SAN FRANCISCO BAY AREA RAPID TRANSIT DISTRICT
300 Lakeside Drive, P.O. Box 12688
Oakland, CA 94604-2688
(510) 464-6000

RECEIVED
By Alameda County Environmental Health 12:24 pm, May 10, 201

May 8, 2017

Karel Detterman, P.G.
Hazardous Materials Specialist
Alameda County Health Care Service Agency
Department of Environmental Health Local Oversight Program (LOP) For Hazardous Materials Releases
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502

Subject: **Updated Site Conceptual Model and Data Gap Investigation Work Plan for Fuel Leak Case No. RO0003171 and GeoTracker Global ID T10000007044,**
BART Maintenance Shop, 601 East 8th Street, Oakland, CA 94606-3606

Dear Ms. Detterman:

San Francisco Bay Area Rapid Transit District (BART) is pleased to submit the attached technical memorandum, *Updated Site Conceptual Model and Data Gap Investigation Work Plan,* for the BART Maintenance Shop located at 601 East 8th Street, Oakland, CA 94606-3606. This technical memorandum was prepared by CDM Smith in response to technical comments issued by Alameda County Environmental Health (ACDEH) in a letter dated March 7, 2017 to BART requesting additional information associated with the waste oil underground storage tank at the BART Maintenance Shop in Oakland, California.

CDM Smith is authorized by BART to perform environmental compliance tasks related to this case. I have read and acknowledge the content, recommendations and/or conclusions contained in the attached technical memorandum submitted on my behalf to ACDEH's FTP server and the SWRCB's GeoTracker website. If you have any questions or would like to discuss the information presented in this document, please contact me at (510) 464-7659.

Very Truly Yours,

Gary C. Jensen
Principal Engineer
Environmental, Health, and Safety Division

cc: Ryan Wood, P.G. (CDM Smith)
Kassandra H. Tzou (CDM Smith)

Updated Site Conceptual Model and Data Gap Investigation Work Plan for

Fuel Leak Case No. RO0003171 GeoTracker Global ID T10000007044

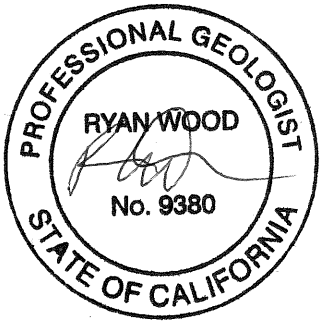
BART Maintenance Shop
601 East 8th Street
Oakland, CA 94606-3606

Document Date: May 4, 2017

Prepared by: CDM Smith
100 Pringle Avenue, Suite 300
Walnut Creek, California 94596

Preparation Date: May 4, 2017

CDM Smith Project Manager: _____ May 4, 2017
Kassandra H. Tzou, P.E. Date



CDM Smith Project Geologist: _____ May 4, 2017
Ryan Wood, P.G. Date

100 Pringle Avenue, Suite 300
Walnut Creek, California 94596
tel: 925-933-2900
fax: 925-933-4174

Technical Memorandum

To: *Karel Detterman (ACDEH)*

From: *Ryan Wood, P.G. (CDM Smith)*
Kassandra H. Tzou, P.E. (CDM Smith)

CC: *Gary Jensen (BART)*

Date: *May 4, 2017*

Subject: Updated Site Conceptual Model and Data Gap Investigation Work Plan for Fuel Leak Case No. RO0003171 and GeoTracker Global ID T10000007044, BART Maintenance Shop, 601 East 8th Street, Oakland, CA 94606-3606

On behalf of San Francisco Bay Area Rapid Transit District (BART), CDM Smith has prepared the following Updated Site Conceptual Model and Data Gap Investigation Work Plan for Fuel Leak Case No. RO0003171 at the BART Oakland Shop in Oakland, California (Site). This document is intended to provide responses to technical comments issued by Alameda County Environmental Health (ACDEH) in a letter dated March 7, 2017 to BART requesting additional information associated with the waste oil underground storage tank (UST) at the BART Maintenance Shop in Oakland, California.

The organization of this technical memorandum is as follows:

- Section 1: Project Background – provides a summary of previous investigation activities, and activities and analytical results of the current investigation
- Section 2: Overview of Data Gaps – summarizes the eight technical comments identified in ACDEH's March 7, 2017 letter to BART and current progress on addressing these issues
- Section 3: Update to Site Conceptual Model – presents the updated site conceptual model incorporating the comments in ACDEH's March 7, 2017 letter
- Section 4: Recommended Actions – summarizes recommended actions and the rationale behind the recommendations

1.0 Project Background

Previous Investigation

Case No. RO0000710 was opened in 1992 following the discovery of leaking tanks during the removal of three USTs(7,000-gallon gasoline UST, 8,000-gallon gasoline UST, and a 7,000-gallon diesel UST) and one underground waste oil tank (500 gallon). A remedial excavation was performed removing approximately 950 cubic yards of contaminated soil to the vertical and lateral extent of contamination[1]. Following four quarters of groundwater monitoring, the case was closed on March 4, 1996 after results indicated that there was no measurable contamination detected in groundwater monitoring wells.

Current Investigation

Under the Certified Unified Program Agency (CUPA), ACDEH reviewed the inspection report summary for the waste oil UST piping removal and replacement conducted in February 2015. According to the report, during the piping replacement, dark colored soil adjacent to the building footing was observed, so one soil sample was collected at approximately one foot beneath the piping joints at the bottom of the trenched excavation. **Tables 1** and **2** summarize the laboratory analyses conducted on the soil sample and the sample results, respectively. The laboratory analytical report is provided in **Appendix A**.

[1] Alameda County Department of Environmental Health (ACDEH). 1996. Remedial Action Completion Certification, BART Maintenance Facility, Oakland, CA. March 4.

Table 1 - Required Sample Analysis for Waste Oil Tanks[1]

Sample Analysis Suite	Required Analytes	Detected Compounds
EPA Method 8260B	TPH-G, BTEX, CLHC, EDB, EDC, MTBE, TAME, ETBE, DIPE, TBA, and EtOH	TPH-G
EPA Method 8015M	TPH-D	TPH-D
SM 5520	Oil and Grease	Oil and Grease
EPA Method 8082	PCBs	None
EPA Method 8270	PCP, PAH, Creosote	None
EPA Method 8270M	1,4-Dioxane	None
SW6010B	Cadmium, Chromium, Lead, Nickel, Zinc	Chromium, Lead, Nickel, Zinc

Notes:
1. Required analytes obtained from Table #2 (Appendix B) provided in an email from Alameda County which is provided in **Appendix B**.

Analyte Acronyms:
TPH-G = Total Petroleum Hydrocarbons as Gasoline
TPH-D = Total Petroleum Hydrocarbons as Diesel
CLHC = Chlorinated Hydrocarbons
EDB = 1,2-Dibromoethane
EDC = 1,2-Dichloroethane
MTBE = Methyl Tert-Butyl Ether
TAME = tert-Amyl Methyl Ether
ETBE = Ethyl tert-Butyl Ether
DIPE = Diisopropyl Ether
TBA = tert-Butanol
EtOH = Ethanol
PCBs = Polychlorinated biphenyls
PCP = Pentachlorophenol
PAH = Polyaromatic Hydrocarbons

Table 2 - Sample Results of Detected Compounds

Detected Compound	Sample ID	Tier 1 ESLs
	OAK-Soil-021315	
	All concentrations shown in mg/kg	
Chromium	28	--
Lead	91	80
Nickel	27	86
Zinc	220	23000
TPH as Gasoline	0.28	100
TPH as Diesel	9.4	230
Total Oil and Grease	450	--

Notes:
1. ESLs = Environmental Screening Levels (Obtained from San Francisco Bay Regional Water Quality Control Board, Tier 1 ESLs, February 2016 (Rev. 3))
2. mg/kg = milligrams per kilogram
3. -- = No ESL established for total chromium or total oil and grease
4. TPH = Total Petroleum Hydrocarbons

ACDEH interpreted these data as an indication of an unauthorized release from the UST system and referred the release to the ACDEH Local Oversight Program (LOP), which subsequently opened the subject case as Fuel Leak Case No. RO0003171.

2.0 Overview of Data Gaps

In their March 7, 2017 letter to BART, ACDEH identified five specific criteria relating to the Low Threat Underground Storage Tank Case Closure Policy (LTCP) that the Site has not met and incorporated them into eight technical comments. **Table 3** summarizes current progress toward addressing these eight technical comments (including the five LTCP criteria deficiencies).

Table 3 - Status of Addressing ACDEH's Technical Comments

ACDEH's Technical Comment	Requested Actions from ACDEH	Status of Completed Action
1. LTCP General Criteria e – Site Conceptual Model	Prepare a Site Conceptual Model and Data Gap Investigation Work Plan	Included in this Technical Memorandum
2. General Criteria f – Secondary Source Removal	Submit a Copy of the Waste Oil UST Piping Removal/Replacement Report	Submitted Digitally on April 7, 2017
3. LTCP Media-Specific Criteria for Groundwater	Address Data Gap in Site Conceptual Model/ Data Gap Investigation Work Plan	Included in this Technical Memorandum
4. LTCP Media-Specific Criteria for Vapor Intrusion to Indoor Air	Address Data Gap in Site Conceptual Model/ Data Gap Investigation Work Plan	Included in this Technical Memorandum
5. LTCP Media-Specific Criteria for Direct Contact and Outdoor Air Exposure	Address Data Gap in Site Conceptual Model/ Data Gap Investigation Work Plan	Included in this Technical Memorandum
6. Data Gap Investigation Work Plan and Site Conceptual Model	Prepare Data Gap Investigation Work Plan to address the technical comments	Included in this Technical Memorandum
7. Claim Site On GeoTracker	Upload all reports prepared after July 1, 2005 to the SWRCB's GeoTracker database website and to the ACDEH ftp website.	All past reports were uploaded on April 7, 2017. This Technical Memorandum will be uploaded on May 8, 2017.
8. Electronic Submittal of Information Compliance	Upload the requested data to GeoTracker	All past reports were uploaded on April 7, 2017. This Technical Memorandum will be uploaded on May 8, 2017.

