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By Alameda County Environmental Health 2:44 pm, Sep 24, 2015

P.O. Box 10048 (72917-0048)
3801 Old Greenwood Road
Fort Smith, AR 72903
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September 23, 2015

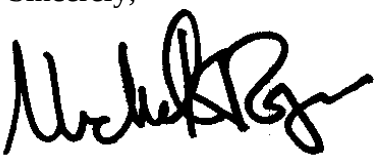
Mr. Mark Detterman, RG, CEG
Senior Hazardous Materials Specialist
Alameda County Environmental Health Department
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Re: **Perjury Statement-**
Data Gaps Investigation Report
ABF Freight System Facility (SLIC Case No. RO#0003033)
4575 Tidewater Avenue
Oakland, California

Dear Mr. Detterman:

I declare under penalty of perjury, that the information and/or recommendations contained in the attached document or report are true and correct to the best of my knowledge.

Sincerely,



Michael K. Rogers
Director, Real Estate
ArcBest Corporation

TRINITY source group, inc.
Environmental Consultants

September 24, 2015
Project 154.009.005

Mr. Mark Detterman, RG, CEG
Senior Hazardous Materials Specialist
Alameda County Environmental Health Department
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Re: *Data Gap Investigation Report*
ABF Freight System Facility
4575 Tidewater Avenue
Oakland, California
RO#0003033 and RO#0003134

Dear Mr. Detterman:

This letter, prepared by Trinity Source Group, Inc. (Trinity) on behalf of ABF Freight System, Inc. (ABF), presents a *Data Gap Investigation Report (Report)* for the referenced site (Figures 1 and 2). This *Report* is in response to *Data Gap Investigation Work Plan and Focused Site Conceptual Model (Work Plan)* submitted to Alameda County Environmental Health Department (ACEH) dated January 9, 2015. The *Work Plan* was approved with requested modifications by ACEH in a *Letter* dated February 24, 2015. Trinity addressed the requested modifications to the *Work Plan* in *Email Correspondence* with ACEH. This *Report* focuses on the evaluation and delineation of light non-aqueous phase liquids (LNAPL) underneath a maintenance and repair shop at the referenced site. LNAPL was encountered in a soil boring located inside of the maintenance and repair building during a previous soil and groundwater investigation delineating the presence of halogenated volatile organic compounds (HVOCs) underneath the building. The ACEH-approved *Work Plan*, *Letter* and *Email Correspondence* are included in Attachment A of this *Report*.

BACKGROUND

The site encompasses approximately 6.7 acres situated between Tidewater Avenue and the water channel extending north from San Leandro Bay, separating the cities of Alameda and Oakland (Figures 1 and 2). Land-use in the area is industrial. A detailed site background is provided in the *Work Plan* (See Attachment A)

SCOPE OF WORK

Trinity performed the following scope of work to assess the source and extent of LNAPL.

Prefield

Trinity obtained a Water Resources Well Permit (Permit) from Alameda County Public Works Agency (ACPWA) to advance up to 4 soil borings at the site and scheduled a seal inspection with an ACPWA inspector. Trinity staff also prepared a Site-Specific Health and Safety Plan, scheduled sub-contractors, notified ACEH prior to field work and marked the site and notified Underground Service Alert for utility clearance. The ACPWA issued Permit is presented as Attachment B.

Attempted Video Survey and Underground Work Bay Inspection

On June 16, 2015, Trinity staff supervised the clearing of sewer lines and drain pipes located in the maintenance building in order to perform a video survey assessment of whether or not the floor drains and sewer lines are potential sources of encountered LNAPL. Integrated Wastestream Management, Inc. (IWM) was subcontracted to perform hydro jetting and apply high vacuum on the lines to dislodge and clear the lines of any liquid and debris. All three indoor drain locations, shown on Figure 2, were vacuumed to remove debris. Hydro jetting was applied following vacuuming to dislodge any obstructions. A combination of vacuuming, hydro jetting, and adding water was used to clear all accessible lines, until no standing water was observed in the lines and the influence of the vacuum was observable in all three drain inlets with the application of vacuum to a line. Approximately 20 feet of line from each drain inlet was hydro jetted with the exception of the most western drain, as the hydro jetting tool couldn't navigate the bend in the of the drain inlet into the main line. Water generated from vacuuming and hydro jetting was stored onsite in 55-gallon drums for future disposal. Figure 2 shows the lines that were cleared and the locations of the floor drains used to access the lines.

West Coast Locators was subcontracted to perform the video survey of the cleared sewer lines and drain pipes. The West Coast Locators technician was not able to perform the survey due to the design of the floor drain pipes leading to the sewer line. Two 90-degree bends in the pipes just beneath the floor drains prevented video survey equipment from accessing the main sewer line.

During video survey fieldwork, Trinity staff inspected the underground work bay located inside of the maintenance building for cracks or breaks in the side walls and floors of the bay, and for evidence of spills and releases. No such features were noted.

Soil Borings

On August 27, 2015, Trinity staff advanced two soil borings, SB-7 and SB-8, in the maintenance building using a direct push drill rig. Drilling operations were performed by Environmental Control Associates, Inc. (ECA) under Trinity oversight. Boring locations are shown on Figure 2. Each boring was advanced to approximately 4 to 5 feet below first-encountered groundwater. Boring SB-7 was advanced to 11 feet below ground surface (bgs) and Boring SB-8 was advanced to 10 feet bgs. Trinity staff logged soils using

the Unified Soils Classification System (USCS) and screened for volatile organic compounds (VOCs) at two-foot intervals using a photoionization detector (PID). Trinity collected 6 soil samples from each soil boring, including a sample collected at the depth of the observed water-bearing zone. A grab-groundwater sample was collected from each boring at the observed water-bearing zone. A clean temporary ¾-inch PVC well casing was placed in each borehole, with five feet of screen installed at the observed water bearing zone (bottom of boring) to facilitate grab-groundwater sampling.

Soil samples were collected by cutting and capping selected 6-inch intervals of acetate soil liners. Grab-groundwater samples were collected using a hand-operated check-valve pump. Complete soil and groundwater assessment field procedures are presented in Attachment C. Boring logs are included in Attachment D. All samples were labeled and placed on ice with chain-of-custody documentation for transport to ESC Lab Sciences (ESC), a California certified laboratory (NELAP #00157CA).

Soil boring and sampling equipment were cleaned with a trisodium phosphate solution followed by a double rinse in clean water between soil samples and boring locations. Upon completion of sampling, all borings were backfilled to surface grade with neat cement grout under ACPWA inspector supervision.

