BRAR
11110 ARTESIA BLVD. SUITE B
CERRITOS, CA 90703

Tracking #: 535061128

CPS



Ship To
ATL INC
MARLON CARTIN
3151 W. POST RD.,
LAS VEGAS, NV 89118

LVS
LAS VEGAS

A

COD: \$0.00
Weight: 0 lb(s)
Reference:

C89102A

Delivery Instructions:
HOLD FOR PICK UP
Signature Type: REQUIRED



62926525

Print Date: 2/15/2017 5:27 PM

Package 1 of 3

LABEL INSTRUCTIONS:

Do not copy or reprint this label for additional shipments - each package must have a unique barcode.

Use the "Print Label" button on this page to print the shipping label on a laser or inkjet printer. Securely attach this label to your package, do not cover the barcode.

2,3⁰⁰
LP # 2



800-322-5555 www.gso.com

Ship From
ASSET LABORATORIES
MOLKY BRAR
11110 ARTESIA BLVD. SUITE B
CERRITOS, CA 90703

Tracking #: 535061130

CPS



Ship To
ATL INC
MARLON CARTIN
3151 W. POST RD.,
LAS VEGAS, NV 89118

LVS
LAS VEGAS

A

COD: \$0.00
Weight: 0 lb(s)
Reference:

C89102A

Delivery Instructions:
HOLD FOR PICK UP
Signature Type: REQUIRED



62926527

Print Date: 2/15/2017 5:27 PM

Package 3 of 3

LABEL INSTRUCTIONS:

Do not copy or reprint this label for additional shipments - each package must have a unique barcode.

Use the "Print Label" button on this page to print the shipping label on a laser or inkjet printer. Securely attach this label to your package, do not cover the barcode.

21cc
JL# 2

Attachment E
Laboratory Analytical Report for
Soil Vapor



9765 Eton Avenue
Chatsworth
California 91311
Tel: (818) 998-5547
Fax: (818) 998-7258

March 01, 2017

Dan Jablonski
CH2M Hill, Inc.
1000 Wilshire Blvd., Suite 2100
Los Angeles, CA 90017-2457

Re : KMEP Norwalk Biosparge Startup / 496965.A1.01
MB187313 / 7B24005

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received on 02/24/17 12:34 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Assurance Program Manual, applicable standard operating procedures, and other related documentation. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report or require additional information please call me at American Analyticals.

Sincerely,

A handwritten signature in cursive script, appearing to read 'Allen A.', written in black ink.

Allen Aminian
QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 496965.A1.01
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187313
Date Received: 02/24/17
Date Reported: 03/01/17

Sample ID	Laboratory ID	Matrix	TAT	Date Sampled	Date Received
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TO-15 (Mid Level)

SVM-20-5	7B24005-01	Vapor	3	02/24/17 08:29	02/24/17 12:34
SVM-20-10	7B24005-02	Vapor	3	02/24/17 08:32	02/24/17 12:34
SVM-21-5	7B24005-03	Vapor	3	02/24/17 08:37	02/24/17 12:34
SVM-21-10	7B24005-04	Vapor	3	02/24/17 08:43	02/24/17 12:34
SVM-22-5	7B24005-05	Vapor	3	02/24/17 09:43	02/24/17 12:34
SVM-22-10	7B24005-06	Vapor	3	02/24/17 09:59	02/24/17 12:34
SVM-22-10 DUP	7B24005-07	Vapor	3	02/24/17 09:59	02/24/17 12:34
SVM-23-5	7B24005-08	Vapor	3	02/24/17 10:01	02/24/17 12:34
SVM-23-10	7B24005-09	Vapor	3	02/24/17 10:01	02/24/17 12:34

TO-3

SVM-20-5	7B24005-01	Vapor	3	02/24/17 08:29	02/24/17 12:34
SVM-20-10	7B24005-02	Vapor	3	02/24/17 08:32	02/24/17 12:34
SVM-21-5	7B24005-03	Vapor	3	02/24/17 08:37	02/24/17 12:34
SVM-21-10	7B24005-04	Vapor	3	02/24/17 08:43	02/24/17 12:34
SVM-22-5	7B24005-05	Vapor	3	02/24/17 09:43	02/24/17 12:34
SVM-22-10	7B24005-06	Vapor	3	02/24/17 09:59	02/24/17 12:34
SVM-22-10 DUP	7B24005-07	Vapor	3	02/24/17 09:59	02/24/17 12:34
SVM-23-5	7B24005-08	Vapor	3	02/24/17 10:01	02/24/17 12:34

Allen Aminian
QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 496965.A1.01
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187313
Date Received: 02/24/17
Date Reported: 03/01/17

Sample ID	Laboratory ID	Matrix	TAT	Date Sampled	Date Received
SVM-23-10	7B24005-09	Vapor	3	02/24/17 10:01	02/24/17 12:34

Allen Aminian
QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 496965.A1.01
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187313
Date Received: 02/24/17
Date Reported: 03/01/17

ANALYTICAL DATA SUMMARY

Analyte	Sample Name	Result	MRL	Units	Dilution	Prepared	Analyzed	Method
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VOCs by EPA TO-3

VOCs by GCMS EPA TO-15

Tetrachloroethylene (PCE)	SVM-21-5	0.037	0.020	ug/L	1	02/27/17	02/27/17	TO-15
Tetrachloroethylene (PCE)	SVM-21-10	0.052	0.020	ug/L	1	02/27/17	02/27/17	TO-15
Tetrachloroethylene (PCE)	SVM-22-5	0.021	0.020	ug/L	1	02/27/17	02/27/17	TO-15
Tetrachloroethylene (PCE)	SVM-22-10	0.022	0.020	ug/L	1	02/27/17	02/27/17	TO-15
Tetrachloroethylene (PCE)	SVM-22-10 DUP	0.023	0.020	ug/L	1	02/27/17	02/27/17	TO-15
Cyclohexane	SVM-23-5	0.063	0.020	ug/L	1	02/27/17	02/27/17	TO-15
Tetrachloroethylene (PCE)	SVM-23-5	0.028	0.020	ug/L	1	02/27/17	02/27/17	TO-15
2,2,4-Trimethylpentane	SVM-23-5	0.44	0.020	ug/L	1	02/27/17	02/27/17	TO-15
Cyclohexane	SVM-23-10	0.26	0.020	ug/L	1	02/27/17	02/27/17	TO-15
Tetrachloroethylene (PCE)	SVM-23-10	0.045	0.020	ug/L	1	02/27/17	02/27/17	TO-15
2,2,4-Trimethylpentane	SVM-23-10	3.0	0.20	ug/L	10	02/27/17	02/27/17	TO-15

Allen Aminian
QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 496965.A1.01
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by EPA TO-3

AA Project No: MB187313
Date Received: 02/24/17
Date Reported: 03/01/17
Units: ug/L

Date Sampled:	02/24/17	02/24/17	02/24/17	02/24/17	
Date Prepared:	02/27/17	02/27/17	02/27/17	02/27/17	
Date Analyzed:	02/27/17	02/27/17	02/27/17	02/27/17	
AA ID No:	7B24005-01	7B24005-02	7B24005-03	7B24005-04	
Client ID No:	SVM-20-5	SVM-20-10	SVM-21-5	SVM-21-10	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL

TO-3 (TO-3)

Gasoline Range Organics (GRO)	<20	<20	<20	<20	20
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Surrogates