Notes:

1. LTCP = Low Threat Underground Storage Tank Case Closure Policy
2. ACDEH = Alameda County Department of Environmental Health
3. UST = Underground Storage Tank

3.0 Update to Site Conceptual Model

Per ACDEH request, the updated site conceptual model is presented in tabular form in Table 4.

Table 4 - Site Conceptual Model

CSM Element	CSM Sub Element	Description	Data Gap Item #	Resolution
Geology and Hydrogeology	Site	The geologic boring logs from the former monitoring wells (MW-1A, MW-2A, and MW 3A) constructed in 1994 were used to interpret the lithology at the site. All three boreholes show a similar pattern which indicates that the lithology across the site is relatively uniform. Of the three wells, MW-2A was located closest to the waste oil UST footprint (approximately ten feet downgradient). The geology at this well is summarized below: • ***Artificial Fill Layer (0 to 4 feet below ground surface [bgs]):*** 9-inch cover of asphalt and road base overlying reddish yellow artificial fill material with fragments of wood and brick debris. • ***Low Permeability Zone (4 to 22 feet bgs):*** Alternating layers of medium dense and medium stiff sandy clay and clayey sand grayish brown to olive in color. • ***Saturated Aquifer Zone (22 to 35 feet bgs):*** Saturated zone consisting of light to dark yellowish brown, very dense, silty sand and clayey gravelly sand. During four quarters of groundwater monitoring between June 1994 and April 1995, groundwater at the site was sounded at depths ranging from 21 to 26 feet bgs (elevation range of -9 and -16 feet below mean sea level). The gradient ranged from 0.0088 to 0.0330 in the south-southeast direction. The former monitoring wells were destroyed in 1996 when the case was closed.	None	Not applicable

Table 4 - Site Conceptual Model

CSM Element	CSM Sub Element	Description	Data Gap Item #	Resolution
Surface Water Bodies	Regional	The closest body of water is the San Francisco Bay (Oakland Harbor) which is located approximately 900 feet southwest of the site. Additionally, Lake Merritt is located approximately 0.5 miles to the north-northeast of the site.	None	Not applicable
Nearby Wells	Site	Based on data obtained from the State Water Resource Quality Control Board (RWQCB) Geotracker GAMA website, there are no water supply wells in the downgradient from the site. According to the California Department of Water Resources (DWR) "water data library map viewer" the nearest water supply well is located approximately 0.75 miles to the northeast of the site. There are several active monitoring wells located within a 0.5 mile radius from site including two gas stations and a Port of Oakland facility.	None	Not applicable
Release Source and Volume	Site	In 1989, three underground fuel storage tanks (7,000-gallon gasoline UST, 8,000-gallon gasoline UST, and a 7,000-gallon diesel UST) and one underground waste oil tank (500 gallon) were removed from the site. During removal, perforations along the bottom of the tank were observed. Although an unknown amount of fuel was released, groundwater containing patches of floating product less than 0.25 inches thick was observed in the excavation.	None	Not applicable
Source Removal Activities	Site	Following the removal of the three underground fuel storage tanks and one underground waste oil tank, a remedial excavation was performed between the dates of October 31, 1989 and May 6, 1991. Approximately 950 cubic yards of contaminated soil were excavated, characterized, and disposed in proper landfills. Excavated soil that had analytical results of	None	Not applicable

Table 4 - Site Conceptual Model

CSM Element	CSM Sub Element	Description	Data Gap Item #	Resolution
		less than 100 ppm-TVH and, 10 mg/kg of gasoline and diesel, and less than 0.5 mg/L of soluble lead, were potentially used as backfill in some areas of the site. Three groundwater monitoring wells were installed at the site in 1991 but were subsequently replaced with three new wells in 1994 because the initial three wells were thought to have been screened in a perched water zone. Groundwater analytical data from the wells indicated that there was no measurable contamination detected in groundwater, and the monitoring wells were destroyed when Case RO0000710 was closed in 1996. There have been no other source removal activities conducted at the Site.		
Contaminants of Concern	Site	Prior to the remedial excavations performed from 1989 to 1991, historical COCs consisted of TPH-Gas, TPH-Diesel, benzene, toluene, ethylbenzene, xylenes, oil and grease, and lead. Following the cleanup and subsequent groundwater monitoring, significant decreases in contaminant concentrations were observed leading to site closure.	None	Not applicable

Table 4 - Site Conceptual Model

CSM Element	CSM Sub Element	Description	Data Gap Item #	Resolution
Petroleum Hydrocarbons in Soil	Site	In February 2015, during the waste oil UST piping removal and replacement, single-walled piping was replaced by double-walled fiber glass piping. Dark colored soil was observed adjacent to the building footing, so one soil sample was obtained at a depth of approximately one foot beneath piping joints. The sample analyses and analytical results for this sample are provided in Tables 1 and 2, respectively. The only detected compounds in the soil sample were TPH-Gas, TPH-Diesel, oil and grease, chromium, lead, nickel, and zinc. The detected results were compared to Tier-1 Environmental Screening Levels (ESLs) obtained from San Francisco Bay Regional Water Quality Control Board (February 2016). Tier-1 ESLs are conservative, designed to protect sites with unrestricted land and water use (e.g., residential), shallow soil contamination, shallow ground water, and permeable soil. All results were below Tier-1 ESLs, with the exception of lead, which was 91 mg/kg compared to the Tier 1 ESL of 80 mg/kg.		
Petroleum Hydrocarbons in Groundwater	Site	There are no permanent monitoring wells located at the Site. The monitoring wells installed in 1994 were destroyed in 1996 after groundwater analytical data indicated that there was no measurable contamination detected in groundwater. No additional groundwater data has been collected since then. This is a data gap. Historic groundwater elevations beneath the site are relatively deep (25 to 28 feet bgs) and underlie a thick layer of stiff, fine grained material. The impervious surface cover provided by the concrete and asphalt	Data Gap #1: There are no monitoring wells on site.	Based on past groundwater analytical results indicating no measurable contamination detected in groundwater and current soil results indicating no detections above Tier 1 ESLs (except

Table 4 - Site Conceptual Model

CSM Element	CSM Sub Element	Description	Data Gap Item #	Resolution
		would prevent precipitation and any nuisance water from infiltrating the soil and facilitating leaching to the groundwater. The thick layer of stiff, fine grained material above the known groundwater level would further impede any potential flow.		for lead), it is unlikely that groundwater is impacted. The impervious surface of the site and aquitard layer above the groundwater also provide further protection from potential impacts. Installation of monitoring wells to sample groundwater is not deemed necessary.
Risk Evaluation	Site	The Site is an operating maintenance shop for BART. As shown in Figure 1, there are a couple of structures nearby, including the Main Shop. The tank and pipeline footprint is located outside of the building footprint, and the building foundation consists of a concrete slab several feet thick. The surrounding area is a parking lot and is covered with asphalt. The Site is industrial and as there are no current plans for any redevelopment, expected to remain industrial. Potential receptors include a commercial/industrial worker and a construction worker. The following potential exposure routes were considered: • For direct contact with contaminated soil, the exposure route for incidental ingestion, dermal contact, and dust inhalation for a commercial/industrial worker are considered **incomplete**. The Site is covered by concrete and asphalt.		

Table 4 - Site Conceptual Model

CSM Element	CSM Sub Element	Description	Data Gap Item #	Resolution
		• For direct contact with contaminated soil, the exposure route for incidental ingestion, dermal contact, and dust inhalation for the construction worker are considered potentially **complete**, depending on the nature of the construction work. • For volatilization from soil to outdoor air, vapor inhalation is the potential exposure pathway. Given dilution effects that take place outdoors, this exposure pathway is considered **incomplete** for both the commercial/industrial worker and the construction worker receptors. • For volatilization from soil to indoor air, this exposure pathway is considered potentially **complete** for the commercial/industrial worker. • For leaching of contaminants from soil to groundwater, the ingestion and dermal pathways for groundwater are considered **incomplete**, except for the construction worker, as shallow groundwater is not utilized as a drinking water source at the Site. • For leaching of contaminants from soil to groundwater, incidental ingestion and dermal contact are considered **incomplete** pathways for the construction worker. Groundwater levels are relatively deep (25 to 28 feet bgs) so construction workers are unlikely to encounter groundwater in most typical excavations that extend only 10 feet bgs. • For volatilization from groundwater to outdoor air, the exposure pathway is considered **insignificant** due to dilution effects that take place outdoors.		

Table 4 - Site Conceptual Model

CSM Element	CSM Sub Element	Description	Data Gap Item #	Resolution
		• For volatilization from groundwater to indoor air, the exposure pathway is considered a potentially **complete** pathway. for the commercial/industrial worker.		
Media-Specific Criteria for Vapor Intrusion to Indoor Air		As noted in the Risk Evaluation discussion, volatilization from soil and groundwater to soil vapor that could lead to vapor intrusion to indoor air is a potentially complete exposure pathway for the commercial/industrial worker. No soil vapor data has been collected at the site, so this is a potential data gap. However, low concentrations (below Tier 1 ESLs) of volatile COCs (i.e., BTEX and PAHs were not detected above laboratory reporting limits) in the collected soil sample suggest that volatile chemicals are not present and vapor intrusion is not of concern. In addition, all COC concentrations, except for lead which is not a volatile concern, are below Tier 1 ESLs and the soil is buried beneath a 12- to 18-inch concrete slab which is outside the footprint of the building. No volatile odors were observed during the trenching for piping removal and replacement and soil sample collection.	Data Gap #2: No soil vapor data has been collected.	Although vapor intrusion to indoor air is a potentially complete exposure pathway, volatile compounds were not detected above laboratory reporting limits in the soil sample. Soil vapor sampling is not deemed necessary.
Media-Specific Criteria for Direct Contact and Outdoor Air Exposure		As noted in the Risk Evaluation discussion, the outdoor air exposure pathway is considered to be incomplete for both the commercial/industrial worker and the construction worker receptors. Given dilution effects that take place outdoors, volatilization from soil and groundwater to outdoor air is likely an insignificant exposure pathway.	Data Gap #3: Insufficient data collection and analysis	Soil is buried beneath 12 to 18 inches of concrete slab preventing casual exposure. Also COC concentrations are below Tier 1 ESLs, with the exception of lead.