Laboratory Analysis

Trinity shipped selected soil and grab-groundwater samples to ESC Lab Sciences (ESC) for analysis. Samples were analyzed for:

- Full VOCs scan by EPA Method 8260B. The analytical suite encompassed HVOCs including tetrachloroethene (PCE) plus five breakdown compounds; trichloroethene (TCE), 1,1-dichloroethene (1,1-DCE), cis-1,2-dichloroethene (cis-1,2-DCE), trans-1,2-dicholoroethene (trans-1,2-DCE), and vinyl chloride , and petroleum hydrocarbons including benzene, toluene, ethyl benzene, and total xylenes (collectively BTEX compounds), among other compounds.
- Total petroleum hydrocarbons as gasoline (TPHg) by EPA Method 8260B.
- Total petroleum hydrocarbons as diesel (TPHd) by EPA Method 8015 with Silica Gel Cleanup. TPHd was analyzed as hydrocarbon range C12-22.
- Total petroleum hydrocarbons as motor oil (TPHmo) by EPA Method 8015 with Silica Gel Cleanup. TPHmo was analyzed as two separate hydrocarbon ranges; C22-32 and C32-40.

Soil and grab-groundwater analytical data for previously sampled Borings SB-1 through SB-6 were reported with TPHd as hydrocarbon chain C10-C28, and TPHmo as hydrocarbon chain C28-C40. These ranges are similar enough to the above listed ranges that the data are comparable.

Investigation-Derived Waste

All investigation derived waste was stored on-site in Department of Transportation approved 55-gallon steel drums. Water generated during floor drain and sewer line clearing was transported as non-hazardous waste by IWM to Seaport Refining and Environmental, where it was properly disposed of.

Disposal documentation for waste generated during floor drain and sewer line clearing is presented in Attachment E. Investigation-derived waste generated from soil and groundwater assessment is stored on-site pending proper characterization and disposal. Upon proper characterization the drums will be transported and disposed of by an appropriate waste-hauler. The disposal documentation and manifest will be submitted on a later date upon disposal completion.

Results

Attempted Video Survey and Underground Work Bay Inspection

Prior to clearing of the drain pipes and sewer lines, standing oily water was observed in the most western floor drain. The most southern floor drain was dry and contained miscellaneous debris. The floor drain near Boring SB-5 contained oily debris and was missing the floor drain guard. Debris removed from the drains consisted of screws, nuts, bolts, oily rags, and miscellaneous trash debris.

No video survey was performed due to design of the floor drain pipes.

No evidence of cracks, breaks, spills, or releases were observed during the inspection of the underground work bay.

Hydrogeologic Conditions

The soils encountered during drilling mostly consisted of poorly graded fine to coarse grained sand, clay sand, sandy clay, and clay to a total depth explored of approximately 11 feet bgs. Each boring encountered six-inch thick concrete floor with fill material underneath, extending to approximately 1 foot bgs.

Groundwater at the time of drilling was first encountered at 5.5 to 6 feet bgs in both borings. After drilling, the static groundwater levels were measuring in the ¾-inch temporary PVC casing and ranged from 5.8 to 6.0 feet bgs.

During drilling, no petroleum hydrocarbon odors were observed in the soil samples from either boring, and no LNAPL was encountered during collection of grab-groundwater samples in either boring.

Soil Analytical Results

The soil analytical data described below is presented in Table 1 and Figure 3.

- TPHg was not detected at or above laboratory detection limits in either boring.
- TPHd was detected in Borings SB-7 and SB-8 at concentrations above laboratory minimum detection limits (MDLs) but below laboratory reporting limits (RDLs) at concentrations ranging from 0.896 milligrams per kilogram (mg/kg) in Boring SB-8 at 6.0 feet bgs to 13.4 mg/kg in Boring SB-7 at 3.0 feet bgs.
- TPHmo was detected in Borings SB-7 and SB-8 at total concentrations ranging from 4.94 mg/kg (above MDLs, but below RDLs) in Boring SB-8 at 6.0 feet bgs to 245 mg/kg in Boring SB-7 at

3.0 feet bgs. TPHmo results are indicated as the sum of detections for hydrocarbon ranges C22-32 and C32-C40.

- BTEX compounds were not detected at or above laboratory detection limits in either boring.
- HVOCs were not detected at or above laboratory detection limits in either boring.
- 1,2,3-Trichlorobenzene was detected at a concentration of 0.00246 mg/kg in Boring SB-7 at 3.0 feet bgs. This concentration is above laboratory MDLs, but below laboratory RDLs.

All reported detections in soil samples were below the San Francisco Bay Regional Water Quality Control Board (SFBRWQCB) commercial, shallow soil environmental screening levels (ESLs) with groundwater not a current or potential drinking water resource. The certified laboratory report, chain-of-custody documentation, and GeoTracker upload documentation are included in Attachment F.

Soil VOC readings in parts per million volume (ppmv) can be found in the PID column of boring logs presented in Attachment D.

Grab-Groundwater Analytical Results

The grab-groundwater analytical data described below is presented in Table 2 and Figure 3.

- TPHg was not detected at or above laboratory detection limits in either boring.
- TPHd was detected in Boring SB-7 at a concentration of 199 micrograms per liter (µg/L) and in Boring SB-8 at a concentration of 320 µg/L.
- TPHmo was detected in Boring SB-7 at a total concentration of 280 µg/L. TPHmo was detected in Boring SB-8 at a total concentration of 156.7 µg/L. TPHmo results are indicated as the sum of detections for hydrocarbon ranges C22-32 and C32-C40. Concentrations of C32-C40 hydrocarbons in Borings SB-7 and SB-8 were detected above laboratory MDLs, but below laboratory RDLs.
- Benzene was not detected at or above laboratory detection limits in either boring.
- Toluene was not detected at or above laboratory detection limits in either boring.
- Ethylbenzene was detected in Boring SB-8 at a concentration of 0.612 µg/L. The detected concentration is above laboratory MDLs, but below laboratory RDLs.
- Total Xylenes were detected in Boring SB-8 at a concentration of 1.51 µg/L. The detected concentration is above laboratory MDLs, but below laboratory RDLs.
- HVOCs were not detected at or above laboratory detection limits in either boring.
- 1,2,4-Trimethylbenzene was detected in Boring SB-8 at a concentration 7.15 µg/L.

- The following compounds were detected in Boring SB-8 at concentrations above laboratory MDLs, but below laboratory RDLs: tert-Butylbenzene at a concentration of 0.976 µg/L, Isopropylbenzene at a concentration of 0.563 µg/L, p-isopropyltoluene at a concentration of 0.787 µg/L, n-Propylbenzene at a concentration of 0.948 µg/L, 1,2,3-Trimethylbenzene at a concentration of 0.490 µg/L, and 1,3,5-Trimethylbenzene at a concentration of 3.39 µg/L.

All reported detections in the grab-groundwater samples were below the SFBRWQCB commercial, aquatic receptor ESLs with groundwater not a current or potential drinking water resource. The certified laboratory report, chain-of-custody documentation, and GeoTracker upload documentation are included in Attachment F. An isoconcentration contour of TPHd at 640 µg/L, the concentration of the above referenced ESL, is included in Figure 3, along with an estimate of the LNAPL plume boundary.

CONCLUSIONS AND RECOMMENDATIONS

Because a video survey could not be performed due to the drain configuration, Trinity was not able to assess condition of the sewer line or identify any potential release points related to LNAPL encountered in Boring SB-4.

Results of the underground work bay inspection indicate that the work bay is in good condition and is not a source of contamination.