4-Bromofluorobenzene	94%	95%	92%	97%	<u>%REC Limits</u> 70-130
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Allen Aminian
 QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 496965.A1.01
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by EPA TO-3

AA Project No: MB187313
Date Received: 02/24/17
Date Reported: 03/01/17
Units: ug/L

Date Sampled:	02/24/17	02/24/17	02/24/17	02/24/17	
Date Prepared:	02/27/17	02/27/17	02/27/17	02/27/17	
Date Analyzed:	02/27/17	02/27/17	02/27/17	02/27/17	
AA ID No:	7B24005-05	7B24005-06	7B24005-07	7B24005-08	
Client ID No:	SVM-22-5	SVM-22-10	SVM-22-10 DUP	SVM-23-5	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL

TO-3 (TO-3)

Gasoline Range Organics (GRO)	<20	<20	<20	<20	20
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Surrogates

4-Bromofluorobenzene	94%	94%	93%	94%	<u>%REC Limits</u> 70-130
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Allen Aminian
 QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 496965.A1.01
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by EPA TO-3

AA Project No: MB187313
Date Received: 02/24/17
Date Reported: 03/01/17
Units: ug/L

Date Sampled:	02/24/17	
Date Prepared:	02/27/17	
Date Analyzed:	02/28/17	
AA ID No:	7B24005-09	
Client ID No:	SVM-23-10	
Matrix:	Vapor	
Dilution Factor:	1	MRL

TO-3 (TO-3)

Gasoline Range Organics (GRO)	<20	20
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Surrogates

4-Bromofluorobenzene	97%	<u>%REC Limits</u> 70-130
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Allen Aminian
QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 496965.A1.01
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by GCMS EPA TO-15

AA Project No: MB187313
Date Received: 02/24/17
Date Reported: 03/01/17
Units: ug/L

Date Sampled:	02/24/17	02/24/17	02/24/17	02/24/17	
Date Prepared:	02/27/17	02/27/17	02/27/17	02/27/17	
Date Analyzed:	02/27/17	02/27/17	02/27/17	02/27/17	
AA ID No:	7B24005-01	7B24005-02	7B24005-03	7B24005-04	
Client ID No:	SVM-20-5	SVM-20-10	SVM-21-5	SVM-21-10	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL

TO-15 (Mid Level) (TO-15)

Acetone	<0.020	<0.020	<0.020	<0.020	0.020
Allyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
tert-Amyl Methyl Ether (TAME)	<0.020	<0.020	<0.020	<0.020	0.020
Benzene	<0.020	<0.020	<0.020	<0.020	0.020
Benzyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
Bromodichloromethane	<0.020	<0.020	<0.020	<0.020	0.020
Bromoform	<0.020	<0.020	<0.020	<0.020	0.020
Bromomethane	<0.020	<0.020	<0.020	<0.020	0.020
1,3-Butadiene	<0.020	<0.020	<0.020	<0.020	0.020
2-Butanone (MEK)	<0.020	<0.020	<0.020	<0.020	0.020
tert-Butyl alcohol (TBA)	<20	<20	<20	<20	20
Carbon Disulfide	<0.020	<0.020	<0.020	<0.020	0.020
Carbon Tetrachloride	<0.020	<0.020	<0.020	<0.020	0.020
Chlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
Chloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Chloroform	<0.020	<0.020	<0.020	<0.020	0.020
Chloromethane	<0.020	<0.020	<0.020	<0.020	0.020
Cyclohexane	<0.020	<0.020	<0.020	<0.020	0.020
Dibromochloromethane	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dibromoethane (EDB)	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,3-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,4-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
Dichlorodifluoromethane (R12)	<0.020	<0.020	<0.020	<0.020	0.020
1,1-Dichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichloroethane (EDC)	<0.020	<0.020	<0.020	<0.020	0.020
cis-1,2-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020

Allen Aminian
 QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 496965.A1.01
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by GCMS EPA TO-15

AA Project No: MB187313
Date Received: 02/24/17
Date Reported: 03/01/17
Units: ug/L

Date Sampled:	02/24/17	02/24/17	02/24/17	02/24/17	
Date Prepared:	02/27/17	02/27/17	02/27/17	02/27/17	
Date Analyzed:	02/27/17	02/27/17	02/27/17	02/27/17	
AA ID No:	7B24005-01	7B24005-02	7B24005-03	7B24005-04	
Client ID No:	SVM-20-5	SVM-20-10	SVM-21-5	SVM-21-10	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL

TO-15 (Mid Level) (TO-15) (continued)

1,1-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020
trans-1,2-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichloropropane	<0.020	<0.020	<0.020	<0.020	0.020
trans-1,3-Dichloropropylene	<0.020	<0.020	<0.020	<0.020	0.020
cis-1,3-Dichloropropylene	<0.020	<0.020	<0.020	<0.020	0.020
Dichlorotetrafluoroethane	<0.020	<0.020	<0.020	<0.020	0.020
Diisopropyl ether (DIPE)	<0.020	<0.020	<0.020	<0.020	0.020
1,4-Dioxane	<0.020	<0.020	<0.020	<0.020	0.020
Ethanol	<0.020	<0.020	<0.020	<0.020	0.020
Ethyl Acetate	<0.020	<0.020	<0.020	<0.020	0.020
Ethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
Ethyl-tert-Butyl Ether (ETBE)	<0.020	<0.020	<0.020	<0.020	0.020
4-Ethyltoluene	<0.020	<0.020	<0.020	<0.020	0.020
Heptane	<0.020	<0.020	<0.020	<0.020	0.020
Hexachlorobutadiene	<0.020	<0.020	<0.020	<0.020	0.020
n-Hexane	<0.020	<0.020	<0.020	<0.020	0.020
2-Hexanone (MBK)	<0.020	<0.020	<0.020	<0.020	0.020
Isopropanol (IPA)	<0.20	<0.20	<0.20	<0.20	0.20
Methyl-tert-Butyl Ether (MTBE)	<0.020	<0.020	<0.020	<0.020	0.020
Methylene Chloride	<0.020	<0.020	<0.020	<0.020	0.020
4-Methyl-2-pentanone (MIBK)	<0.020	<0.020	<0.020	<0.020	0.020
Naphthalene	<0.020	<0.020	<0.020	<0.020	0.020
Propylene	<0.020	<0.020	<0.020	<0.020	0.020
Styrene	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2,2-Tetrachloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Tetrachloroethylene (PCE)	<0.020	<0.020	0.037	0.052	0.020
Tetrahydrofuran (THF)	<0.020	<0.020	<0.020	<0.020	0.020

Allen Aminian
 QA/QC Manager

**LABORATORY ANALYSIS RESULTS**

Client: CH2M Hill, Inc.
Project No: 496965.A1.01
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by GCMS EPA TO-15

AA Project No: MB187313
Date Received: 02/24/17
Date Reported: 03/01/17
Units: ug/L

Date Sampled:	02/24/17	02/24/17	02/24/17	02/24/17	
Date Prepared:	02/27/17	02/27/17	02/27/17	02/27/17	
Date Analyzed:	02/27/17	02/27/17	02/27/17	02/27/17	
AA ID No:	7B24005-01	7B24005-02	7B24005-03	7B24005-04	
Client ID No:	SVM-20-5	SVM-20-10	SVM-21-5	SVM-21-10	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL

TO-15 (Mid Level) (TO-15) (continued)