Table 4 - Site Conceptual Model

CSM Element	CSM Sub Element	Description	Data Gap Item #	Resolution
		For direct contact with contaminated soil, as noted in the Risk Evaluation discussion, incidental ingestion, dermal contact, and dust inhalation are considered incomplete exposure pathways for a commercial/industrial worker because the Site soil is covered by concrete and asphalt. However, during construction activities, the concrete and asphalt may be removed depending on the nature of the construction work and these exposure pathways (ingestion, dermal contact, and dust inhalation of soil) would be complete for a construction worker. As shown in Table 2, all soil concentrations of COCs are below Tier 1 ESLs, with the exception of lead. However, the lead concentration is 91 mg/kg, which is below the ESLs for commercial/industrial sites (32o mg/kg) and direct construction worker exposure (160 mg/kg). Thus, direct contact with soil at the Site by a construction worker is not expected to result in significant risk adversely affecting human health.	for direct contact and outdoor air exposure.	However, the lead concentration is below the ESLs for commercial/industrial sites and direct construction worker exposure. Additional soil sampling is not deemed necessary.

4.0 Recommended Actions

Based on results of the updated site conceptual model, no further investigation activities are recommended or warranted. Analytical results from 2015 soil samples in combination with the physical barriers of the site suggest that exposure risk is quite low and that concentrations are stable and/or decreasing. **Table 5** provides a summary of each data gap item and the primary rationale for the proposed investigation activities.

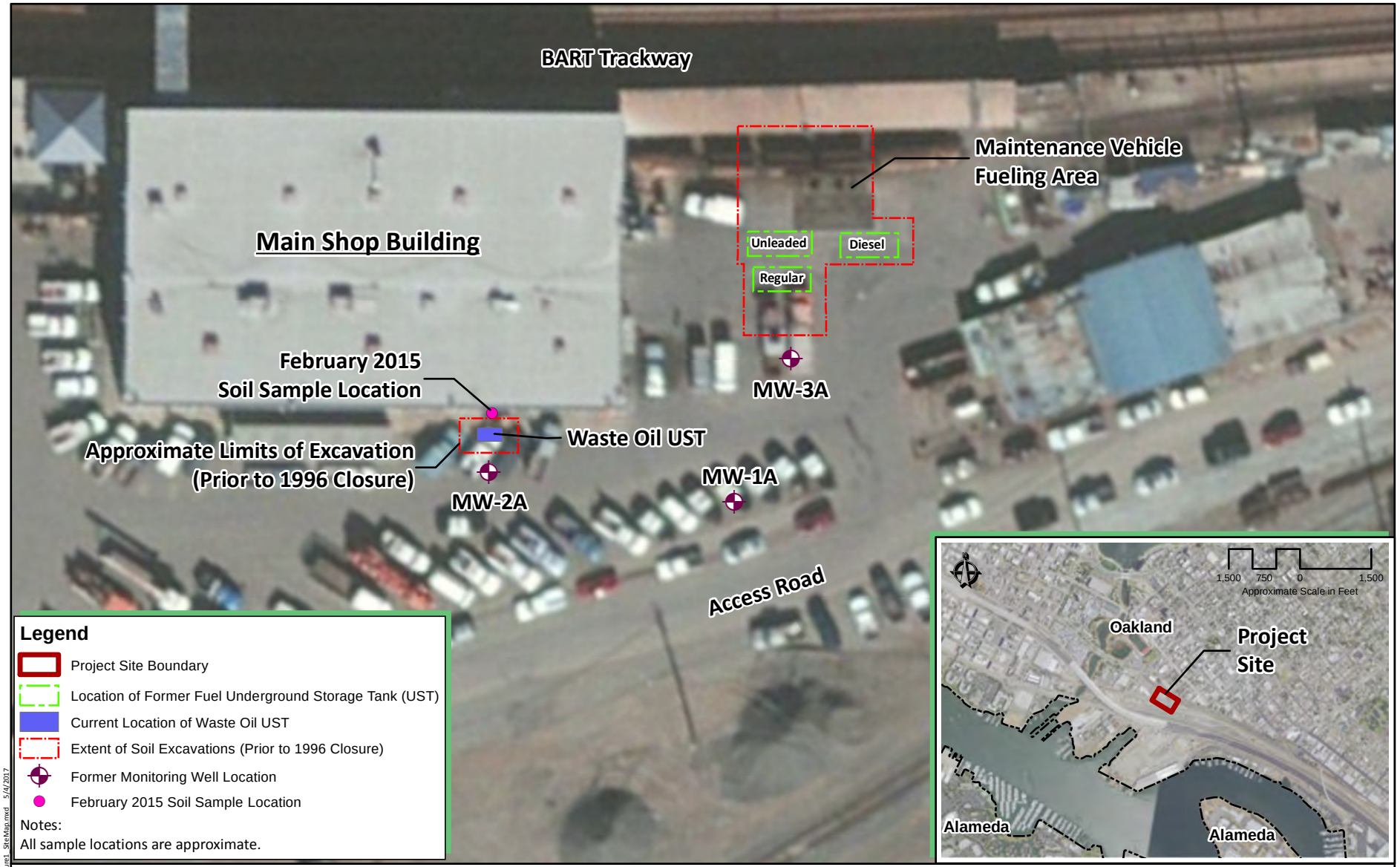
Table 5 - Data Gaps Summary and Proposed Investigation

Data Gap Item #	Recommended Action	Rationale	Analyses
Data Gap #1: Media-Specific Criteria for Groundwater	No Proposed Investigation	Historical groundwater elevations beneath the site are relatively deep (25 to 28 feet bgs) and underlie a thick layer of stiff, fine grained material.	Not applicable
Data Gap #2: Media-Specific Criteria for Vapor Intrusion to Indoor Air	No Proposed Investigation	Volatile COCs were not detected above Tier 1 ESLs in the soil sample. In addition, tank and pipeline footprint is located outside of the building footprint, and the building foundation consists of a concrete slab several feet thick.	Not applicable
Data Gap #3: Media-Specific Criteria for Direct Contact and Outdoor Air Exposure	No Proposed Investigation	Soil concentrations of COCs are below Tier 1 ESLs and are buried beneath 12 to 18 inches of concrete slab.	Not applicable

Notes:

1. COCs = Contaminants of Concern

Attachment: Figure 1 – Site Plan
Appendix A – Laboratory Analytical Data – February 13, 2015
Appendix B – Table#2: "Recommended Minimum Verification Analyses for Underground Tank Leaks", Revised 21 November 2003.



Sources:
1. Aerial Source: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
2. Former UST and Monitoring Well Locations: Remedial Action Completion Certification (ACDEH, 1996)

CDM Smith

50 0 50
Approximate Scale in Feet
1 inch = 50 feet

Figure 1
Site Map
BART Maintenance Shop 601
East 8th Street, Oakland, California

schellerka G:\GIS\8245 TBD\218632\Figure1 SiteMap.mxd 5/4/2017

Appendix A

Laboratory Analytical Data – February 13, 2015

CDM
100 Pringle Ave, Suite 300
Walnut Creek, California 94596
Tel: (925) 933-2900
Fax: 925-933-4174

RE: Oakland, CA BART Maintenance Shop

Work Order No.: 1502101 Rev: 1

Dear Ryan Wood:

Torrent Laboratory, Inc. received 1 sample(s) on February 13, 2015 for the analyses presented in the following Report.

All data for associated QC met EPA or laboratory specification(s) except where noted in the case narrative.

Torrent Laboratory, Inc. is certified by the State of California, ELAP #1991. If you have any questions regarding these test results, please feel free to contact the Project Management Team at (408)263-5258; ext 204.

Yelena Brodskaya
Technical Manager

March 09, 2015
Date

Date: 3/9/2015

Client: CDM

Project: Oakland, CA BART Maintenance Shop

Work Order: 1502101

CASE NARRATIVE

No issues encountered with the receiving, preparation, analysis or reporting of the results associated with this work order.

Unless otherwise indicated in the following narrative, no results have been method and/or field blank corrected.

Reported results relate only to the items/samples tested by the laboratory.

This report shall not be reproduced, except in full, without the written approval of Torrent Analytical, Inc.

No Cresote markers were found in the 8270 analysis, so Cresote analysis was not performed.

Total Oil and Grease reported value was confirmed by second extraction and analysis.

REVISIONS

Per client request, report revised to include data for Ethanol (as a TIC) and metals analysis.

Note for 8260B: No Ethanol was found by TIC (Tentatively identified compounds).

Rev. 1 (3/9/15)

Torrent LABORATORY, INC.