No LNAPL was observed in Borings SB-7 and SB-8. The lateral and vertical extent of LNAPL is sufficiently delineated, as Boring SB-4 is completely surrounded by seven borings to the north, south, west, and east in which no LNAPL was observed. All samples from the surrounding seven borings were below the ESLs for TPHg, TPHd, TPHmo, and BTEX compounds, indicating that encountered LNAPL is localized to the immediate vicinity of Boring SB-4, in the center of the building. Trinity estimates the maximum extent of LNAPL to be an approximately 10-foot by 15-foot plume centered on Boring SB-4. The estimated maximum extent of LNAPL is shown on Figure 3.

No source of LNAPL was identified during this investigation. No current source is present, and it appears to be associated with a small historical release. However, because the extent of LNAPL is small and localized, Trinity recommends that the site be considered for case closure under the Low Threat Case Closure Policy.

Should you have any questions regarding this letter, please call Trinity at (831) 426-5600.

Sincerely,

TRINITY SOURCE GROUP, INC.

Information, conclusions, and recommendations made by Trinity in this document regarding this site have been prepared under the supervision of and reviewed by the licensed professional whose signature appears below.

Debra J. Moser, PG, CEG
Senior Geologist

Spencer Davis
Staff Geologist

Attachments:

Table 1:	Soil Analytical Data
Table 2:	Grab-Groundwater Analytical Data
Figure 1:	Site Location Map
Figure 2:	Soil Borings, Sub-Slab Vapor Probes, Utilities Location Map
Figure 3:	Soil and Grab-Groundwater Analytical Data Map
Attachment A:	Data Gap Investigation Work Plan and Focused Site Conceptual Model Dated January 9, 2015, ACEH Letter Dated February 24, 2015 and ACEH Email Correspondence
Attachment B:	ACPWA Water Resources Well Permit
Attachment C:	Soil and Grab-Groundwater Sampling Field Procedures
Attachment D:	Boring Logs
Attachment E:	Investigation-Derived Waste Disposal Documentation
Attachment F:	Certified Laboratory Report, Chain-Of-Custody Documentation, and GeoTracker Upload Documentation

DISTRIBUTION

A copy of this report has been forwarded to:

Mr. Mike Rogers (via email to mkrogers@arkbest.com)

Leroy Griffin (via email to lgriffin@oaklandnet.com)

TABLES

Table 1
Soil Analytical Data

ABF Freight System, Inc.
4575 Tidewater Avenue
Oakland, California

Sample ID	Sample Date	Sample Depth (Feet)	EPA Analytical Test Method												
			8260B (mg/kg)											8015 (mg/kg)	
			TPHg	Benzene	Toluene	Ethylbenzene	Total Xylenes	1,1-DCE	cis-1,2-DCE	PCE	TCE	Vinyl Chloride	Carbon Tetrachloride	Other Compounds	TPHd	TPHmo
SB-1	8/26/2014	3.5	<0.57	0.00051[A]	<0.0057	<0.0011	<0.0034	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	ND	<4.5	0.69[A]
SB-2	8/26/2014	3.5	<0.58	<0.0012	<0.0058	<0.0012	<0.0035	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	ND	<46	20[A]
SB-3	8/26/2014	3.5	<0.60	<0.0012	0.00066[A]	<0.0012	<0.0036	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	ND	3.2[A]	5.3
SB-4	8/26/2014	3.5	<0.57	<0.0011	<0.0057	<0.0011	<0.0034	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	ND	<46	5.6[A]
SB-5	8/26/2014	3.5	<0.56	<0.0011	<0.0056	<0.0011	<0.0034	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	ND	<45	87
SB-6	8/26/2014	3.5	<0.56	0.00042[A]	<0.0056	<0.0011	<0.0034	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	ND	<4.5	3.6[A]
SB-7	8/27/2015	3.0	<2.89	<0.00579	<0.0289	<0.00579	<0.0174	<0.00579	<0.00579	<0.00579	<0.00579	<0.00579	<0.00579	C	13.4[B]	245.1
		5.5	<2.87	<0.00575	<0.0287	<0.00575	<0.0172	<0.00575	<0.00575	<0.00575	<0.00575	<0.00575	<0.00575	ND	1.49[B]	<4.60
		10.5	<2.98	<0.00596	<0.0298	<0.00596	<0.0179	<0.00596	<0.00596	<0.00596	<0.00596	<0.00596	<0.00596	ND	<4.77	<4.77
SB-8	8/27/2015	3.0	<2.97	<0.00595	<0.0297	<0.00595	<0.0178	<0.00595	<0.00595	<0.00595	<0.00595	<0.00595	<0.00595	ND	7.96[B]	115.2
		6.0	<2.98	<0.00597	<0.0298	<0.00597	<0.0179	<0.00597	<0.00597	<0.00597	<0.00597	<0.00597	<0.00597	ND	0.896[B]	4.94[B]
		9.5	<2.93	<0.00587	<0.0293	<0.00587	<0.0176	<0.00587	<0.00587	<0.00587	<0.00587	<0.00587	<0.00587	ND	<4.69	<4.69
Commercial SFRWQCB ESLs - Shallow Soil Screening Levels - Not a Current or Potential Drinking Water Resource																
			500	1.2	9.3	4.7	11	1.9	18	2.6	8.3	0.16	0.58	NLE	110	500

Notes:

EPA = Environmental Protecton Agency
SB = Soil Boring
TPHg = Total Petroleum Hydrocarbons - Gasoline Range
1,1-DCE = 1,1-dichloroethene
cis-1,2-DCE = cis-1,2-dichloroethene
PCE = Tetrachloroethene
TCE = Trichloroethene
TPHd = Total Petroleum Hydrocarbons - Diesel Range (C10-C28 for SB-1 through SB-6, C12-C22 for SB-7 and SB-8)
TPHmo = Total Petroleum Hydrocarbons - Motor Oil Range (C28-C40 for SB-1 through SB-6, sum of C22-32 and C32-C40 for SB-7 and SB-8)
mg/kg = Milligrams per kilogram
< = Not detected at or above detection limit
Bold = Exceeds ESL concentration
ND = Not detected at or above laboratory detection limits
NLE = No limit established
A = Estimated value below the lowest calibration point. Confidence correlates with concentration.
B = The identification of the analyte is acceptable; the reported value is an estimate.
C = 1,2,3-Trichlorobenzene detected at a concentration of 0.00246[B] mg/kg. There is no Environmental Screening Level established for 1,2,3-Trichlorobenzene.
SFRWQCB = San Francisco Bay Regional Water Quality Control Board, California EPA, December 2013, http://www.waterboards.ca.gov/rwqcb2/water_issues/programs/esl.shtml.
ESLs = Environmental Screening Levels (Updated December 2013)