Toluene	<0.020	<0.020	<0.020	<0.020	0.020
1,2,4-Trichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2-Trichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
1,1,1-Trichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Trichloroethylene (TCE)	<0.020	<0.020	<0.020	<0.020	0.020
Trichlorofluoromethane (R11)	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<0.020	<0.020	<0.020	<0.020	0.020
1,3,5-Trimethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,2,4-Trimethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
2,2,4-Trimethylpentane	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl acetate	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl bromide	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
o-Xylene	<0.020	<0.020	<0.020	<0.020	0.020
m,p-Xylenes	<0.020	<0.020	<0.020	<0.020	0.020
1,1,1,2-Tetrachloroethane	<0.020	<0.020	<0.020	<0.020	0.020
1,2,3-Trichloropropane	<0.020	<0.020	<0.020	<0.020	0.020
sec-Butylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
Isopropylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
n-Propylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
4-Isopropyltoluene	<0.020	<0.020	<0.020	<0.020	0.020
n-Butylbenzene	<0.020	<0.020	<0.020	<0.020	0.020

Surrogates

4-Bromofluorobenzene	93%	94%	92%	96%	%REC Limits 70-130
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Allen Aminian
QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 496965.A1.01
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by GCMS EPA TO-15

AA Project No: MB187313
Date Received: 02/24/17
Date Reported: 03/01/17
Units: ug/L

Date Sampled:	02/24/17	02/24/17	02/24/17	02/24/17	
Date Prepared:	02/27/17	02/27/17	02/27/17	02/27/17	
Date Analyzed:	02/27/17	02/27/17	02/27/17	02/27/17	
AA ID No:	7B24005-05	7B24005-06	7B24005-07	7B24005-08	
Client ID No:	SVM-22-5	SVM-22-10	SVM-22-10 DUP	SVM-23-5	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL

TO-15 (Mid Level) (TO-15)

Acetone	<0.020	<0.020	<0.020	<0.020	0.020
Allyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
tert-Amyl Methyl Ether (TAME)	<0.020	<0.020	<0.020	<0.020	0.020
Benzene	<0.020	<0.020	<0.020	<0.020	0.020
Benzyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
Bromodichloromethane	<0.020	<0.020	<0.020	<0.020	0.020
Bromoform	<0.020	<0.020	<0.020	<0.020	0.020
Bromomethane	<0.020	<0.020	<0.020	<0.020	0.020
1,3-Butadiene	<0.020	<0.020	<0.020	<0.020	0.020
2-Butanone (MEK)	<0.020	<0.020	<0.020	<0.020	0.020
tert-Butyl alcohol (TBA)	<20	<20	<20	<20	20
Carbon Disulfide	<0.020	<0.020	<0.020	<0.020	0.020
Carbon Tetrachloride	<0.020	<0.020	<0.020	<0.020	0.020
Chlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
Chloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Chloroform	<0.020	<0.020	<0.020	<0.020	0.020
Chloromethane	<0.020	<0.020	<0.020	<0.020	0.020
Cyclohexane	<0.020	<0.020	<0.020	0.063	0.020
Dibromochloromethane	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dibromoethane (EDB)	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,3-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,4-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
Dichlorodifluoromethane (R12)	<0.020	<0.020	<0.020	<0.020	0.020
1,1-Dichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichloroethane (EDC)	<0.020	<0.020	<0.020	<0.020	0.020
cis-1,2-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020

Allen Aminian
 QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 496965.A1.01
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by GCMS EPA TO-15

AA Project No: MB187313
Date Received: 02/24/17
Date Reported: 03/01/17
Units: ug/L

Date Sampled:	02/24/17	02/24/17	02/24/17	02/24/17	
Date Prepared:	02/27/17	02/27/17	02/27/17	02/27/17	
Date Analyzed:	02/27/17	02/27/17	02/27/17	02/27/17	
AA ID No:	7B24005-05	7B24005-06	7B24005-07	7B24005-08	
Client ID No:	SVM-22-5	SVM-22-10	SVM-22-10 DUP	SVM-23-5	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL

TO-15 (Mid Level) (TO-15) (continued)

1,1-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020
trans-1,2-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichloropropane	<0.020	<0.020	<0.020	<0.020	0.020
trans-1,3-Dichloropropylene	<0.020	<0.020	<0.020	<0.020	0.020
cis-1,3-Dichloropropylene	<0.020	<0.020	<0.020	<0.020	0.020
Dichlorotetrafluoroethane	<0.020	<0.020	<0.020	<0.020	0.020
Diisopropyl ether (DIPE)	<0.020	<0.020	<0.020	<0.020	0.020
1,4-Dioxane	<0.020	<0.020	<0.020	<0.020	0.020
Ethanol	<0.020	<0.020	<0.020	<0.020	0.020
Ethyl Acetate	<0.020	<0.020	<0.020	<0.020	0.020
Ethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
Ethyl-tert-Butyl Ether (ETBE)	<0.020	<0.020	<0.020	<0.020	0.020
4-Ethyltoluene	<0.020	<0.020	<0.020	<0.020	0.020
Heptane	<0.020	<0.020	<0.020	<0.020	0.020
Hexachlorobutadiene	<0.020	<0.020	<0.020	<0.020	0.020
n-Hexane	<0.020	<0.020	<0.020	<0.020	0.020
2-Hexanone (MBK)	<0.020	<0.020	<0.020	<0.020	0.020
Isopropanol (IPA)	<0.20	<0.20	<0.20	<0.20	0.20
Methyl-tert-Butyl Ether (MTBE)	<0.020	<0.020	<0.020	<0.020	0.020
Methylene Chloride	<0.020	<0.020	<0.020	<0.020	0.020
4-Methyl-2-pentanone (MIBK)	<0.020	<0.020	<0.020	<0.020	0.020
Naphthalene	<0.020	<0.020	<0.020	<0.020	0.020
Propylene	<0.020	<0.020	<0.020	<0.020	0.020
Styrene	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2,2-Tetrachloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Tetrachloroethylene (PCE)	0.021	0.022	0.023	0.028	0.020
Tetrahydrofuran (THF)	<0.020	<0.020	<0.020	<0.020	0.020

Allen Aminian
 QA/QC Manager

**LABORATORY ANALYSIS RESULTS**

Client: CH2M Hill, Inc.
Project No: 496965.A1.01
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by GCMS EPA TO-15

AA Project No: MB187313
Date Received: 02/24/17
Date Reported: 03/01/17
Units: ug/L

Date Sampled:	02/24/17	02/24/17	02/24/17	02/24/17	
Date Prepared:	02/27/17	02/27/17	02/27/17	02/27/17	
Date Analyzed:	02/27/17	02/27/17	02/27/17	02/27/17	
AA ID No:	7B24005-05	7B24005-06	7B24005-07	7B24005-08	
Client ID No:	SVM-22-5	SVM-22-10	SVM-22-10 DUP	SVM-23-5	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL

TO-15 (Mid Level) (TO-15) (continued)