Sample Result Summary

Report prepared for: Ryan Wood
CDM

Date Received: 02/13/15
Date Reported: 03/09/15

OAK-Soil-021315

1502101-001

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
Chromium	SW6010B	1	0.0500	5.0	28	mg/Kg
Lead	SW6010B	1	0.14	1.0	91	mg/Kg
Nickel	SW6010B	1	0.0500	5.0	27	mg/Kg
Zinc	SW6010B	1	0.25	5.0	220	mg/Kg
TPH(Gasoline)	8260TPH	1	30	100	280	ug/Kg
Total Oil and Grease	SM5520(M)	1	39	50	450	mg/Kg
TPH as Diesel	SW8015B(M)	1	0.500	2.0	9.4	mg/Kg

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Ryan Wood
CDM

Date Received: 02/13/15
Date Reported: 03/09/15

Client Sample ID:	OAK-Soil-021315	**Lab Sample ID:**	1502101-001A
Project Name/Location:	Oakland, CA BART Maintenance Shop	**Sample Matrix:**	Soil
Project Number:			
Date/Time Sampled:	02/13/15 / 8:30		

Parameters:	Analysis Method	Prep Date	Date Analyzed	DF	MDL	PQL	Results	Lab Qualifier	Unit	Analytical Batch	Prep Batch
Cadmium	SW6010B	3/3/15	03/03/15	1	0.0550	1.0	ND		mg/Kg	424464	13839
Chromium	SW6010B	3/3/15	03/03/15	1	0.0500	5.0	28		mg/Kg	424464	13839
Lead	SW6010B	3/3/15	03/03/15	1	0.14	1.0	91		mg/Kg	424464	13839
Nickel	SW6010B	3/3/15	03/03/15	1	0.0500	5.0	27		mg/Kg	424464	13839
Zinc	SW6010B	3/3/15	03/03/15	1	0.25	5.0	220		mg/Kg	424464	13839

Parameters:	Analysis Method	Prep Date	Date Analyzed	DF	MDL	PQL	Results	Lab Qualifier	Unit	Analytical Batch	Prep Batch
Aroclor1016	SW8082	2/16/15	02/16/15	1	0.0230	0.10	ND		mg/Kg	424297	13726
Aroclor1221	SW8082	2/16/15	02/16/15	1	0.0920	0.20	ND		mg/Kg	424297	13726
Aroclor1232	SW8082	2/16/15	02/16/15	1	0.0460	0.10	ND		mg/Kg	424297	13726
Aroclor1242	SW8082	2/16/15	02/16/15	1	0.0430	0.10	ND		mg/Kg	424297	13726
Aroclor1248	SW8082	2/16/15	02/16/15	1	0.0360	0.10	ND		mg/Kg	424297	13726
Aroclor1254	SW8082	2/16/15	02/16/15	1	0.0240	0.10	ND		mg/Kg	424297	13726
Aroclor1260	SW8082	2/16/15	02/16/15	1	0.0270	0.10	ND		mg/Kg	424297	13726
TCMX (S)	SW8082	2/16/15	02/16/15	1	50.4	136	103		%	424297	13726
DCBP (S)	SW8082	2/16/15	02/16/15	1	44	128	108		%	424297	13726

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Ryan Wood
CDM

Date Received: 02/13/15
Date Reported: 03/09/15

Client Sample ID: OAK-Soil-021315
Project Name/Location: Oakland, CA BART Maintenance Shop
Project Number:
Date/Time Sampled: 02/13/15 / 8:30

Lab Sample ID: 1502101-001A
Sample Matrix: Soil

Parameters:	Analysis Method	Prep Date	Date Analyzed	DF	MDL	PQL	Results	Lab Qualifier	Unit	Analytical Batch	Prep Batch
Dichlorodifluoromethane	SW8260B	NA	02/19/15	1	4.4	10	ND		ug/Kg	424335	NA
Chloromethane	SW8260B	NA	02/19/15	1	4.6	10	ND		ug/Kg	424335	NA
Vinyl Chloride	SW8260B	NA	02/19/15	1	2.6	10	ND		ug/Kg	424335	NA
Bromomethane	SW8260B	NA	02/19/15	1	4.7	10	ND		ug/Kg	424335	NA
Trichlorofluoromethane	SW8260B	NA	02/19/15	1	2.9	10	ND		ug/Kg	424335	NA
1,1-Dichloroethene	SW8260B	NA	02/19/15	1	1.5	10	ND		ug/Kg	424335	NA
Freon 113	SW8260B	NA	02/19/15	1	3.7	10	ND		ug/Kg	424335	NA
Methylene Chloride	SW8260B	NA	02/19/15	1	2.0	50	ND		ug/Kg	424335	NA
trans-1,2-Dichloroethene	SW8260B	NA	02/19/15	1	1.1	10	ND		ug/Kg	424335	NA
MTBE	SW8260B	NA	02/19/15	1	2.6	10	ND		ug/Kg	424335	NA
tert-Butanol	SW8260B	NA	02/19/15	1	21	50	ND		ug/Kg	424335	NA
Diisopropyl ether (DIPE)	SW8260B	NA	02/19/15	1	2.2	10	ND		ug/Kg	424335	NA
1,1-Dichloroethane	SW8260B	NA	02/19/15	1	1.3	10	ND		ug/Kg	424335	NA
ETBE	SW8260B	NA	02/19/15	1	2.4	10	ND		ug/Kg	424335	NA
cis-1,2-Dichloroethene	SW8260B	NA	02/19/15	1	1.8	10	ND		ug/Kg	424335	NA
2,2-Dichloropropane	SW8260B	NA	02/19/15	1	1.2	10	ND		ug/Kg	424335	NA
Bromochloromethane	SW8260B	NA	02/19/15	1	2.3	10	ND		ug/Kg	424335	NA
Chloroform	SW8260B	NA	02/19/15	1	1.2	10	ND		ug/Kg	424335	NA
Carbon Tetrachloride	SW8260B	NA	02/19/15	1	1.6	10	ND		ug/Kg	424335	NA
1,1,1-Trichloroethane	SW8260B	NA	02/19/15	1	1.2	10	ND		ug/Kg	424335	NA
1,1-Dichloropropene	SW8260B	NA	02/19/15	1	1.4	10	ND		ug/Kg	424335	NA
Benzene	SW8260B	NA	02/19/15	1	1.5	10	ND		ug/Kg	424335	NA
TAME	SW8260B	NA	02/19/15	1	2.1	10	ND		ug/Kg	424335	NA
1,2-Dichloroethane	SW8260B	NA	02/19/15	1	1.9	10	ND		ug/Kg	424335	NA
Trichloroethylene	SW8260B	NA	02/19/15	1	3.9	10	ND		ug/Kg	424335	NA
Dibromomethane	SW8260B	NA	02/19/15	1	2.2	10	ND		ug/Kg	424335	NA
1,2-Dichloropropane	SW8260B	NA	02/19/15	1	1.3	10	ND		ug/Kg	424335	NA
Bromodichloromethane	SW8260B	NA	02/19/15	1	1.1	10	ND		ug/Kg	424335	NA
1,4-Dioxane	SW8260B	NA	02/19/15	1	200	200	ND		ug/Kg	424335	NA
cis-1,3-Dichloropropene	SW8260B	NA	02/19/15	1	1.4	10	ND		ug/Kg	424335	NA
Toluene	SW8260B	NA	02/19/15	1	0.98	10	ND		ug/Kg	424335	NA
Tetrachloroethylene	SW8260B	NA	02/19/15	1	1.8	10	ND		ug/Kg	424335	NA
trans-1,3-Dichloropropene	SW8260B	NA	02/19/15	1	1.2	10	ND		ug/Kg	424335	NA
1,1,2-Trichloroethane	SW8260B	NA	02/19/15	1	1.8	10	ND		ug/Kg	424335	NA
Dibromochloromethane	SW8260B	NA	02/19/15	1	1.1	10	ND		ug/Kg	424335	NA
1,3-Dichloropropane	SW8260B	NA	02/19/15	1	2.1	10	ND		ug/Kg	424335	NA
1,2-Dibromoethane	SW8260B	NA	02/19/15	1	1.7	10	ND		ug/Kg	424335	NA

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Ryan Wood
CDM

Date Received: 02/13/15
Date Reported: 03/09/15

Client Sample ID: OAK-Soil-021315
Lab Sample ID: 1502101-001A
Project Name/Location: Oakland, CA BART Maintenance Shop
Sample Matrix: Soil
Project Number:
Date/Time Sampled: 02/13/15 / 8:30

Parameters:	Analysis Method	Prep Date	Date Analyzed	DF	MDL	PQL	Results	Lab Qualifier	Unit	Analytical Batch	Prep Batch
Ethyl Benzene	SW8260B	NA	02/19/15	1	0.86	10	ND		ug/Kg	424335	NA
Chlorobenzene	SW8260B	NA	02/19/15	1	4.2	10	ND		ug/Kg	424335	NA
1,1,1,2-Tetrachloroethane	SW8260B	NA	02/19/15	1	0.86	10	ND		ug/Kg	424335	NA
m,p-Xylene	SW8260B	NA	02/19/15	1	1.9	10	ND		ug/Kg	424335	NA
o-Xylene	SW8260B	NA	02/19/15	1	0.66	5.0	ND		ug/Kg	424335	NA
Styrene	SW8260B	NA	02/19/15	1	0.77	10	ND		ug/Kg	424335	NA
Bromoform	SW8260B	NA	02/19/15	1	1.9	10	ND		ug/Kg	424335	NA
Isopropyl Benzene	SW8260B	NA	02/19/15	1	1.2	10	ND		ug/Kg	424335	NA
n-Propylbenzene	SW8260B	NA	02/19/15	1	1.4	10	ND		ug/Kg	424335	NA
Bromobenzene	SW8260B	NA	02/19/15	1	1.2	10	ND		ug/Kg	424335	NA
1,1,2,2-Tetrachloroethane	SW8260B	NA	02/19/15	1	3.0	10	ND		ug/Kg	424335	NA
1,3,5-Trimethylbenzene	SW8260B	NA	02/19/15	1	1.1	10	ND		ug/Kg	424335	NA
1,2,3-Trichloropropane	SW8260B	NA	02/19/15	1	3.3	10	ND		ug/Kg	424335	NA
4-Chlorotoluene	SW8260B	NA	02/19/15	1	1.6	10	ND		ug/Kg	424335	NA
2-Chlorotoluene	SW8260B	NA	02/19/15	1	1.6	10	ND		ug/Kg	424335	NA
tert-Butylbenzene	SW8260B	NA	02/19/15	1	1.4	10	ND		ug/Kg	424335	NA
1,2,4-Trimethylbenzene	SW8260B	NA	02/19/15	1	1.1	10	ND		ug/Kg	424335	NA
sec-Butyl Benzene	SW8260B	NA	02/19/15	1	1.6	10	ND		ug/Kg	424335	NA
p-Isopropyltoluene	SW8260B	NA	02/19/15	1	1.5	10	ND		ug/Kg	424335	NA
1,3-Dichlorobenzene	SW8260B	NA	02/19/15	1	1.8	10	ND		ug/Kg	424335	NA
1,4-Dichlorobenzene	SW8260B	NA	02/19/15	1	1.5	10	ND		ug/Kg	424335	NA
n-Butylbenzene	SW8260B	NA	02/19/15	1	2.2	10	ND		ug/Kg	424335	NA
1,2-Dichlorobenzene	SW8260B	NA	02/19/15	1	1.3	10	ND		ug/Kg	424335	NA
1,2-Dibromo-3-Chloropropane	SW8260B	NA	02/19/15	1	4.2	10	ND		ug/Kg	424335	NA
Hexachlorobutadiene	SW8260B	NA	02/19/15	1	2.6	10	ND		ug/Kg	424335	NA
1,2,4-Trichlorobenzene	SW8260B	NA	02/19/15	1	2.1	10	ND		ug/Kg	424335	NA
Naphthalene	SW8260B	NA	02/19/15	1	2.8	10	ND		ug/Kg	424335	NA
1,2,3-Trichlorobenzene	SW8260B	NA	02/19/15	1	2.9	10	ND		ug/Kg	424335	NA
(S) Dibromofluoromethane	SW8260B	NA	02/19/15	1	59.8	148	117		%	424335	NA
(S) Toluene-d8	SW8260B	NA	02/19/15	1	55.2	133	109		%	424335	NA
(S) 4-Bromofluorobenzene	SW8260B	NA	02/19/15	1	55.8	141	117		%	424335	NA

NOTE: No Ethanol was found by TIC (Tentatively identified compounds).