Table 2
Grab-Groundwater Analytical Data

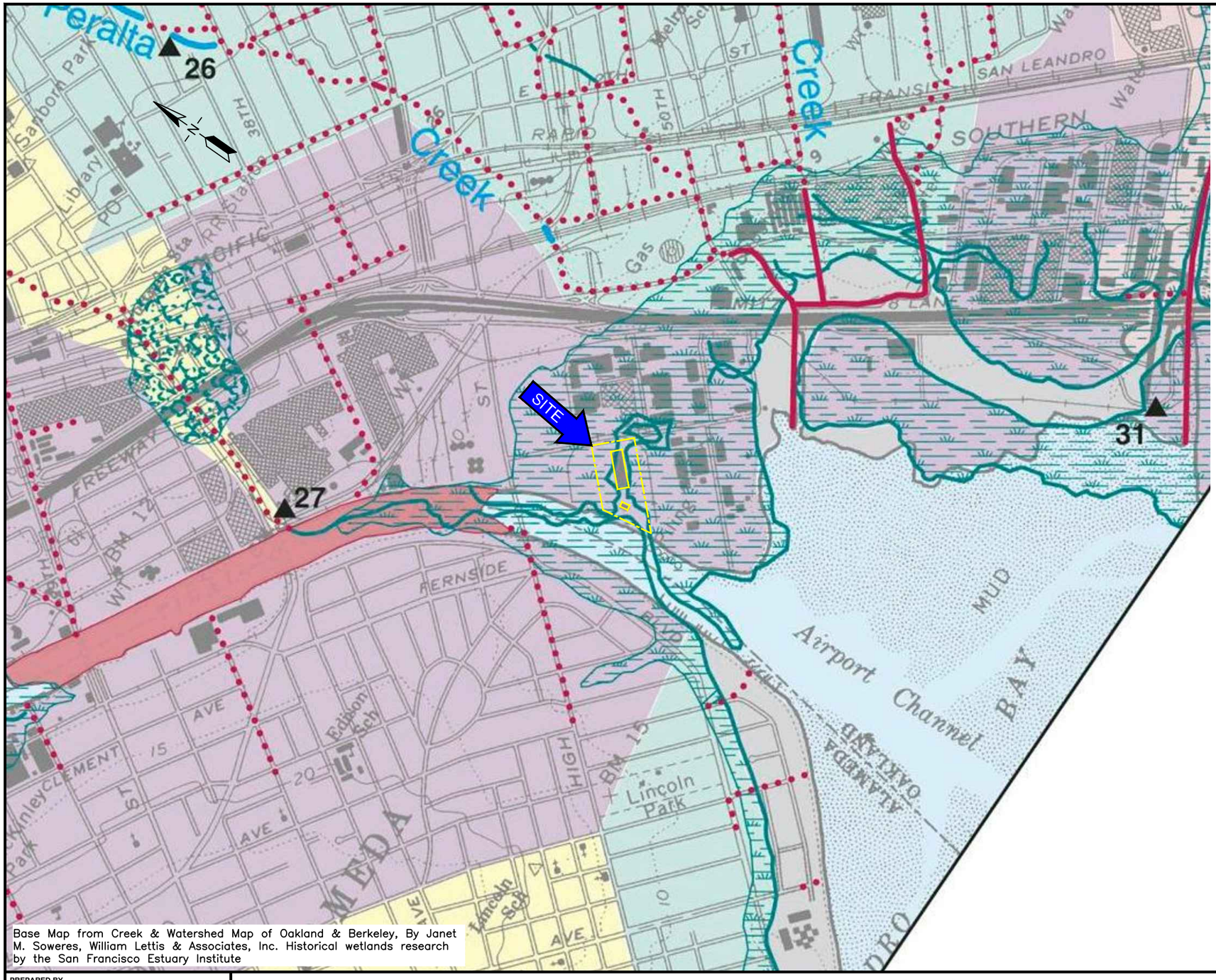
ABF Freight System, Inc.
4575 Tidewater Avenue
Oakland, California

Sample ID	Sample Date	EPA Analytical Test Method												
		8260B (µg/L)											8015 (µg/L)	
		TPHg	Benzene	Toluene	Ethylbenzene	Total Xylenes	1,1-DCE	cis-1,2-DCE	PCE	TCE	Vinyl Chloride	Carbon Tetrachloride	Other Compounds	TPHd	TPHmo
Grab Groundwater Samples Collected From Soil Borings														
SB-1	8/26/2014	<500	<1.0	<5.0	<1.0	<3.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND	460	160
SB-2	8/26/2014	<500	<1.0	<5.0	<1.0	<3.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND	580	210
SB-3	8/26/2014	NA	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND	NA	NA
SB-4	8/26/2014	**810**	0.61[A]	0.79[A]	3.8	9.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND	**6,200**	**1,200**
SB-5	8/26/2014	NA	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND	NA	NA
SB-6	8/26/2014	<500	<1.0	<5.0[B,C]	<1.0[C]	<3.0[B,C]	<1.0[B,C]	<1.0	<1.0[C]	<1.0[B]	<1.0	<1.0[B]	ND	170	110
SB-7	8/27/2015	<500	<1.00	<5.00	<1.00	<3.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	ND	199	280[E]
SB-8	8/27/2015	<500[B]	<1.00	<5.00	0.612[D]	1.51[D]	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	F	320	156.7[E]
		Commercial SFRWQCB ESLs - Groundwater Screening Levels - Aquatic Receptor, Not a Current or Potential Drinking Water Resource													
		500	46	130	43	100	25	590	120	360	780	9.8	NLE	640	640

Notes:

EPA = Environmental Protecton Agency
SB = Soil Boring
TPHg = Total Petroleum Hydrocarbons - Gasoline Range
1,1-DCE = 1,1-dichloroethene
cis-1,2-DCE = cis-1,2-dichloroethene
PCE = Tetrachloroethene
TCE = Trichloroethene
TPHd = Total Petroleum Hydrocarbons - Diesel Range (C10-C28 for SB-1 through SB-6, C12-C22 for SB-7 and SB-8)
TPHmo = Total Petroleum Hydrocarbons - Motor Oil Range (C28-C40 for SB-1 through SB-6, sum of C22-C32 and C32-40 for SB-7 and SB-8). Indicated detections are sum of reported detections for C22-C32 and C32-C40 for SB-7 and SB-8.
µg/L = Micrograms per liter
< = Not detected at or above detection limit
NA = Not analyzed
ND = Not detected at or above detection limit
A = Estimated value below the lowest calibration point. Confidence correlates with concentration.
B = The associated batch QC was outside the established quality control range for precision.
C = The sample matrix interfered with the ability to make any accurate determination; spike value is high
D = The identification of the analyte is acceptable; the reported value is an estimate.
E = C32-C40 Range detection qualified by laboratory as follows; 'The identification of the analyte is acceptable; the reported value is an estimate'.
F = Other compounds detected include tert-Butylbenzene at a concentration of 0.976[D] µg/L, Isopropylbenzene at a concentration of 0.563[D] µg/L, p-isopropyltoluene at a concentration of 0.787[D] µg/L, n-Propylbenzene at a concentration of 0.948[D] µg/L, 1,2,4-Trimethylbenzene at a concentration 7.15 µg/L, 1,2,3-Trimethylbenzene at a concentration of 0.490[D] µg/L, and 1,3,5-Trimethylbenzene at a concentration of 3.39 µg/L. There are no ESLs established for the above listed compounds.
SFRWQCB = San Francisco Bay Regional Water Quality Control Board, California EPA, December 2013, http://www.waterboards.ca.gov/rwqcb2/water_issues/programs/esl.shtml.
ESLs = Environmental Screening Levels
NLE = No limit established
Bold = Exceeds ESL concentration