Toluene	<0.020	<0.020	<0.020	<0.020	0.020
1,2,4-Trichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2-Trichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
1,1,1-Trichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Trichloroethylene (TCE)	<0.020	<0.020	<0.020	<0.020	0.020
Trichlorofluoromethane (R11)	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<0.020	<0.020	<0.020	<0.020	0.020
1,3,5-Trimethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,2,4-Trimethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
2,2,4-Trimethylpentane	<0.020	<0.020	<0.020	0.44	0.020
Vinyl acetate	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl bromide	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
o-Xylene	<0.020	<0.020	<0.020	<0.020	0.020
m,p-Xylenes	<0.020	<0.020	<0.020	<0.020	0.020
1,1,1,2-Tetrachloroethane	<0.020	<0.020	<0.020	<0.020	0.020
1,2,3-Trichloropropane	<0.020	<0.020	<0.020	<0.020	0.020
sec-Butylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
Isopropylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
n-Propylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
4-Isopropyltoluene	<0.020	<0.020	<0.020	<0.020	0.020
n-Butylbenzene	<0.020	<0.020	<0.020	<0.020	0.020

Surrogates					%REC Limits
4-Bromofluorobenzene	93%	93%	93%	94%	70-130

Allen Aminian
QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 496965.A1.01
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by GCMS EPA TO-15

AA Project No: MB187313
Date Received: 02/24/17
Date Reported: 03/01/17
Units: ug/L

Date Sampled:	02/24/17	
Date Prepared:	02/27/17	
Date Analyzed:	02/27/17	
AA ID No:	7B24005-09	
Client ID No:	SVM-23-10	
Matrix:	Vapor	
Dilution Factor:	1	MRL

TO-15 (Mid Level) (TO-15)

Acetone	<0.020	0.020
Allyl chloride	<0.020	0.020
tert-Amyl Methyl Ether (TAME)	<0.020	0.020
Benzene	<0.020	0.020
Benzyl chloride	<0.020	0.020
Bromodichloromethane	<0.020	0.020
Bromoform	<0.020	0.020
Bromomethane	<0.020	0.020
1,3-Butadiene	<0.020	0.020
2-Butanone (MEK)	<0.020	0.020
tert-Butyl alcohol (TBA)	<20	20
Carbon Disulfide	<0.020	0.020
Carbon Tetrachloride	<0.020	0.020
Chlorobenzene	<0.020	0.020
Chloroethane	<0.020	0.020
Chloroform	<0.020	0.020
Chloromethane	<0.020	0.020
Cyclohexane	0.26	0.020
Dibromochloromethane	<0.020	0.020
1,2-Dibromoethane (EDB)	<0.020	0.020
1,2-Dichlorobenzene	<0.020	0.020
1,3-Dichlorobenzene	<0.020	0.020
1,4-Dichlorobenzene	<0.020	0.020
Dichlorodifluoromethane (R12)	<0.020	0.020
1,1-Dichloroethane	<0.020	0.020
1,2-Dichloroethane (EDC)	<0.020	0.020
cis-1,2-Dichloroethylene	<0.020	0.020

Allen Aminian
 QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 496965.A1.01
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by GCMS EPA TO-15

AA Project No: MB187313
Date Received: 02/24/17
Date Reported: 03/01/17
Units: ug/L

Date Sampled:	02/24/17	
Date Prepared:	02/27/17	
Date Analyzed:	02/27/17	
AA ID No:	7B24005-09	
Client ID No:	SVM-23-10	
Matrix:	Vapor	
Dilution Factor:	1	MRL

TO-15 (Mid Level) (TO-15) (continued)

1,1-Dichloroethylene	<0.020	0.020
trans-1,2-Dichloroethylene	<0.020	0.020
1,2-Dichloropropane	<0.020	0.020
trans-1,3-Dichloropropylene	<0.020	0.020
cis-1,3-Dichloropropylene	<0.020	0.020
Dichlorotetrafluoroethane	<0.020	0.020
Diisopropyl ether (DIPE)	<0.020	0.020
1,4-Dioxane	<0.020	0.020
Ethanol	<0.020	0.020
Ethyl Acetate	<0.020	0.020
Ethylbenzene	<0.020	0.020
Ethyl-tert-Butyl Ether (ETBE)	<0.020	0.020
4-Ethyltoluene	<0.020	0.020
Heptane	<0.020	0.020
Hexachlorobutadiene	<0.020	0.020
n-Hexane	<0.020	0.020
2-Hexanone (MBK)	<0.020	0.020
Isopropanol (IPA)	<0.20	0.20
Methyl-tert-Butyl Ether (MTBE)	<0.020	0.020
Methylene Chloride	<0.020	0.020
4-Methyl-2-pentanone (MIBK)	<0.020	0.020
Naphthalene	<0.020	0.020
Propylene	<0.020	0.020
Styrene	<0.020	0.020
1,1,2,2-Tetrachloroethane	<0.020	0.020
Tetrachloroethylene (PCE)	0.045	0.020
Tetrahydrofuran (THF)	<0.020	0.020

Allen Aminian
 QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 496965.A1.01
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by GCMS EPA TO-15

AA Project No: MB187313
Date Received: 02/24/17
Date Reported: 03/01/17
Units: ug/L

Date Sampled:	02/24/17	
Date Prepared:	02/27/17	
Date Analyzed:	02/27/17	
AA ID No:	7B24005-09	
Client ID No:	SVM-23-10	
Matrix:	Vapor	
Dilution Factor:	1	MRL

TO-15 (Mid Level) (TO-15) (continued)

Toluene	<0.020	0.020
1,2,4-Trichlorobenzene	<0.020	0.020
1,1,2-Trichloroethane	<0.020	0.020
1,1,1-Trichloroethane	<0.020	0.020
Trichloroethylene (TCE)	<0.020	0.020
Trichlorofluoromethane (R11)	<0.020	0.020
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<0.020	0.020
1,3,5-Trimethylbenzene	<0.020	0.020
1,2,4-Trimethylbenzene	<0.020	0.020
2,2,4-Trimethylpentane	3.0	0.020
Vinyl acetate	<0.020	0.020
Vinyl bromide	<0.020	0.020
Vinyl chloride	<0.020	0.020
o-Xylene	<0.020	0.020
m,p-Xylenes	<0.020	0.020
1,1,1,2-Tetrachloroethane	<0.020	0.020
1,2,3-Trichloropropane	<0.020	0.020
sec-Butylbenzene	<0.020	0.020
Isopropylbenzene	<0.020	0.020
n-Propylbenzene	<0.020	0.020
4-Isopropyltoluene	<0.020	0.020
n-Butylbenzene	<0.020	0.020

<u>Surrogates</u>		<u>%REC Limits</u>
4-Bromofluorobenzene	93%	70-130

Allen Aminian

Allen Aminian
 QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 496965.A1.01
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187313
Date Received: 02/24/17
Date Reported: 03/01/17

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC Limits	RPD	RPD Limit	Notes
VOCs by EPA TO-3 - Quality Control									
<i>Batch B7B2826 - *** DEFAULT PREP ***</i>									
Blank (B7B2826-BLK1)				Prepared & Analyzed: 02/27/17					
Gasoline Range Organics (GRO)	<20	20	ug/L						
Surrogate: 4-Bromofluorobenzene	0.0345		ug/L	0.036	96.4	70-130			
LCS (B7B2826-BS1)				Prepared & Analyzed: 02/27/17					
Gasoline Range Organics (GRO)	0.586	20	ug/L	0.82	71.7	70-130			
Surrogate: 4-Bromofluorobenzene	0.0346		ug/L	0.036	96.8	70-130			
LCS Dup (B7B2826-BSD1)				Prepared & Analyzed: 02/27/17					
Gasoline Range Organics (GRO)	0.658	20	ug/L	0.82	80.4	70-130	11.5	30	
Surrogate: 4-Bromofluorobenzene	0.0359		ug/L	0.036	100	70-130			
Duplicate (B7B2826-DUP1)				Source: 7B24005-08 Prepared: 02/27/17 Analyzed: 02/28/17					
Gasoline Range Organics (GRO)	<20	20	ug/L		2.08		4.48	30	
Surrogate: 4-Bromofluorobenzene	0.0346		ug/L	0.036	96.6	70-130			