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Ryan Wood
CDM

Date Received: 02/13/15
Date Reported: 03/09/15

Client Sample ID: OAK-Soil-021315
Project Name/Location: Oakland, CA BART Maintenance Shop
Project Number:
Date/Time Sampled: 02/13/15 / 8:30

Lab Sample ID: 1502101-001A
Sample Matrix: Soil

Parameters:	Analysis Method	Prep Date	Date Analyzed	DF	MDL	PQL	Results	Lab Qualifier	Unit	Analytical Batch	Prep Batch
2-Methylphenol (o-Cresol)	SW8270C	2/16/15	02/16/15	1	0.126	0.720	ND		mg/Kg	424284	13725
3-/4-Methylphenol (p-/m-Cresol)	SW8270C	2/16/15	02/16/15	1	0.151	0.720	ND		mg/Kg	424284	13725

Parameters:	Analysis Method	Prep Date	Date Analyzed	DF	MDL	PQL	Results	Lab Qualifier	Unit	Analytical Batch	Prep Batch
Pentachlorophenol	SW8270C	2/16/15	02/16/15	1	0.111	0.720	ND		mg/Kg	424284	13725
2,4,6-Tribromophenol (S)	SW8270C	2/16/15	02/16/15	1	19	122	89.1		%	424284	13725
2-Fluorobiphenyl (S)	SW8270C	2/16/15	02/16/15	1	30	115	84.3		%	424284	13725
2-Fluorophenol (S)	SW8270C	2/16/15	02/16/15	1	25	121	99.9		%	424284	13725
Nitrobenzene-d5 (S)	SW8270C	2/16/15	02/16/15	1	23	120	75.5		%	424284	13725
Phenol-d6 (S)	SW8270C	2/16/15	02/16/15	1	24	113	95.4		%	424284	13725
p-Terphenyl-d14 (S)	SW8270C	2/16/15	02/16/15	1	18	137	98.5		%	424284	13725

Parameters:	Analysis Method	Prep Date	Date Analyzed	DF	MDL	PQL	Results	Lab Qualifier	Unit	Analytical Batch	Prep Batch
Naphthalene	SW8270C	2/16/15	02/16/15	1	0.1685	0.356	ND		mg/Kg	424284	13725
2-Methylnaphthalene	SW8270C	2/16/15	02/16/15	1	0.1145	0.356	ND		mg/Kg	424284	13725
1-Methylnaphthalene	SW8270C	2/16/15	02/16/15	1	0.1145	0.356	ND		mg/Kg	424284	13725
Acenaphthylene	SW8270C	2/16/15	02/16/15	1	0.1073	0.356	ND		mg/Kg	424284	13725
Acenaphthene	SW8270C	2/16/15	02/16/15	1	0.1181	0.356	ND		mg/Kg	424284	13725
Fluorene	SW8270C	2/16/15	02/16/15	1	0.06048	0.356	ND		mg/Kg	424284	13725
Phenanthrene	SW8270C	2/16/15	02/16/15	1	0.1469	0.356	ND		mg/Kg	424284	13725
Anthracene	SW8270C	2/16/15	02/16/15	1	0.1872	0.356	ND		mg/Kg	424284	13725
Fluoranthene	SW8270C	2/16/15	02/16/15	1	0.1771	0.356	ND		mg/Kg	424284	13725
Pyrene	SW8270C	2/16/15	02/16/15	1	0.1375	0.356	ND		mg/Kg	424284	13725
Benz[a]anthracene	SW8270C	2/16/15	02/16/15	1	0.2153	0.356	ND		mg/Kg	424284	13725
Chrysene	SW8270C	2/16/15	02/16/15	1	0.1274	0.716	ND		mg/Kg	424284	13725
Benzo[b]fluoranthene	SW8270C	2/16/15	02/16/15	1	0.1462	0.356	ND		mg/Kg	424284	13725
Benzo[k]fluoranthene	SW8270C	2/16/15	02/16/15	1	0.09432	0.356	ND		mg/Kg	424284	13725
Benzo[a]pyrene	SW8270C	2/16/15	02/16/15	1	0.1620	0.356	ND		mg/Kg	424284	13725
Indeno[1,2,3-cd]pyrene	SW8270C	2/16/15	02/16/15	1	0.09072	0.356	ND		mg/Kg	424284	13725
Dibenz[a,h]anthracene	SW8270C	2/16/15	02/16/15	1	0.04896	0.356	ND		mg/Kg	424284	13725
Benzo[g,h,i]perylene	SW8270C	2/16/15	02/16/15	1	0.05400	0.356	ND		mg/Kg	424284	13725
2-Fluorobiphenyl (S)	SW8270C	2/16/15	02/16/15	1	30	115	84.3		%	424284	13725
p-Terphenyl-d14 (S)	SW8270C	2/16/15	02/16/15	1	37.9	127	98.5		%	424284	13725

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Ryan Wood
CDM

Date Received: 02/13/15
Date Reported: 03/09/15

Client Sample ID:	OAK-Soil-021315	**Lab Sample ID:**	1502101-001A
Project Name/Location:	Oakland, CA BART Maintenance Shop	**Sample Matrix:**	Soil
Project Number:			
Date/Time Sampled:	02/13/15 / 8:30		

Parameters:	Analysis Method	Prep Date	Date Analyzed	DF	MDL	PQL	Results	Lab Qualifier	Unit	Analytical Batch	Prep Batch
TPH(Gasoline)	8260TPH	2/19/15	02/19/15	1	30	100	280	x	ug/Kg	424335	13758
(S) 4-Bromofluorobenzene	8260TPH	2/19/15	02/19/15	1	43.9	127	91.9		%	424335	13758

NOTE: x - Does not match pattern of reference Gasoline standard. Hydrocarbons in the range of C5-C12 quantified as Gasoline.

Parameters:	Analysis Method	Prep Date	Date Analyzed	DF	MDL	PQL	Results	Lab Qualifier	Unit	Analytical Batch	Prep Batch
Total Oil and Grease	SM5520(M)	2/23/15	02/23/15	1	39	50	450		mg/Kg	424362	13777

Parameters:	Analysis Method	Prep Date	Date Analyzed	DF	MDL	PQL	Results	Lab Qualifier	Unit	Analytical Batch	Prep Batch
TPH as Diesel	SW8015B(M)	2/12/15	02/16/15	1	0.500	2.0	9.4	x	mg/Kg	424274	13705
Pentacosane (S)	SW8015B(M)	2/12/15	02/16/15	1	57.9	129	115		%	424274	13705

NOTE: x- Diesel result due to over-lapping of oil range organics within diesel quantified range.

MB Summary Report

Work Order:	1502101	**Prep Method:**	3546_TPHSG	**Prep Date:**	02/12/15	**Prep Batch:**	13705
Matrix:	Soil	**Analytical Method:**	SW8015B(M)	**Analyzed Date:**	02/12/15	**Analytical Batch:**	424256
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
TPH as Diesel (SG)	0.66	2.0	ND	
TPH as Motor Oil (SG)	1.0	10	ND	
Pentacosane (S)			99.6	

Work Order:	1502101	**Prep Method:**	3546_SVOSIM	**Prep Date:**	02/16/15	**Prep Batch:**	13724
Matrix:	Soil	**Analytical Method:**	SW8270C	**Analyzed Date:**	02/16/15	**Analytical Batch:**	424284
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier

Work Order:	1502101	**Prep Method:**	3546_SVO	**Prep Date:**	02/16/15	**Prep Batch:**	13725
Matrix:	Soil	**Analytical Method:**	SW8270C	**Analyzed Date:**	02/16/15	**Analytical Batch:**	424284
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Pyridine	0.0864	1.08	ND	
N-Nitrosdimethylamine	0.120	1.08	ND	
Aniline	0.134	0.360	ND	
Phenol	0.140	0.720	ND	
Bis(2-chloroethyl) ether	0.0745	0.360	ND	
2-Chlorophenol	0.140	0.360	ND	
1,3-Dichlorobenzene	0.0799	0.360	ND	
1,4-Dichlorobenzene	0.0724	0.360	ND	
Benzyl Alcohol	0.113	1.08	ND	
1,2-Dichlorobenzene	0.0778	0.360	ND	
2-Methylphenol (o-Cresol)	0.126	0.720	ND	
Bis(2-chloroisopropyl)ether	0.0745	0.360	ND	
3-/4-Methylphenol (p-/m-Cresol)	0.151	0.720	ND	
N-nitroso-di-n-propylamine	0.102	0.360	ND	
Hexachloroethane	0.0508	0.360	ND	
Nitrobenzene	0.0576	0.360	ND	
Isophorone	0.0626	0.360	ND	
2-Nitrophenol	0.0572	0.720	ND	
2,4-Dimethylphenol	0.145	0.720	ND	
Benzoic Acid	0.0610	1.08	ND	