FIGURES



Base Map from Creek & Watershed Map of Oakland & Berkeley, By Janet M. Soweres, William Lettis & Associates, Inc. Historical wetlands research by the San Francisco Estuary Institute

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Santa Cruz, California 95060
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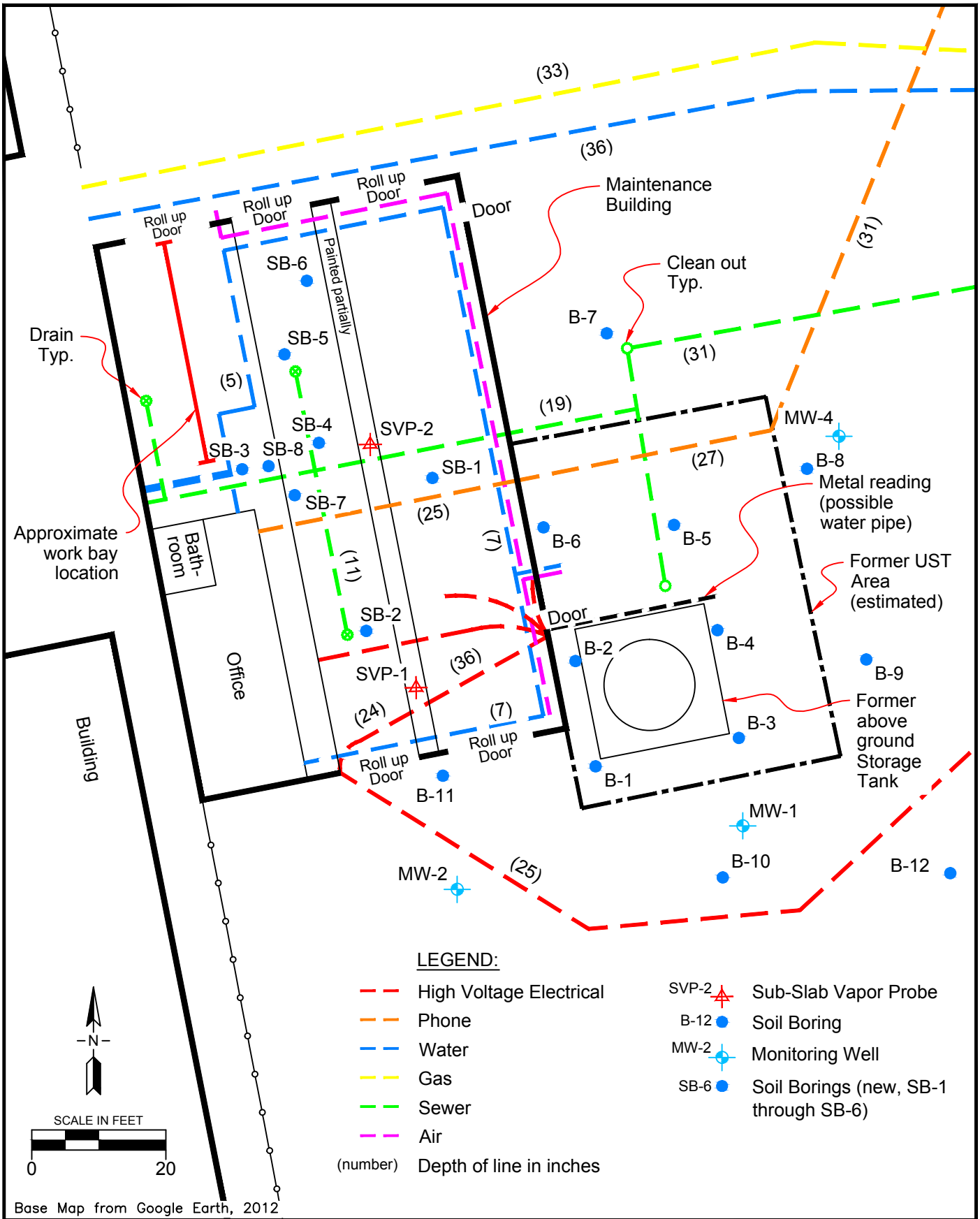
SITE LOCATION MAP

ABF Freight System Facility
4575 Tidewater Ave.
Oakland, California

PROJECT:
154.009.005

FIGURE:
1

REF. 154_001\154.008.001 fig1.dwg



REF. 154_001\154.009.004 figures.dwg

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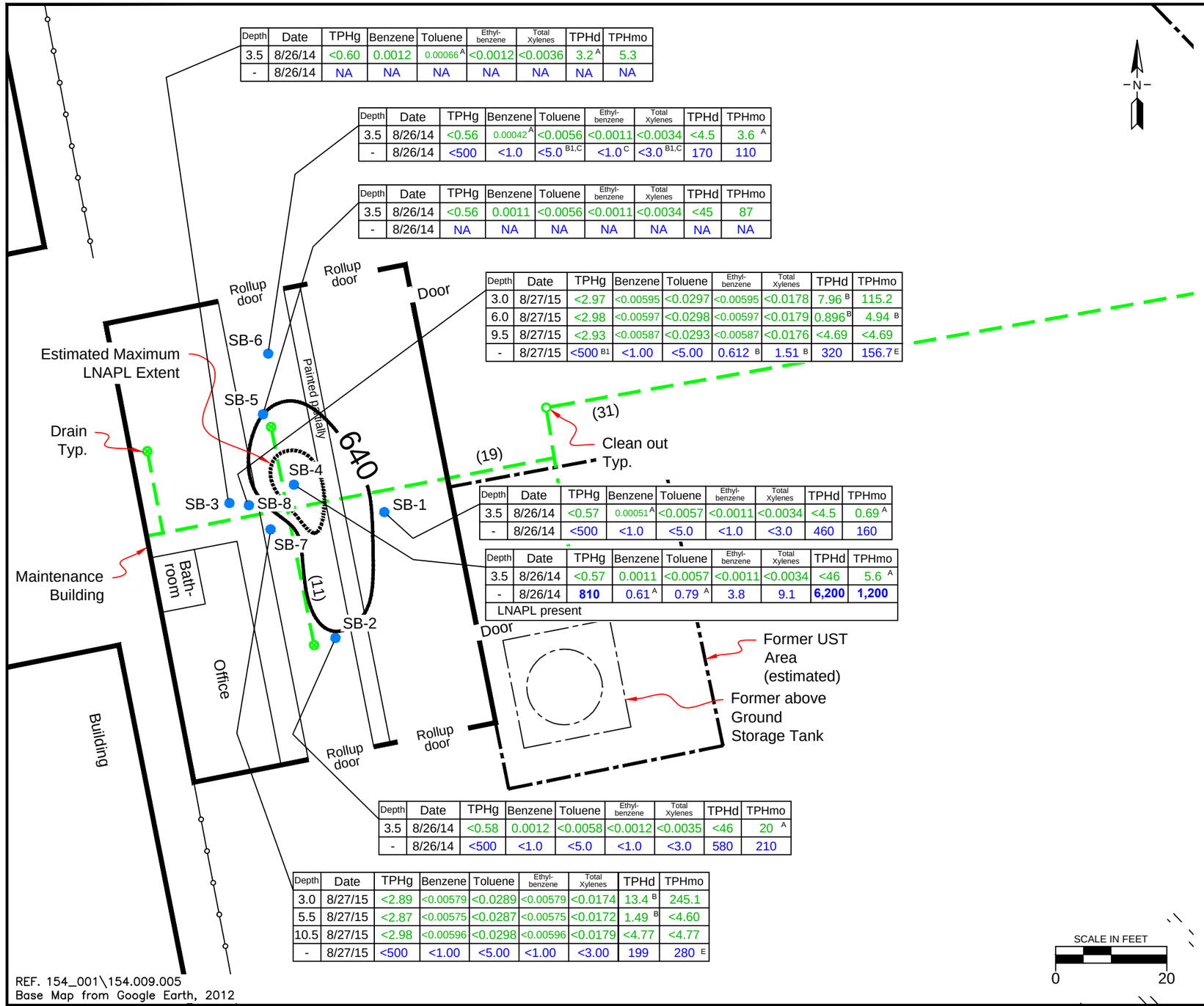
SOIL BORINGS, SUB-SLAB VAPOR PROBE, UTILITIES LOCATION MAP