VOCs by GCMS EPA TO-15 - Quality Control

*Batch B7B2824 - *** DEFAULT PREP ****

Blank (B7B2824-BLK1)

Prepared & Analyzed: 02/27/17

Acetone	<0.020	0.020	ug/L
Allyl chloride	<0.020	0.020	ug/L
tert-Amyl Methyl Ether (TAME)	<0.020	0.020	ug/L
Benzene	<0.020	0.020	ug/L
Benzyl chloride	<0.020	0.020	ug/L
Bromodichloromethane	<0.020	0.020	ug/L
Bromoform	<0.020	0.020	ug/L
Bromomethane	<0.020	0.020	ug/L
1,3-Butadiene	<0.020	0.020	ug/L
2-Butanone (MEK)	<0.020	0.020	ug/L
tert-Butyl alcohol (TBA)	<20	20	ug/L
Carbon Disulfide	<0.020	0.020	ug/L
Carbon Tetrachloride	<0.020	0.020	ug/L
Chlorobenzene	<0.020	0.020	ug/L
Chloroethane	<0.020	0.020	ug/L

Allen Aminian

Allen Aminian
 QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 496965.A1.01
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187313
Date Received: 02/24/17
Date Reported: 03/01/17

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 - Quality Control										
<i>Batch B7B2824 - *** DEFAULT PREP ***</i>										
Blank (B7B2824-BLK1) Continued										
Prepared & Analyzed: 02/27/17										
Chloroform	<0.020	0.020	ug/L							
Chloromethane	<0.020	0.020	ug/L							
Cyclohexane	<0.020	0.020	ug/L							
Dibromochloromethane	<0.020	0.020	ug/L							
1,2-Dibromoethane (EDB)	<0.020	0.020	ug/L							
1,2-Dichlorobenzene	<0.020	0.020	ug/L							
1,3-Dichlorobenzene	<0.020	0.020	ug/L							
1,4-Dichlorobenzene	<0.020	0.020	ug/L							
Dichlorodifluoromethane (R12)	<0.020	0.020	ug/L							
1,1-Dichloroethane	<0.020	0.020	ug/L							
1,2-Dichloroethane (EDC)	<0.020	0.020	ug/L							
cis-1,2-Dichloroethylene	<0.020	0.020	ug/L							
1,1-Dichloroethylene	<0.020	0.020	ug/L							
trans-1,2-Dichloroethylene	<0.020	0.020	ug/L							
1,2-Dichloropropane	<0.020	0.020	ug/L							
trans-1,3-Dichloropropylene	<0.020	0.020	ug/L							
cis-1,3-Dichloropropylene	<0.020	0.020	ug/L							
Dichlorotetrafluoroethane	<0.020	0.020	ug/L							
Diisopropyl ether (DIPE)	<0.020	0.020	ug/L							
1,4-Dioxane	<0.020	0.020	ug/L							
Ethanol	<0.020	0.020	ug/L							
Ethyl Acetate	<0.020	0.020	ug/L							
Ethylbenzene	<0.020	0.020	ug/L							
Ethyl-tert-Butyl Ether (ETBE)	<0.020	0.020	ug/L							
4-Ethyltoluene	<0.020	0.020	ug/L							
Heptane	<0.020	0.020	ug/L							
Hexachlorobutadiene	<0.020	0.020	ug/L							
n-Hexane	<0.020	0.020	ug/L							
2-Hexanone (MBK)	<0.020	0.020	ug/L							
Isopropanol (IPA)	<0.20	0.20	ug/L							
Methyl-tert-Butyl Ether (MTBE)	<0.020	0.020	ug/L							
Methylene Chloride	<0.020	0.020	ug/L							

Allen Aminian
 QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 496965.A1.01
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187313
Date Received: 02/24/17
Date Reported: 03/01/17

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 - Quality Control										
<i>Batch B7B2824 - *** DEFAULT PREP ***</i>										
Blank (B7B2824-BLK1) Continued										
Prepared & Analyzed: 02/27/17										
4-Methyl-2-pentanone (MIBK)	<0.020	0.020	ug/L							
Naphthalene	<0.020	0.020	ug/L							
Propylene	<0.020	0.020	ug/L							
Styrene	<0.020	0.020	ug/L							
1,1,2,2-Tetrachloroethane	<0.020	0.020	ug/L							
Tetrachloroethylene (PCE)	<0.020	0.020	ug/L							
Tetrahydrofuran (THF)	<0.020	0.020	ug/L							
Toluene	<0.020	0.020	ug/L							
1,2,4-Trichlorobenzene	<0.020	0.020	ug/L							
1,1,2-Trichloroethane	<0.020	0.020	ug/L							
1,1,1-Trichloroethane	<0.020	0.020	ug/L							
Trichloroethylene (TCE)	<0.020	0.020	ug/L							
Trichlorofluoromethane (R11)	<0.020	0.020	ug/L							
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<0.020	0.020	ug/L							
1,3,5-Trimethylbenzene	<0.020	0.020	ug/L							
1,2,4-Trimethylbenzene	<0.020	0.020	ug/L							
2,2,4-Trimethylpentane	<0.020	0.020	ug/L							
Vinyl acetate	<0.020	0.020	ug/L							
Vinyl bromide	<0.020	0.020	ug/L							
Vinyl chloride	<0.020	0.020	ug/L							
o-Xylene	<0.020	0.020	ug/L							
m,p-Xylenes	<0.020	0.020	ug/L							
1,1,1,2-Tetrachloroethane	<0.020	0.020	ug/L							
1,2,3-Trichloropropane	<0.020	0.020	ug/L							
sec-Butylbenzene	<0.020	0.020	ug/L							
Isopropylbenzene	<0.020	0.020	ug/L							
n-Propylbenzene	<0.020	0.020	ug/L							
4-Isopropyltoluene	<0.020	0.020	ug/L							
n-Butylbenzene	<0.020	0.020	ug/L							
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.137</i>		<i>ug/L</i>	<i>0.14</i>		<i>95.9</i>	<i>70-130</i>			

Allen Aminian
 QA/QC Manager

**LABORATORY ANALYSIS RESULTS**

Client: CH2M Hill, Inc.
Project No: 496965.A1.01
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187313
Date Received: 02/24/17
Date Reported: 03/01/17