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	1502101	**Prep Method:**	3546_SVO	**Prep Date:**	02/16/15	**Prep Batch:**	13725
Matrix:	Soil	**Analytical Method:**	SW8270C	**Analyzed Date:**	02/16/15	**Analytical Batch:**	424284
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Bis(2-Chloroethoxy)methane	0.0637	0.360	ND	
2,4-Dichlorophenol	0.113	0.720	ND	
1,2,4-Trichlorobenzene	0.0799	0.360	ND	
2,6-Dichlorophenol	0.113	0.720	ND	
Naphthalene	0.0983	0.360	ND	
4-Chloroaniline	0.108	0.360	ND	
Hexachloro-1,3-butadiene	0.0713	0.360	ND	
4-Chloro-3-methylphenol	0.111	0.720	ND	
2-Methylnaphthalene	0.0864	0.360	ND	
1-Methylnaphthalene	0.0864	0.360	ND	
Hexachlorocyclopentadiene	0.0302	0.360	ND	
2,4,6-Trichlorophenol	0.104	0.720	ND	
2,4,5-Trichlorophenol	0.132	0.720	ND	
2-Chloronaphthalene	0.0648	0.360	ND	
2-Nitroaniline	0.0756	0.360	ND	
Dimethyl phthalate	0.129	0.360	ND	
1,3-Dinitrobenzene	0.115	0.360	ND	
Acenaphthylene	0.0929	0.360	ND	
2,6-Dinitrotoluene	0.0292	0.360	ND	
1,2-Dinitrobenzene	0.0936	0.360	ND	
3-Nitroaniline	0.0756	0.360	ND	
Acenaphthene	0.105	0.360	ND	
2,4-Dinitrophenol	0.0324	1.80	ND	
4-Nitrophenol	0.0724	1.80	ND	
Dibenzofuran	0.0853	0.360	ND	
2,4-Dinitrotoluene	0.0292	0.360	ND	
2,3,5,6-Tetrachlorophenol	0.130	0.720	ND	
2,3,4,6-Tetrachlorophenol	0.130	0.720	ND	
Diethylphthalate	0.127	3.60	ND	
Fluorene	0.108	0.360	ND	
4-Chlorophenyl phenyl ether	0.0875	0.360	ND	
4-Nitroaniline	0.0875	0.360	ND	
4,6-Dinitro-2-methylphenol	0.0724	0.720	ND	
Diphenylamine	0.0724	0.360	ND	
Azobenzene	0.119	0.360	ND	
4-Bromophenyl phenyl ether	0.0886	0.360	ND	
Hexachlorobenzene	0.110	0.360	ND	
Pentachlorophenol	0.111	0.720	ND	
Phenanthrene	0.154	0.360	ND	
Anthracene	0.145	0.360	ND	
Carbazole	0.145	0.360	ND	

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	1502101	**Prep Method:**	3546_SVO	**Prep Date:**	02/16/15	**Prep Batch:**	13725
Matrix:	Soil	**Analytical Method:**	SW8270C	**Analyzed Date:**	02/16/15	**Analytical Batch:**	424284
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Di-n-butylphthalate	0.118	3.60	ND	
Fluoranthene	0.144	0.360	ND	
Benzidine	0.408	1.08	ND	
Pyrene	0.160	0.360	ND	
Benzyl butyl phthalate	0.0972	3.60	ND	
Benz[a]anthracene	0.163	0.360	ND	
3,3'-Dichlorobenzidine	0.166	1.08	ND	
Chrysene	0.192	0.360	ND	
Bis(2-Ethylhexyl)phthalate	0.0907	3.60	ND	
Di-n-octyl phthalate	0.150	0.360	ND	
Benzo[b]fluoranthene	0.145	0.360	ND	
Benzo[k]fluoranthene	0.185	0.360	ND	
Benzo[a]pyrene	0.147	0.360	ND	
Indeno[1,2,3-cd]pyrene	0.143	0.360	ND	
Dibenz[a,h]anthracene	0.165	0.360	ND	
Benzo[g,h,i]perylene	0.164	0.360	ND	
1,4-Dinitrobenzene	0.164	0.360	ND	
2,4,6-Tribromophenol (S)			77.6	
2-Fluorobiphenyl (S)			84.0	
2-Fluorophenol (S)			102	
Nitrobenzene-d5 (S)			75.0	
Phenol-d6 (S)			94.0	
p-Terphenyl-d14 (S)			104	

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	1502101	**Prep Method:**	3546_PCB	**Prep Date:**	02/16/15	**Prep Batch:**	13726
Matrix:	Soil	**Analytical Method:**	SW8082	**Analyzed Date:**	02/16/15	**Analytical Batch:**	424297
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Aroclor1016	0.0230	0.10	ND	
Aroclor1221	0.0920	0.20	ND	
Aroclor1232	0.0460	0.10	ND	
Aroclor1242	0.0430	0.10	ND	
Aroclor1248	0.0360	0.10	ND	
Aroclor1254	0.0240	0.10	ND	
Aroclor1260	0.0270	0.10	ND	
Aroclor1268	0.0270	0.10	ND	
TCMX (S)			101	
DCBP (S)			107	

Work Order:	1502101	**Prep Method:**	5035	**Prep Date:**	02/19/15	**Prep Batch:**	13758
Matrix:	Soil	**Analytical Method:**	8260TPH	**Analyzed Date:**	02/19/15	**Analytical Batch:**	424335
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
TPH(Gasoline)	30	100	52	
(S) 4-Bromofluorobenzene			121	

Work Order:	1502101	**Prep Method:**	5520M_TOG/TRPH	**Prep Date:**	02/23/15	**Prep Batch:**	13777
Matrix:	Soil	**Analytical Method:**	SM5520(M)	**Analyzed Date:**	02/23/15	**Analytical Batch:**	424362
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Total Oil and Grease	39	50	ND	

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	1502101	**Prep Method:**	3050	**Prep Date:**	03/03/15	**Prep Batch:**	13839
Matrix:	Soil	**Analytical Method:**	SW6010B	**Analyzed Date:**	03/03/15	**Analytical Batch:**	424464
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
Antimony	0.20	5.0	ND		
Arsenic	0.25	1.7	ND		
Barium	0.07	5.0	0.78		
Beryllium	0.0800	2.0	ND		
Cadmium	0.055	1.0	ND		
Chromium	0.050	5.0	0.28		
Cobalt	0.055	5.0	0.11		
Copper	0.65	5.0	1.3		
Lead	0.14	1.0	ND		
Molybdenum	0.12	5.0	ND		
Nickel	0.050	5.0	0.17		
Selenium	0.42	5.0	ND		
Silver	0.37	5.0	ND		
Thallium	0.49	5.0	ND		
Vanadium	0.18	5.0	ND		
Zinc	0.25	5.0	ND		

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MB Summary Report

Work Order:	1502101	**Prep Method:**	NA	**Prep Date:**	NA	**Prep Batch:**	NA
Matrix:	Soil	**Analytical Method:**	SW8260B	**Analyzed Date:**	02/19/15	**Analytical Batch:**	424335
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
Dichlorodifluoromethane	4.4	10	ND		
Chloromethane	4.6	10	ND		
Vinyl Chloride	2.6	10	ND		
Bromomethane	4.7	10	ND		
Trichlorofluoromethane	2.9	10	ND		
1,1-Dichloroethene	1.5	10	ND		
Freon 113	3.7	10	ND		
Methylene Chloride	2.0	50	ND		
trans-1,2-Dichloroethene	1.1	10	ND		
MTBE	2.6	10	ND		
tert-Butanol	21	50	ND		
Diisopropyl ether (DIPE)	2.2	10	ND		
1,1-Dichloroethane	1.3	10	ND		
ETBE	2.4	10	ND		
cis-1,2-Dichloroethene	1.8	10	ND		
2,2-Dichloropropane	1.2	10	ND		
Bromochloromethane	2.3	10	ND		
Chloroform	1.2	10	ND		
Carbon Tetrachloride	1.6	10	ND		
1,1,1-Trichloroethane	1.2	10	ND		
1,1-Dichloropropene	1.4	10	ND		
Benzene	1.5	10	ND		
TAME	2.1	10	ND		
1,2-Dichloroethane	1.9	10	ND		
Trichloroethylene	3.9	10	ND		
Dibromomethane	2.2	10	ND		
1,2-Dichloropropane	1.3	10	ND		
Bromodichloromethane	1.1	10	ND		
cis-1,3-Dichloropropene	1.4	10	ND		
Toluene	0.98	10	ND		
Tetrachloroethylene	1.8	10	ND		
trans-1,3-Dichloropropene	1.2	10	ND		
1,1,2-Trichloroethane	1.8	10	ND		
Dibromochloromethane	1.1	10	ND		
1,3-Dichloropropane	2.1	10	ND		
1,2-Dibromoethane	1.7	10	ND		
Ethyl Benzene	0.86	10	ND		
Chlorobenzene	4.2	10	ND		
1,1,1,2-Tetrachloroethane	0.86	10	ND		
m,p-Xylene	1.9	10	ND		
o-Xylene	0.66	5.0	0.84		

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	1502101	**Prep Method:**	NA	**Prep Date:**	NA	**Prep Batch:**	NA
Matrix:	Soil	**Analytical Method:**	SW8260B	**Analyzed Date:**	02/19/15	**Analytical Batch:**	424335
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
Styrene	0.77	10	1.4		
Bromoform	1.9	10	ND		
Isopropyl Benzene	1.2	10	ND		
n-Propylbenzene	1.4	10	ND		
Bromobenzene	1.2	10	ND		
1,1,2,2-Tetrachloroethane	3.0	10	ND		
1,3,5-Trimethylbenzene	1.1	10	ND		
1,2,3-Trichloropropane	3.3	10	ND		
4-Chlorotoluene	1.6	10	ND		
2-Chlorotoluene	1.6	10	ND		
tert-Butylbenzene	1.4	10	ND		
1,2,4-Trimethylbenzene	1.1	10	ND		
sec-Butyl Benzene	1.6	10	ND		
p-Isopropyltoluene	1.5	10	ND		
1,3-Dichlorobenzene	1.8	10	ND		
1,4-Dichlorobenzene	1.5	10	ND		
n-Butylbenzene	2.2	10	ND		
1,2-Dichlorobenzene	1.3	10	ND		
1,2-Dibromo-3-Chloropropane	4.2	10	ND		
Hexachlorobutadiene	2.6	10	ND		
1,2,4-Trichlorobenzene	2.1	10	ND		
Naphthalene	2.8	10	ND		
1,2,3-Trichlorobenzene	2.9	10	ND		
Ethanol	5.0	20	ND	TIC	
(S) Dibromofluoromethane			110		
(S) Toluene-d8			104		
(S) 4-Bromofluorobenzene			107		

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LCS/LCSD Summary Report

Raw values are used in quality control assessment.