ABF Freight System Facility
4575 Tidewater Ave.
Oakland, California

PROJECT:
154.009.005

FIGURE:
2



Depth	Date	TPHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPHd	TPHmo
3.5	8/26/14	<0.60	0.0012	0.00066 A	<0.0012	<0.0036	3.2 A	5.3
-	8/26/14	NA	NA	NA	NA	NA	NA	NA

Depth	Date	TPHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPHd	TPHmo
3.5	8/26/14	<0.56	0.00042 A	<0.0056	<0.0011	<0.0034	<4.5	3.6 A
-	8/26/14	<500	<1.0	<5.0 B1,C	<1.0 C	<3.0 B1,C	170	110

Depth	Date	TPHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPHd	TPHmo
3.5	8/26/14	<0.56	0.0011	<0.0056	<0.0011	<0.0034	<45	87
-	8/26/14	NA	NA	NA	NA	NA	NA	NA

Depth	Date	TPHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPHd	TPHmo
3.0	8/27/15	<2.97	<0.00595	<0.0297	<0.00595	<0.0178	7.96 B	115.2
6.0	8/27/15	<2.98	<0.00597	<0.0298	<0.00597	<0.0179	0.896 B	4.94 B
9.5	8/27/15	<2.93	<0.00587	<0.0293	<0.00587	<0.0176	<4.69	<4.69
-	8/27/15	<500 B1	<1.00	<5.00	0.612 B	1.51 B	320	156.7 E

Depth	Date	TPHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPHd	TPHmo
3.5	8/26/14	<0.57	0.00051 A	<0.0057	<0.0011	<0.0034	<4.5	0.69 A
-	8/26/14	<500	<1.0	<5.0	<1.0	<3.0	460	160

Depth	Date	TPHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPHd	TPHmo
3.5	8/26/14	<0.57	0.0011	<0.0057	<0.0011	<0.0034	<46	5.6 A
-	8/26/14	**810**	0.61 A	0.79 A	3.8	9.1	**6,200**	**1,200**
LNAPL present								

Depth	Date	TPHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPHd	TPHmo
3.5	8/26/14	<0.58	0.0012	<0.0058	<0.0012	<0.0035	<46	20 A
-	8/26/14	<500	<1.0	<5.0	<1.0	<3.0	580	210

Depth	Date	TPHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPHd	TPHmo
3.0	8/27/15	<2.89	<0.00579	<0.0289	<0.00579	<0.0174	13.4 B	245.1
5.5	8/27/15	<2.87	<0.00575	<0.0287	<0.00575	<0.0172	1.49 B	<4.60
10.5	8/27/15	<2.98	<0.00596	<0.0298	<0.00596	<0.0179	<4.77	<4.77
-	8/27/15	<500	<1.00	<5.00	<1.00	<3.00	199	280 E

N

SCALE IN FEET
0 20

LEGEND:

SB-6 Soil Boring

Sewer

(number) Depth of line in inches

TPHg Gasoline Range Total Petroleum Hydrocarbons

TPHd Diesel Range Total Petroleum Hydrocarbons

TPHmo Total Petroleum Hydrocarbons - Motor Oil Range (C28-C40 for SB-1 through SB-6, sum of C22-C32 and C32-40 for SB-7 and SB-8)

< Not detected at or above detection limit

GREEN Soil Sample Data in milligrams per kilogram (mg/kg)

BLUE Grab-Groundwater Sample Data in micrograms per liter (µg/L)

BOLD Exceeds ESL concentration

LNAPL Light Non-Aqueous Phase Liquid

A Estimated value below lower calibration point. Confidence correlates with concentration

B The identification of the analyte is acceptable; the reported value is an estimate.

B1 The associated batch QC was outside the established quality control range for precision

C The sample matrix interfered with the ability to make any accurate determination; spike value is high

E C32-C40 Range detection qualified by laboratory as follows; 'The identification of the analyte is acceptable; the reported value is an estimate'.

SFRWQCB ESLs - Commercial, Shallow Soil - Not a Current or Potential Drinking Water Resource (mg/kg)						
TPHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPHd	TPHmo
500	1.2	9.3	4.7	11	110	500

SFRWQCB ESLs - Commercial, Groundwater - Aquatic Receptor, Not a Current or Potential Drinking Water Resource (µg/L)						
TPHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPHd	TPHmo
500	46	130	43	100	640	640

SFRWQCB San Francisco Bay Regional Water Quality Control Board, California Environmental Protection Agency

ESLs Environmental Screening Levels (Updated December 2013)

640 TPHd Isoconcentration Contour in Groundwater (µg/L)

REF. 154_001\154.009.005
Base Map from Google Earth, 2012

PREPARED BY
TRINITY source group, inc.
Environmental Consultants
119 Encinal Street
Santa Cruz, California 95060
v: 831.426.5600
f: 831.426.5602

SOIL AND GRAB-GROUNDWATER ANALYTICAL DATA MAP

ABF Freight System Facility
4575 Tidewater Ave.
Oakland, California

PROJECT: 154.009.005

FIGURE: 3

ATTACHMENT A

Data Gap Investigation Work Plan and Focused Site Conceptual Model Dated January 9, 2015, ACEH Letter Dated February 24, 2015, and ACEH Email Correspondence

P.O. Box 10048 (72917-0048)
3801 Old Greenwood Road
Fort Smith, AR 72903
479.785.8700
abf.com

January 9, 2015

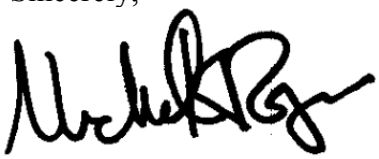
Mr. Mark Detterman, RG, CEG
Senior Hazardous Materials Specialist
Alameda County Environmental Health Department
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Re: **Perjury Statement-**
Data Gap Investigation Work Plan and Focused Site Conceptual Model (SCM)
ABF Freight System Facility (SLIC Case Nos. RO#0003133 and #0003134)
4575 Tidewater Avenue
Oakland, California

Dear Mr. Detterman:

I declare under penalty of perjury, that the information and/or recommendations contained in the attached document or report are true and correct to the best of my knowledge.