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 - Quality Control										
Batch B7B2824 - *** DEFAULT PREP ***										
LCS (B7B2824-BS1)										
Prepared & Analyzed: 02/27/17										
Acetone	0.0245	0.020	ug/L	0.024		103	70-130		30	
Benzene	0.0348	0.020	ug/L	0.032		109	70-130		30	
Benzyl chloride	0.0502	0.020	ug/L	0.052		97.0	70-130		30	
Bromodichloromethane	0.0696	0.020	ug/L	0.067		104	70-130		30	
Bromoform	0.109	0.020	ug/L	0.10		105	70-130		30	
Bromomethane	0.0369	0.020	ug/L	0.039		95.0	70-130		30	
2-Butanone (MEK)	0.0314	0.020	ug/L	0.029		107	70-130		30	
Carbon Disulfide	0.0318	0.020	ug/L	0.031		102	70-130		30	
Carbon Tetrachloride	0.0662	0.020	ug/L	0.063		105	70-130		30	
Chlorobenzene	0.0490	0.020	ug/L	0.046		106	70-130		30	
Chloroethane	0.0336	0.020	ug/L	0.026		128	70-130		30	
Chloroform	0.0499	0.020	ug/L	0.049		102	70-130		30	
Chloromethane	0.0203	0.020	ug/L	0.021		98.1	70-130		30	
Dibromochloromethane	0.0961	0.020	ug/L	0.085		113	70-130		30	
1,2-Dibromoethane (EDB)	0.0883	0.020	ug/L	0.077		115	70-130		30	
1,2-Dichlorobenzene	0.0643	0.020	ug/L	0.060		107	70-130		30	
1,3-Dichlorobenzene	0.0642	0.020	ug/L	0.060		107	70-130		30	
1,4-Dichlorobenzene	0.0626	0.020	ug/L	0.060		104	70-130		30	
Dichlorodifluoromethane (R12)	0.0528	0.020	ug/L	0.049		107	70-130		30	
1,1-Dichloroethane	0.0409	0.020	ug/L	0.040		101	70-130		30	
1,2-Dichloroethane (EDC)	0.0393	0.020	ug/L	0.040		97.2	70-130		30	
cis-1,2-Dichloroethylene	0.0400	0.020	ug/L	0.040		101	70-130		30	
1,1-Dichloroethylene	0.0410	0.020	ug/L	0.040		103	70-130		30	
trans-1,2-Dichloroethylene	0.0402	0.020	ug/L	0.040		102	70-130		30	
1,2-Dichloropropane	0.0509	0.020	ug/L	0.046		110	70-130		30	
trans-1,3-Dichloropropylene	0.0470	0.020	ug/L	0.045		104	70-130		30	
cis-1,3-Dichloropropylene	0.0508	0.020	ug/L	0.045		112	70-130		30	
Dichlorotetrafluoroethane	0.0708	0.020	ug/L	0.070		101	70-130		30	
Ethylbenzene	0.0465	0.020	ug/L	0.043		107	70-130		30	
4-Ethyltoluene	0.0520	0.020	ug/L	0.049		106	70-130		30	
Hexachlorobutadiene	0.115	0.020	ug/L	0.11		108	70-130		30	
2-Hexanone (MBK)	0.0424	0.020	ug/L	0.041		103	70-130		30	

Allen Aminian
QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 496965.A1.01
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187313
Date Received: 02/24/17
Date Reported: 03/01/17

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 - Quality Control										
<i>Batch B7B2824 - *** DEFAULT PREP ***</i>										
LCS (B7B2824-BS1) Continued						Prepared & Analyzed: 02/27/17				
Isopropanol (IPA)	0.0253	0.20	ug/L	0.025	103	70-130		30		
Methylene Chloride	0.0335	0.020	ug/L	0.035	96.5	70-130		30		
4-Methyl-2-pentanone (MIBK)	0.0427	0.020	ug/L	0.041	104	70-130		30		
Styrene	0.0462	0.020	ug/L	0.043	108	70-130		30		
1,1,2,2-Tetrachloroethane	0.0728	0.020	ug/L	0.069	106	70-130		30		
Tetrachloroethylene (PCE)	0.0832	0.020	ug/L	0.068	123	70-130		30		
Toluene	0.0424	0.020	ug/L	0.038	112	70-130		30		
1,2,4-Trichlorobenzene	0.0738	0.020	ug/L	0.074	99.5	70-130		30		
1,1,2-Trichloroethane	0.0611	0.020	ug/L	0.055	112	70-130		30		
1,1,1-Trichloroethane	0.0553	0.020	ug/L	0.055	101	70-130		30		
Trichloroethylene (TCE)	0.0611	0.020	ug/L	0.054	114	70-130		30		
Trichlorofluoromethane (R11)	0.0605	0.020	ug/L	0.056	108	70-130		30		
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	0.0822	0.020	ug/L	0.077	107	70-130		30		
1,3,5-Trimethylbenzene	0.0516	0.020	ug/L	0.049	105	70-130		30		
1,2,4-Trimethylbenzene	0.0518	0.020	ug/L	0.049	105	70-130		30		
Vinyl acetate	0.0362	0.020	ug/L	0.035	103	70-130		30		
Vinyl chloride	0.0237	0.020	ug/L	0.026	92.9	70-130		30		
o-Xylene	0.0450	0.020	ug/L	0.043	104	70-130		30		
m,p-Xylenes	0.0920	0.020	ug/L	0.087	106	70-130		30		
1,1,1,2-Tetrachloroethane	ND	0.020	ug/L			70-130		30		
1,2,3-Trichloropropane	0.0678	0.020	ug/L	0.060	112	70-130		30		
sec-Butylbenzene	0.0663	0.020	ug/L	0.055	121	70-130		30		
Isopropylbenzene	0.0555	0.020	ug/L	0.049	113	70-130		30		
n-Propylbenzene	0.0561	0.020	ug/L	0.049	114	70-130		30		
4-Isopropyltoluene	0.0670	0.020	ug/L	0.055	122	70-130		30		
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.138</i>		<i>ug/L</i>	<i>0.14</i>	<i>96.3</i>	<i>70-130</i>				
LCS Dup (B7B2824-BSD1)						Prepared & Analyzed: 02/27/17				
Acetone	0.0252	0.020	ug/L	0.024	106	70-130	2.96	30		
Benzene	0.0360	0.020	ug/L	0.032	113	70-130	3.52	30		
Benzyl chloride	0.0509	0.020	ug/L	0.052	98.3	70-130	1.33	30		

Allen Aminian
 QA/QC Manager

**LABORATORY ANALYSIS RESULTS**

Client: CH2M Hill, Inc.
Project No: 496965.A1.01
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187313
Date Received: 02/24/17
Date Reported: 03/01/17