Work Order:	1502101	**Prep Method:**	3546_TPHSG	**Prep Date:**	02/12/15	**Prep Batch:**	13705
Matrix:	Soil	**Analytical Method:**	SW8015B(M)	**Analyzed Date:**	02/12/15	**Analytical Batch:**	424256
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
TPH as Diesel (SG)	0.66	2.0	ND	25	80.0	93.5	15.6	50.8 - 111	30	
Pentacosane (S)			ND	200	123	117		49.9 - 144		

Work Order:	1502101	**Prep Method:**	3546_SVOSIM	**Prep Date:**	02/16/15	**Prep Batch:**	13724
Matrix:	Soil	**Analytical Method:**	SW8270C	**Analyzed Date:**	02/16/15	**Analytical Batch:**	424284
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier

Work Order:	1502101	**Prep Method:**	3546_SVO	**Prep Date:**	02/16/15	**Prep Batch:**	13725
Matrix:	Soil	**Analytical Method:**	SW8270C	**Analyzed Date:**	02/16/15	**Analytical Batch:**	424284
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Phenol	0.140	0.72	ND	1.6	80.4	85.6	6.12	40 - 116	30	
2-Chlorophenol	0.140	0.36	ND	1.6	76.6	82.2	7.06	59.3 - 97.0	30	
1,4-Dichlorobenzene	0.0724	0.36	ND	0.8	79.2	82.4	3.90	42.0 - 111	30	
N-nitroso-di-n-propylamine	0.102	0.36	ND	1.6	80.0	84.7	5.57	25.0 - 135	30	
1,2,4-Trichlorobenzene	0.0799	0.36	ND	0.8	82.1	86.7	5.46	41.0 - 120	30	
4-Chloro-3-methylphenol	0.111	0.72	ND	1.6	77.6	83.0	6.45	46 - 121	30	
Acenaphthene	0.105	0.36	ND	0.8	78.4	80.3	2.37	47.0 - 121	30	
4-Nitrophenol	0.0724	1.8	ND	1.6	51.8	55.7	7.43	18 - 131	30	
2,4-Dinitrotoluene	0.0292	0.36	ND	0.8	76.9	81.5	5.74	57 - 120	30	
Pentachlorophenol	0.111	0.72	ND	1.6	82.3	86.7	5.10	24.6 - 141	30	
Pyrene	0.160	0.36	ND	0.8	77.4	80.6	4.03	58.6 - 132	30	
Phenol-d6 (S)			ND	40	85.7	91.2		37.9 - 125		
2-Fluorophenol (S)			ND	40	82.6	88.0		31.2 - 128		
2,4,6-Tribromophenol (S)			ND	40	88.1	89.6		41.8 - 121		
Nitrobenzene-d5 (S)			ND	20	78.3	84.0		37.9 - 122		
2-Fluorobiphenyl (S)			ND	20	81.3	84.3		44.3 - 118		
p-Terphenyl-d14 (S)			ND	20	96.4	98.4		38.2 - 147		

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LCS/LCSD Summary Report

Raw values are used in quality control assessment.

Work Order:	1502101	**Prep Method:**	3546_PCB	**Prep Date:**	02/16/15	**Prep Batch:**	13726
Matrix:	Soil	**Analytical Method:**	SW8082	**Analyzed Date:**	02/16/15	**Analytical Batch:**	424297
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Aroclor1016	0.0230	0.10	ND	0.625	103	96.6	6.81	55.6 - 135	30	
Aroclor1260	0.0270	0.10	ND	0.625	105	102	2.71	65.6 - 132	30	
TCMX (S)			ND	0.50	100	102		50.4 - 136		
DCBP (S)			ND	0.50	107	110		44 - 128		

Work Order:	1502101	**Prep Method:**	5035	**Prep Date:**	02/19/15	**Prep Batch:**	13758
Matrix:	Soil	**Analytical Method:**	8260TPH	**Analyzed Date:**	02/19/15	**Analytical Batch:**	424335
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
TPH(Gasoline)	30	100	52	1000	113	98.0	14.4	64.0 - 133.2	30	
(S) 4-Bromofluorobenzene			121	50	120	116		43.9 - 127		

Work Order:	1502101	**Prep Method:**	5520M_TOG/TRPH	**Prep Date:**	02/23/15	**Prep Batch:**	13777
Matrix:	Soil	**Analytical Method:**	SW9014	**Analyzed Date:**	02/23/15	**Analytical Batch:**	424362
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Total Oil and Grease	39	50	ND	2000	76.8	84.8	9.58	60 - 140	30	

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LCS/LCSD Summary Report

Raw values are used in quality control assessment.

Work Order:	1502101	**Prep Method:**	3050	**Prep Date:**	03/03/15	**Prep Batch:**	13839
Matrix:	Soil	**Analytical Method:**	SW6010B	**Analyzed Date:**	03/03/15	**Analytical Batch:**	424464
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Antimony	0.20	5.0	ND	50	97.3	101	3.53	30.7 - 130	30	
Arsenic	0.25	1.7	ND	50	101	102	0.592	71 - 121	30	
Barium	0.07	5.0	0.78	50	105	103	1.63	70.2 - 130	30	
Beryllium	0.0800	2.0	ND	50	99.8	98.5	1.36	73.3 - 115	30	
Cadmium	0.055	1.0	ND	50	95.7	98.7	3.09	68.7 - 110	30	
Chromium	0.050	5.0	0.28	50	101	104	2.93	76 - 116	30	
Cobalt	0.055	5.0	0.11	50	98.7	102	3.29	57.4 - 122	30	
Copper	0.65	5.0	1.3	50	105	103	2.21	74.8 - 119	30	
Lead	0.14	1.0	ND	50	97.6	101	3.52	67.9 - 118	30	
Molybdenum	0.12	5.0	ND	50	102	105	3.09	62.9 - 123	30	
Nickel	0.050	5.0	0.17	50	98.0	101	3.41	61.5 - 122	30	
Selenium	0.42	5.0	ND	50	93.9	98.6	4.90	62 - 111	30	
Silver	0.37	5.0	ND	50	98.7	98.4	0.304	81.1 - 109	30	
Thallium	0.49	5.0	ND	50	99.9	106	6.02	39.2 - 125	30	
Vanadium	0.18	5.0	ND	50	104	103	1.06	65.8 - 122	30	
Zinc	0.25	5.0	ND	50	95.4	98.0	2.69	59.9 - 122	30	

Work Order:	1502101	**Prep Method:**	NA	**Prep Date:**	NA	**Prep Batch:**	NA
Matrix:	Soil	**Analytical Method:**	SW8260B	**Analyzed Date:**	02/19/15	**Analytical Batch:**	424335
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
1,1-Dichloroethene	1.5	10	ND	50	95.1	91.3	3.92	53.7 - 139	30	
Benzene	1.5	10	ND	50	96.6	94.0	2.74	66.5 - 135	30	
Trichloroethylene	3.9	10	ND	50	91.2	87.7	3.89	57.5 - 150	30	
Toluene	0.98	10	ND	50	96.8	96.5	0.354	56.8 - 134	30	
Chlorobenzene	4.2	10	ND	50	94.9	93.9	1.18	57.4 - 134	30	
(S) Dibromofluoromethane			ND	50	110	108		59.8 - 148		
(S) Toluene-d8			ND	50	106	109		55.2 - 133		
(S) 4-Bromofluorobenzene			ND	50	108	107		55.8 - 141		

Laboratory Qualifiers and Definitions

DEFINITIONS:

Accuracy/Bias (% Recovery) - The closeness of agreement between an observed value and an accepted reference value.
Blank (Method/Preparation Blank) -MB/PB - An analyte-free matrix to which all reagents are added in the same volumes/proportions as used in sample processing. The method blank is used to document contamination resulting from the analytical process.
Duplicate - a field sample and/or laboratory QC sample prepared in duplicate following all of the same processes and procedures used on the original sample (sample duplicate, LCSD, MSD)
Laboratory Control Sample (LCS ad LCSD) - A known matrix spiked with compounds representative of the target analyte(s). This is used to document laboratory performance.
Matrix - the component or substrate that contains the analyte of interest (e.g., - groundwater, sediment, soil, waste water, etc)
Matrix Spike (MS/MSD) - Client sample spiked with identical concentrations of target analyte (s). The spiking occurs prior to the sample preparation and analysis. They are used to document the precision and bias of a method in a given sample matrix.
Method Detection Limit (MDL) - the minimum concentration of a substance that can be measured and reported with a 99% confidence that the analyte concentration is greater than zero
Practical Quantitation Limit (PQL) - a laboratory determined value at 2 to 5 times above the MDL that can be reproduced in a manner that results in a 99% confidence level that the result is both accurate and precise. PQLs reflect all preparation factors and/or dilution factors that have been applied to the sample during the preparation and/or analytical processes.
Precision (%RPD) - The agreement among a set of replicate/duplicate measurements without regard to known value of the replicates
Surrogate (S) or (Surr) - An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. Surrogates are used in most organic analysis to demonstrate matrix compatibility with the chosen method of analysis
Tentatively Identified Compound (TIC) - A compound not contained within the analytical calibration standards but present in the GCMS library of defined compounds. When the library is searched for an unknown compound, it can frequently give a tentative identification to the compound based on retention time and primary and secondary ion match. TICs are reported as estimates and are candidates for further investigation.
Units: the unit of measure used to express the reported result - **mg/L** and ***mg/Kg*** (equivalent to PPM - parts per million in **liquid** and ***solid***), **ug/L** and ***ug/Kg*** (equivalent to PPB - parts per billion in **liquid** and ***solid***), **ug/m3**, ***mg.m3***, **ppbv** and ***ppmv*** (all units of measure for reporting concentrations in air), **%** (equivalent to 10000 ppm or 1,000,000 ppb), **ug/Wipe** (concentration found on the surface of a single Wipe usually taken over a 100cm2 surface)

LABORATORY QUALIFIERS:

B - Indicates when the anlayte is found in the associated method or preparation blank
D - Surrogate is not recoverable due to the necessary dilution of the sample
E - Indicates the reportable value is outside of the calibration range of the instrument but within the linear range of the instrument (unless otherwise noted) Values reported with an E qualifier should be considered as estimated.
H- Indicates that the recommended holding time for the analyte or compound has been exceeded
J- Indicates a value between the method MDL and PQL and that the reported concentration should be considered as estimated rather the quantitative
NA - Not Analyzed
N/A - Not Applicable
NR - Not recoverable - a matrix spike concentration is not recoverable due to a concentration within the original sample that is greater than four times the spike concentration added
R- The % RPD between a duplicate set of samples is outside of the absolute values established by laboratory control charts
S- Spike recovery is outside of established method and/or laboratory control limits. Further explanation of the use of this qualifier should be included within a case narrative
X -Used to indicate that a value based on pattern identification is within the pattern range but not typical of the pattern found in standards. Further explanation may or may not be provided within the sample footnote and/or the case narrative.