Sincerely,



Michael K. Rogers
Director, Real Estate
ArcBest Corporation

January 9, 2015
Project 154.009.001

Mr. Mark Detterman, RG, CEG
Senior Hazardous Materials Specialist
Alameda County Environmental Health Department
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Re: *Data Gap Investigation Work Plan and Focused Site Conceptual Model (SCM)*
ABF Freight System Facility
4575 Tidewater Avenue
Oakland, California
RO#0003033 and RO#0003134

Dear Mr. Detterman:

This letter, prepared by Trinity Source Group, Inc. (Trinity) on behalf of ABF Freight System, Inc. (ABF), presents a *Data Gap Investigation Work Plan and SCM (Work Plan)* for the referenced site (Figures 1 and 2). This *Work Plan* was requested by Alameda County Environmental Health Department (ACEH) in letters dated October 23, 2014. This *Work Plan* focuses on further delineating and assessing the presence of light non-aqueous phased liquid (LNAPL), which was encountered during previous soil and groundwater investigation delineating the presence of tetrachloroethene (PCE) and trichloroethene (TCE), as requested by ACEH. The ACEH issued a letter dated October 29, 2014, regarding the HVOC detections in the soil gas at the site (RO# 3134), and no HVOCs were detected in soil or groundwater samples in any of the recent borings drilled at the site, including boring SB-4 which had the LNAPL. Based on the subsequent discussion with ACEH staff, Trinity is first addressing the LNAPL at the site, and will address the HVOCs later if warranted. The ACEH letters are included in Attachment A of this *Work Plan*.

BACKGROUND

The site encompasses approximately 6.7 acres situated between Tidewater Avenue and the water channel extending north from San Leandro Bay, separating the cities of Alameda and Oakland (Figures 1 and 2). Land-use in the area is industrial.

Currently the site is in use as a trucking terminal, with a maintenance building located near the western property boundary. One aboveground storage tank that existed adjacent to the maintenance building, and is labeled with “Diesel Fuel”, “Not in Use”, and “Permanently Closed Jan. 1995”, was removed by

ABF on August 13, 2014. An underground clarifier is in use near the maintenance building. The underground storage tanks (USTs) at the site were also located near the maintenance building.

Previous environmental activities have evaluated soil and groundwater conditions, and are described in the *Soil Vapor Work Plan.* The most recent groundwater monitoring was the first semi-annual 2014 event, reported on March 12, 2014. The groundwater flow direction from this event was primarily to the south, southwest, and southeast.

Trinity installed two sub-slab vapor probes (SVP-1 and SVP-2) inside the maintenance building (Figure 2), and sampled these probes on two occasions. Tetrachloroethene (PCE) was detected at concentrations exceeding the Environmental Screening Level (ESL)[1] for commercial land use indoor air, with a maximum of 901 to 971 micrograms per meter cubed (µg/m^3) in Probe SVP-2. The applicable ESL for PCE is 42 µg/m^3. Probe SVP-2 also had very low but detectable concentrations of several other halogenated volatile organic compounds (HVOCs). Table 1 summarizes the sub-slab vapor data. Because the source and extent of PCE is unknown, ACEH requested additional delineation of the PCE.

Trinity conducted a passive soil gas survey inside and around the maintenance building from January 22, 2014 to February 5, 2014. The results of the survey are detailed in the *Passive Soil Gas Survey Report (Report)*, dated March 19, 2014. PCE and TCE and were the only HVOCs detected in multiple probes. The passive soil gas survey indicated non-detectable to relatively low concentrations across the area surveyed, with the maximum detections being PCE in two samples located near a sewer trench beneath the maintenance building. Passive soil gas analytical data is presented in Table 2 and Figure 3.

Trinity recommended drilling two soil borings to provide source evaluation and delineation of PCE beneath the maintenance building. In its April 9, 2014 *Letter*, ACEH requested additional soil borings be drilled.

On August 26, 2014 Trinity drilled six soil borings to evaluate potential soil contamination and delineate HVOC contamination beneath the maintenance building. The boring locations were selected to delineate HVOC contamination based off previous investigation results. Also, the floor drains were evaluated as potential contamination sources, and no sign of a release near the floors drains was observed. During the HVOC delineation in Boring SB-4, approximately three inches of LNAPL was encountered. The boring locations are shown on Figure 4, and the soil and groundwater analytical data are presented in Tables 3 and 4. The findings from this investigation were submitted to ACEH in a letter report dated September 24, 2014.

---

[1] *Screening For Environmental Concerns at Sites With Contaminated Soil and Groundwater* (November 2007), San Francisco Bay Regional Water Quality Control Board, California EPA, http://www.waterboards.ca.gov/sanfranciscobay/esl.htm, updated December, 2013. ESLs are conservative risk-based numbers used to evaluate detections of chemicals in soil, groundwater and soil gas. Detections less than ESLs generally do not warrant further evaluation. Detections greater than ESLs may warrant further evaluation based on site-specific conditions.

During Trinity's recent fieldwork, Trinity staff observed some metal trench plates over what appears to be an underground work bay used for vehicle maintenance in the northwestern section of the maintenance building. The approximate location is shown on Figure 2. Mr. Mike Rogers with ABF confirmed that underneath the metal trench plates is an underground work bay for vehicle maintenance, and provided photos. From the photos, the underground work bay is approximately 2-3 feet wide and 3-4 feet deep and extends approximately 15-25 feet in length, and is constructed of concrete. From the photos, the floor and sidewalls of the underground work bay look to be in good condition without obvious signs of cracks and/or breaks in the floor and sidewalls. Example photos are presented below:

The underground work bay may act as a barrier for potential shallow contaminant migration to the northwest.

SITE CONCEPTUAL MODEL

The SCM focusing on the presence of LNAPL is outlined below and presented as Table 5. Table 5 summarizes the elements of the SCM including the hydrogeologic setting and potential exposure pathways.

The primary data gap to be addressed in the SCM is the presence of LNAPL beneath the maintenance building. The source of the LNAPL is unknown. The extent is generally constrained by Borings SB-1 through SB-6 (Figure 2); however, the actual size of the LNAPL plume is not defined. Typical sources of LNAPL at similar industrial sites include intermittent spills, on-site waste oil underground storage tanks (UST), and/or sewer/drain lines. At this site the LNAPL was found in close proximity to a sewer line. Therefore, the sewer appears to be the most likely source.

If a source of the LNAPL is identified onsite through the assessment proposed below, additional soil and groundwater assessment may be warranted.