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 - Quality Control										
Batch B7B2824 - *** DEFAULT PREP ***										
LCS Dup (B7B2824-BSD1) Continued										
Prepared & Analyzed: 02/27/17										
Bromodichloromethane	0.0726	0.020	ug/L	0.067	108	70-130	4.24	30		
Bromoform	0.105	0.020	ug/L	0.10	102	70-130	3.19	30		
Bromomethane	0.0577	0.020	ug/L	0.039	149	70-130	44.0	30		**
2-Butanone (MEK)	0.0332	0.020	ug/L	0.029	112	70-130	5.39	30		
Carbon Disulfide	0.0328	0.020	ug/L	0.031	105	70-130	3.09	30		
Carbon Tetrachloride	0.0674	0.020	ug/L	0.063	107	70-130	1.79	30		
Chlorobenzene	0.0513	0.020	ug/L	0.046	112	70-130	4.68	30		
Chloroethane	0.0349	0.020	ug/L	0.026	132	70-130	3.54	30		**
Chloroform	0.0535	0.020	ug/L	0.049	110	70-130	6.80	30		
Chloromethane	0.0211	0.020	ug/L	0.021	102	70-130	4.29	30		
Dibromochloromethane	0.0949	0.020	ug/L	0.085	111	70-130	1.25	30		
1,2-Dibromoethane (EDB)	0.0903	0.020	ug/L	0.077	118	70-130	2.24	30		
1,2-Dichlorobenzene	0.0642	0.020	ug/L	0.060	107	70-130	0.187	30		
1,3-Dichlorobenzene	0.0648	0.020	ug/L	0.060	108	70-130	0.839	30		
1,4-Dichlorobenzene	0.0635	0.020	ug/L	0.060	106	70-130	1.53	30		
Dichlorodifluoromethane (R12)	0.0552	0.020	ug/L	0.049	112	70-130	4.58	30		
1,1-Dichloroethane	0.0438	0.020	ug/L	0.040	108	70-130	6.69	30		
1,2-Dichloroethane (EDC)	0.0423	0.020	ug/L	0.040	105	70-130	7.33	30		
cis-1,2-Dichloroethylene	0.0431	0.020	ug/L	0.040	109	70-130	7.44	30		
1,1-Dichloroethylene	0.0446	0.020	ug/L	0.040	112	70-130	8.53	30		
trans-1,2-Dichloroethylene	0.0446	0.020	ug/L	0.040	112	70-130	10.2	30		
1,2-Dichloropropane	0.0525	0.020	ug/L	0.046	114	70-130	3.04	30		
trans-1,3-Dichloropropylene	0.0478	0.020	ug/L	0.045	105	70-130	1.82	30		
cis-1,3-Dichloropropylene	0.0496	0.020	ug/L	0.045	109	70-130	2.44	30		
Dichlorotetrafluoroethane	0.0711	0.020	ug/L	0.070	102	70-130	0.394	30		
Ethylbenzene	0.0480	0.020	ug/L	0.043	110	70-130	3.22	30		
4-Ethyltoluene	0.0547	0.020	ug/L	0.049	111	70-130	5.16	30		
Hexachlorobutadiene	0.107	0.020	ug/L	0.11	100	70-130	7.19	30		
2-Hexanone (MBK)	0.0453	0.020	ug/L	0.041	111	70-130	6.82	30		
Isopropanol (IPA)	0.0255	0.20	ug/L	0.025	104	70-130	0.484	30		
Methylene Chloride	0.0368	0.020	ug/L	0.035	106	70-130	9.29	30		
4-Methyl-2-pentanone (MIBK)	0.0454	0.020	ug/L	0.041	111	70-130	6.23	30		

Allen Aminian
QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 496965.A1.01
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187313
Date Received: 02/24/17
Date Reported: 03/01/17

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 - Quality Control										
Batch B7B2824 - *** DEFAULT PREP ***										
LCS Dup (B7B2824-BSD1) Continued										
Prepared & Analyzed: 02/27/17										
Styrene	0.0473	0.020	ug/L	0.043		111	70-130	2.28	30	
1,1,2,2-Tetrachloroethane	0.0776	0.020	ug/L	0.069		113	70-130	6.48	30	
Tetrachloroethylene (PCE)	0.0797	0.020	ug/L	0.068		117	70-130	4.33	30	
Toluene	0.0439	0.020	ug/L	0.038		116	70-130	3.50	30	
1,2,4-Trichlorobenzene	0.0753	0.020	ug/L	0.074		101	70-130	1.89	30	
1,1,2-Trichloroethane	0.0619	0.020	ug/L	0.055		113	70-130	1.24	30	
1,1,1-Trichloroethane	0.0586	0.020	ug/L	0.055		107	70-130	5.75	30	
Trichloroethylene (TCE)	0.0614	0.020	ug/L	0.054		114	70-130	0.526	30	
Trichlorofluoromethane (R11)	0.0628	0.020	ug/L	0.056		112	70-130	3.74	30	
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	0.0907	0.020	ug/L	0.077		118	70-130	9.93	30	
1,3,5-Trimethylbenzene	0.0546	0.020	ug/L	0.049		111	70-130	5.74	30	
1,2,4-Trimethylbenzene	0.0543	0.020	ug/L	0.049		110	70-130	4.73	30	
Vinyl acetate	0.0386	0.020	ug/L	0.035		110	70-130	6.40	30	
Vinyl chloride	0.0243	0.020	ug/L	0.026		95.0	70-130	2.24	30	
o-Xylene	0.0481	0.020	ug/L	0.043		111	70-130	6.53	30	
m,p-Xylenes	0.0964	0.020	ug/L	0.087		111	70-130	4.66	30	
1,1,1,2-Tetrachloroethane	ND	0.020	ug/L				70-130		30	
1,2,3-Trichloropropane	0.0713	0.020	ug/L	0.060		118	70-130	5.03	30	
sec-Butylbenzene	0.0685	0.020	ug/L	0.055		125	70-130	3.34	30	
Isopropylbenzene	0.0592	0.020	ug/L	0.049		120	70-130	6.43	30	
n-Propylbenzene	0.0603	0.020	ug/L	0.049		123	70-130	7.18	30	
4-Isopropyltoluene	0.0697	0.020	ug/L	0.055		127	70-130	3.93	30	
Surrogate: 4-Bromofluorobenzene	0.137		ug/L	0.14		95.9	70-130			
Duplicate (B7B2824-DUP1)										
Source: 7B24005-08 Prepared: 02/27/17 Analyzed: 02/28/17										
Acetone	<0.020	0.020	ug/L		<0.020				30	
Allyl chloride	<0.020	0.020	ug/L		<0.020				30	
tert-Amyl Methyl Ether (TAME)	<0.020	0.020	ug/L		<0.020				30	
Benzene	<0.020	0.020	ug/L		<0.020				30	
Benzyl chloride	<0.020	0.020	ug/L		<0.020				30	
Bromodichloromethane	<0.020	0.020	ug/L		<0.020				30	

Allen Aminian
 QA/QC Manager

**LABORATORY ANALYSIS RESULTS**

Client: CH2M Hill, Inc.
Project No: 496965.A1.01
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187313
Date Received: 02/24/17
Date Reported: 03/01/17