Sample Receipt Checklist

Client Name: CDM

Project Name: Oakland, CA BART Maintenance Shop

Work Order No.: 1502101

Date and Time Received: 2/13/2015 10:44

Received By: ldi

Physically Logged By: ldi

Checklist Completed By: ldi

Carrier Name: Client Drop Off

Chain of Custody (COC) Information

Chain of custody present?	Yes
Chain of custody signed when relinquished and received?	Yes
Chain of custody agrees with sample labels?	Yes
Custody seals intact on sample bottles?	Not Present

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Not Present
Shipping Container/Cooler In Good Condition?	Yes
Samples in proper container/bottle?	Yes
Samples containers intact?	Yes
Sufficient sample volume for indicated test?	Yes

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes			
Container/Temp Blank temperature in compliance?	Yes	Temperature:	2	°C
Water-VOA vials have zero headspace?	No VOA vials submitted			
Water-pH acceptable upon receipt?	N/A			

pH Checked by: n/a

pH Adjusted by: n/a

Login Summary Report

Client ID: TL5236 CDM

Project Name: Oakland, CA BART Maintenance Shop

Project # :

Report Due Date: 3/9/2015

QC Level:

TAT Requested: 5+ day:0

Date Received: 2/13/2015

Time Received: 10:44

Comments:

Work Order # : ***1502101***

WO Sample ID	Client Sample ID	Collection Date/Time	Matrix	Scheduled Disposal	Sample On Hold	Test On Hold	Requested Tests	Subbed
1502101-001A	OAK-Soil-021315	02/13/15 8:30	Soil	08/12/15			S_6010BCAM17 S_8260Full S_GCMS-GRO S_TOG S_Creosote S_8270Full-B S_8270Full-A S_8270PAH S_8082PCB S_TPHDO	

Sample Note: VOCs plus Ethanol & 1,4 Dioxane. 8270=PAHs, PCP, Creosol markers. Analyze for Creosote if Creosol markers are present. Also for TOG, TPH diesel, gas, PCBs

Torrent LABORATORY, INC.

Torrent LABORATORY, INC.

483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258 RESET [redacted]
FAX: 408.263.8293
www.torrentlab.com

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 1502101

Company Name: CDM Smith	Location of Sampling: Oakland, CA BART Maintenance Shop
Address: 100 Pringle Ave, Ste 300	Purpose: soil sampling
City: Walnut Creek State: CA Zip Code: 94596	Special Instructions / Comments: May be direct bill to BART
Telephone: 925-296-8015 FAX:	
REPORT TO: Ryan Wood SAMPLER: Ryan Wood	P.O. #: EMAIL: woodr@cdmsmith.com

TURNAROUND TIME: ☐ 10 Work Days ☐ 3 Work Days ☐ Noon - Nxt Day ☐ 7 Work Days ☐ 2 Work Days ☐ 2 - 8 Hours ☒ 5 Work Days ☐ 1 Work Day ☐ Other

SAMPLE TYPE: ☐ Storm Water ☐ Air ☐ Waste Water ☐ Other ☐ Ground Water ☐ Soil

REPORT FORMAT: ☐ QC Level IV ☐ EDF ☐ Excel / EDD

ANALYSIS REQUESTED

LAB ID	CLIENT'S SAMPLE I.D.	DATE / TIME SAMPLED	MATRIX	# OF CONT	CONT TYPE	8260-VOC + oxy + petro fuel scans	8270-PNA PCP	1,4 Dioxane Creosote (it markers)	TPH D, G	TOG Full	8082-PCB				REMARKS
001A	OAK-SOIL-021315	2/13/15 / 0830	Soil	2	Stainless Steel Sleeves	X	X	X	X	X	X				
															Temp 2°C

RW 2-13-15

RECPS LI LBL LIR

1 Relinquished By: [signature]	Print: Ryan Wood	Date: 2-13-15	Time: 1048	Received By: [signature]	Print: Patti Snyder	Date: 2/13/15	Time: 10:44
2 Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:

Were Samples Received in Good Condition? ☐ Yes ☐ NO Samples on Ice? ☐ Yes ☐ NO Method of Shipment D/O Sample seals intact? ☐ Yes ☐ NO ☐ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrangements are made. Page ____ of ____

Log In By: ________ Date: ________ Log In Reviewed By: ________ Date:

Torrent LABORATORY, INC.

Torrent LABORATORY, INC.

Change Order

Work Order: 1502101 **Serial #:** CO15-0063 **Print Date:** 3/2/2015

Project Name: Oakland, CA BART Maintenance Shop

Client: CDM **Requested By:** Ryan Wood

	Requested Date	Requested Time	Extended Price
Additional Test - Analyze sample 001 for Cd, Cr, Pb, Ni, Zn; also report ETOH as TIC; Standard TAT	3/2/2015	2:00:00PM	

483 Sinclair Frontage Rd., Milpitas, CA 95035 | *tel:* 408.263.5258 | *fax:* 408.263.8293 | www.torrentlab.com

Appendix B

Table#2: “Recommended Minimum Verification Analyses for Underground Tank Leaks”, Revised 21 November 2003

TABLE #2
REVISED 21 NOVEMBER 2003

RECOMMENDED MINIMUM VERIFICATION ANALYSES FOR UNDERGROUND TANK LEAKS

HYDROCARBON LEAK	SOIL ANALYSIS (SW-846 METHOD)		WATER ANALYSIS (Water/Waste Water Method)	
Gasoline (Leaded and Unleaded)	TPHG	8015M or 8260	TPHG	8015M or 524.2/624 (8260)
	BTEX	8260	BTEX	524.2/624 (8260)
	EDB and EDC	8260	EDB and EDC	524.2/624 (8260)
	MTBE, TAME, ETBE, DIPE, TBA, and EtOH by 8260 for soil and 524.2/624 (8260) for water			
	TOTAL LEAD	AA	TOTAL LEAD	AA
		--Optional--		
	Organic Lead	DHS-LUFT	Organic Lead	DHS-LUFT
Unknown Fuel	TPHG	8015M or 8260	TPHG	8015M or 524.2/624 (8260)
	TPHD	8015M or 8260	TPHD	8015M or 524.2/624 (8260)
	BTEX	8260	BTEX	524.2/624 (8260)
	EDB and EDC	8260	EDB and EDC	524.2/624 (8260)
	MTBE, TAME, ETBE, DIPE, TBA, and EtOH by 8260 for soil and 524.2/624 (8260) for water			
	TOTAL LEAD	AA	TOTAL LEAD	AA
		--Optional--		
	Organic Lead	DHS-LUFT	Organic Lead	DHS-LUFT
Diesel, Jet Fuel, Kerosene, and Fuel/Heating Oil	TPHD	8015M or 8260	TPHD	8015M or 524.2/624 (8260)
	BTEX	8260	BTEX	524.2/624 (8260)
	EDB and EDC	8260	EDB and EDC	524.2/624 (8260)
	MTBE, TAME, ETBE, DIPE, TBA, and EtOH by 8260 for soil and 524.2/624 (8260) for water			
Chlorinated Solvents	CL HC	8260	CL HC	524.2/624 (8260)
	BTEX	8260 or 8021	BTEX	524.2/624 (8260) or 502.2/602 (8021)
	1,4-Dioxane	8270M	1,4-Dioxane	8270M
Non-chlorinated Solvents	TPHD	8015M or 8260	TPHD	8015M or 524.2/624 (8260)
	BTEX	8260 or 8021	BTEX	524.2/624 (8260) or 502.2/602 (8021)
Waste, Used, or Unknown Oil	TPHG	8015M or 8260	TPHG	8015M or 524.2/624 (8260)
	TPHD	8015M or 8260	TPHD	8015M or 524.2/624 (8260)
	O&G	9070	O&G	418.1
	BTEX	8260	BTEX	524.2/624 (8260)
	CL HC	8260	CL HC	524.2/624 (8260)
	1,4-Dioxane	8270M	1,4-Dioxane	8270M
	EDB and EDC	8260	EDB and EDC	524.2/624 (8260)
	MTBE, TAME, ETBE, DIPE, TBA, and EtOH by 8260 for soil and 524.2/624 (8260) for water			
	METALS (Cd, Cr, Pb, Ni, Zn) by ICAP or AA for soil water			
	PCB*, PCP*, PNA, CREOSOTE by 8270 for soil and 524/625 (8270) for water			
	* If found, analyze for dibenzofurans (PCBs) or dioxins (PCP)			

NOTES:

1. 8021 replaces old methods 8020 and 8010
2. 8260 replaces old method 8240
3. Reference: Table B-1 in Appendix B of "Expedited Site Assessment Tools for Underground Storage Tank Sites: A Guide for Regulators" (EPA 510-B-97-001).