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 - Quality Control										
<i>Batch B7B2824 - *** DEFAULT PREP ***</i>										
Duplicate (B7B2824-DUP1) Continued Source: 7B24005-08 Prepared: 02/27/17 Analyzed: 02/28/17										
Bromoform	<0.020	0.020	ug/L		<0.020					30
Bromomethane	<0.020	0.020	ug/L		<0.020					30
1,3-Butadiene	<0.020	0.020	ug/L		<0.020					30
2-Butanone (MEK)	<0.020	0.020	ug/L		<0.020					30
tert-Butyl alcohol (TBA)	<20	20	ug/L		<20					30
Carbon Disulfide	<0.020	0.020	ug/L		<0.020					30
Carbon Tetrachloride	<0.020	0.020	ug/L		<0.020					30
Chlorobenzene	<0.020	0.020	ug/L		<0.020					30
Chloroethane	<0.020	0.020	ug/L		<0.020					30
Chloroform	<0.020	0.020	ug/L		<0.020					30
Chloromethane	<0.020	0.020	ug/L		<0.020					30
Cyclohexane	0.0639	0.020	ug/L		0.0633			0.920		30
Dibromochloromethane	<0.020	0.020	ug/L		<0.020					30
1,2-Dibromoethane (EDB)	<0.020	0.020	ug/L		<0.020					30
1,2-Dichlorobenzene	<0.020	0.020	ug/L		<0.020					30
1,3-Dichlorobenzene	<0.020	0.020	ug/L		<0.020					30
1,4-Dichlorobenzene	<0.020	0.020	ug/L		<0.020					30
Dichlorodifluoromethane (R12)	<0.020	0.020	ug/L		<0.020					30
1,1-Dichloroethane	<0.020	0.020	ug/L		<0.020					30
1,2-Dichloroethane (EDC)	<0.020	0.020	ug/L		<0.020					30
cis-1,2-Dichloroethylene	<0.020	0.020	ug/L		<0.020					30
1,1-Dichloroethylene	<0.020	0.020	ug/L		<0.020					30
trans-1,2-Dichloroethylene	<0.020	0.020	ug/L		<0.020					30
1,2-Dichloropropane	<0.020	0.020	ug/L		<0.020					30
trans-1,3-Dichloropropylene	<0.020	0.020	ug/L		<0.020					30
cis-1,3-Dichloropropylene	<0.020	0.020	ug/L		<0.020					30
Dichlorotetrafluoroethane	<0.020	0.020	ug/L		<0.020					30
Diisopropyl ether (DIPE)	<0.020	0.020	ug/L		<0.020					30
1,4-Dioxane	<0.020	0.020	ug/L		<0.020					30
Ethanol	<0.020	0.020	ug/L		<0.020					30
Ethyl Acetate	<0.020	0.020	ug/L		<0.020					30
Ethylbenzene	<0.020	0.020	ug/L		<0.020					30

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Ethyl-tert-Butyl Ether (ETBE)	<0.020	0.020	ug/L		<0.020				30	
4-Ethyltoluene	<0.020	0.020	ug/L		<0.020				30	
Heptane	<0.020	0.020	ug/L		<0.020				30	
Hexachlorobutadiene	<0.020	0.020	ug/L		<0.020				30	
n-Hexane	<0.020	0.020	ug/L		<0.020				30	
2-Hexanone (MBK)	<0.020	0.020	ug/L		<0.020				30	
Isopropanol (IPA)	<0.20	0.20	ug/L		<0.20				30	
Methyl-tert-Butyl Ether (MTBE)	<0.020	0.020	ug/L		<0.020				30	
Methylene Chloride	<0.020	0.020	ug/L		<0.020				30	
4-Methyl-2-pentanone (MIBK)	<0.020	0.020	ug/L		<0.020				30	
Naphthalene	<0.020	0.020	ug/L		<0.020				30	
Propylene	<0.020	0.020	ug/L		<0.020				30	
Styrene	<0.020	0.020	ug/L		<0.020				30	
1,1,2,2-Tetrachloroethane	<0.020	0.020	ug/L		<0.020				30	
Tetrachloroethylene (PCE)	0.0326	0.020	ug/L		0.0276			16.5	30	
Tetrahydrofuran (THF)	<0.020	0.020	ug/L		<0.020				30	
Toluene	<0.020	0.020	ug/L		<0.020				30	
1,2,4-Trichlorobenzene	<0.020	0.020	ug/L		<0.020				30	
1,1,2-Trichloroethane	<0.020	0.020	ug/L		<0.020				30	
1,1,1-Trichloroethane	<0.020	0.020	ug/L		<0.020				30	
Trichloroethylene (TCE)	<0.020	0.020	ug/L		<0.020				30	
Trichlorofluoromethane (R11)	<0.020	0.020	ug/L		<0.020				30	
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<0.020	0.020	ug/L		<0.020				30	
1,3,5-Trimethylbenzene	<0.020	0.020	ug/L		<0.020				30	
1,2,4-Trimethylbenzene	<0.020	0.020	ug/L		<0.020				30	
2,2,4-Trimethylpentane	0.431	0.020	ug/L		0.444			2.85	30	
Vinyl acetate	<0.020	0.020	ug/L		<0.020				30	
Vinyl bromide	<0.020	0.020	ug/L		<0.020				30	
Vinyl chloride	<0.020	0.020	ug/L		<0.020				30	
o-Xylene	<0.020	0.020	ug/L		<0.020				30	
m,p-Xylenes	<0.020	0.020	ug/L		<0.020				30	

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1,1,1,2-Tetrachloroethane	<0.020	0.020	ug/L		<0.020				30	
1,2,3-Trichloropropane	<0.020	0.020	ug/L		<0.020				30	
sec-Butylbenzene	<0.020	0.020	ug/L		<0.020				30	
Isopropylbenzene	<0.020	0.020	ug/L		<0.020				30	
n-Propylbenzene	<0.020	0.020	ug/L		<0.020				30	
4-Isopropyltoluene	<0.020	0.020	ug/L		<0.020				30	
n-Butylbenzene	<0.020	0.020	ug/L		<0.020				30	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.137</i>		<i>ug/L</i>	<i>0.14</i>		<i>95.8</i>	<i>70-130</i>			

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Special Notes

[1] = ** : Analyte recovery exceeded the upper control limit.

A handwritten signature in black ink, appearing to read 'Allen Aminian'.

Allen Aminian
QA/QC Manager



AMERICAN ANALYTICS CHAIN-OF-CUSTODY RECORD

9765 ETON AVE., CHATSWORTH, CA 91311

Tel: 818-998-5547 FAX: 818-998-7258

A.A. COC No.: 126754

70047945
Page 1 of 1

Client: CH2M HILL Project Name / No.: KINDOL MORGAN NORWALK Sampler's Name: WILLIAM SCHROEDER
 Project Manager: DAN JABLONSKI Site Address: 15306 NORWALK BLVD Sampler's Signature: [Signature]
 Phone: _____ City: NORWALK P.O. No.: _____
 Fax: _____ State & Zip: CA Quote No.: _____

TAT Turnaround Codes **

- ① = Same Day Rush
- ② = 24 Hour Rush
- ③ = 48 Hour Rush
- ④ = 72 Hour Rush
- ⑤ = 5 Day Rush
- X = 10 Working Days (Standard TAT)

ANALYSIS REQUESTED (Test Name)

Client I.D.	A.A. I.D.	Date	Time	Sample Matrix	No. of Cont	Please enter the TAT Turnaround Codes ** below										Special Instructions	
						1	2	3	4	5	X						
SUM 20-5	7B74005-01	2-24-17	0829	V	1	✓	X										
SUM 20-10	2		0832	V	1	✓	X										3 DAY TAT
SUM 21-5	3		0837	V	1	✓	X										
SUM 21-10	4		0843	V	1	✓	X										
SUM 22-5	5		0943	V	1	✓	X										
SUM 22-10	6		0959	V	1	✓	X										
SUM 22-10 DUP	7		0959	V	1	✓	X										
SUM 23-5	8		1001	V	1	✓	X										
SUM 23-10	9	✓	1001	V	1	✓	X										

For Laboratory Use

PRIORITY

Rush 72 Hrs SH
 Date 2/24/17 Time 1426 Sign [Signature]

Relinquished by <u>[Signature]</u>	Date <u>2-24-17</u>	Time <u>1054</u>	Received by <u>[Signature]</u>
Relinquished by <u>[Signature]</u>	Date <u>2/24/17</u>	Time <u>1234</u>	Received by <u>[Signature]</u>
Relinquished by _____	Date _____	Time _____	Received by _____

A.A. Project No.: MB187313 / 7B24005

Note: By relinquishing samples to American Analytics, client agrees to pay for the services requested on this chain of custody form and any additional client-requested analyses performed on this project