SCOPE OF WORK

Trinity presents the following scope of work to assess the source and extent of LNAPL. The following tasks are proposed:

Prefield

Prefield tasks will include obtaining any necessary permits, preparing a site-specific health and safety plan, scheduling sub-contractors, and notifying inspectors as needed. In addition, Trinity staff will mark the proposed soil boring locations, as determined and notify Underground Service Alert for utility clearance.

Video Survey- Sewer/Drain Pipes

Trinity will perform a video survey of the sewer/drain lines near Boring SB-4 to assess overall sewer conditions, and to identify areas that could represent release points. If the sewer/drain lines are found to be in poor condition with multiple possible release locations, Trinity will halt further assessment and will evaluate replacing and/or repairing the sewer/drain lines. Trnity recommends that ACEH staff visit the site during the video survey to observe the results and note other site features, and to discuss potential soil boring locations.

Underground Work Bay Inspection

During the video survey fieldwork, the underground work bay will be inspected for cracks or breaks in the side walls and floor for evidence of potential spills, and/or releases.

Hand-Auger Soil Borings

If the sewer/drain video survey indicates only a few potential release locations, or no release locations, hand-auger borings will be advanced to further evaluate possible release locations along the sewer/drain pipes. If possible, soil and grab-groundwater samples will be collected from the soil borings.

Soil Borings

Depending on the hand-auger soil boring results, four additional soil borings will be drilled using a direct-push drill rig to delineate the western extent of LNAPL if needed. Borings will be advanced using a direct-push rig to two feet below first encountered water. Soils will be logged by Trinity staff and screened for volatile organic compounds (VOCs) at two-foot intervals using a photoionization detector (PID). At least one soil sample will be collected per borehole; additional soil samples will be collected based on PID readings. Grab-groundwater samples will be collected from each boring at the observed water-bearing zone. Complete soil and groundwater assessment field procedures are presented in Attachment B. Boring locations will be selected based on the video survey and hand-auger borings. This fieldwork will not be performed, if the previous fieldwork sufficiently delineates the LNAPL.

Laboratory Analysis

Trinity will ship the soil and grab-groundwater samples to ESC Lab Sciences (ESC) for analysis. Samples will be analyzed for:

- PCE plus five breakdown compounds including TCE, 1,1-dichloroethene, cis-1,2-dichloroethene, trans-1,2-dicholoroethene, and vinyl chloride by EPA Method 8260B,
- Benzene, toluene, ethyl benzene, and total xylenes (collectively BTEX compounds) by EPA Method 8260B,
- Total petroleum hydrocarbons as gasoline (TPHg) by EPA Method 8260B,
- Total petroleum hydrocarbons as diesel (TPHd) and total peteroleum hydrocarbons as motor oil (TPHmo) by EPA Method 8015 with Silica Gel Cleanup.

Reporting

Following receipt of initial sampling analytical results, Trinity will prepare a summary report of the procedures and findings of this LNAPL assessment, along with recommendations regarding LNAPL removal. The report will include a map showing sample collection locations, field sampling data, and analytical data, along with certified analytical data and chain-of-custody documentation.

SCHEDULE

Trinity will initiate the proposed scope of work after ACEH approval of this *Work Plan.* Upon approval to proceed and under normal circumstances, the investigation will take approximately 8 to 10 weeks to complete. The final comprehensive report will be submitted within 8 to 12 weeks after receipt of all analytical data.

Should you have any questions regarding this letter, please call Trinity at (831) 426-5600.

Sincerely,

TRINITY SOURCE GROUP, INC.

Information, conclusions, and recommendations made by Trinity in this document regarding this site have been prepared under the supervision of and reviewed by the licensed professional whose signature appears below.

Debra J. Moser, PG, CEG, CHG
Senior Geologist

Eric J. Choi
Project Scientist

Attachments:

Table 1:	Sub-Slab Vapor Analytical Data
Table 2:	Passive Soil Gas Analytical Data
Table 3:	Soil Analytical Data
Table 4:	Grab-Groundwater Analytical Data
Table 5:	Site Conceptual Model for LNAPL
Figure 1:	Site Location Map
Figure 2:	Soil Borings, Soil Vapor Probes, and Utilities Location Map
Figure 3:	Soil Boring, Sub-Slab Vapor Probe and Monitoring Well Location Map
Figure 4:	Soil and Grab-Groundwater Analytical Data Map
Attachment A:	Regulatory Correspondence
Attachment B:	Soil and Grab-Groundwater Sampling Field Procedures

DISTRIBUTION

A copy of this report has been forwarded to:

Mr. Mike Rogers (via email to mkrogers@arkbest.com)

Leroy Griffin (via email to lgriffin@oaklandnet.com)

TABLES

Table 1
Sub-Slab Vapor Analytical Data

ABF Freight System Facility
4575 Tidewater Avenue
Oakland, California

Sample ID	Sample Date	Analytical Test Methods																
		ASTM D-1946				EPA TO-15											EPA TO-17	
		Carbon Dioxide (%)	Methane (%)	Oxygen (%)	Helium (%)	PCE (µg/m³)	1,1,2-TCA (µg/m³)	1,2,4 - TMB (µg/m3)	TPHg (µg/m³)	Benzene (µg/m³)	Toluene (µg/m³)	Ethyl Benzene (µg/m³)	Ethyl Acetate (µg/m³)	Total Xylenes (µg/m³)	Ethanol (µg/m³)	Other VOCs	(µg/m³)	Naphthalene (µg/m³)	TPHd (µg/m3)
SVP-1	6/20/2012	2.2	<0.0001	16	0.049	**60**	<11	<10	<1,800	<2.8	<7.7	<8.8	**20**	<27	**180**	ND		<2.0	
SVP-1	12/17/2012				8.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA			<0.6	<125
SVP-1	1/17/2013	0.8	<0.0002	20	0.23	**16**	<11	<10	**1,300**	<6.5	<7.7	**9.6**	**33**	**77**	**290**	**Acetone, 340**		**2.0**	
SVP-2	6/20/2012	0.22	0.00018	18	<0.005	**530**	**38**	**13**	**1,900**	**2.9**	**11**	**20**	**19**	**160**	**100**	**Acetone, 230**		**3.4**	
SVP-2	12/17/2012				1.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA			<0.6	<125
SVP-2	1/17/2013				40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA				
SVP-2	2/5/2013	1.21	<0.0009	17.1	NA	**901**	<0.03	**0.02**	NA	**0.03**	**0.02**	<0.02	<0.02	**0.04**	NA	**Acetone, 20.4 1,1-DFE, 12.5 (leak check) Others as listed on Certified Analytical Report**			
SVP-2 (QC Sample)	2/5/2013	1.22	<0.001	17.3	NA	**971**	<0.03	**0.064**	**450***	**0.15**	**0.21**	<0.02	<0.02	**0**	**NA**	**Acetone, 67.1 1,1-DFE, 426 (leak check) Others as listed on Certified Analytical Report**			
ESLs for Commercial Indoor Air		2.1	0.77	NA	100	0.42	1,300	4.9	NA	440	NA	NA						0.36	570
Attenuated Commercial Indoor Air[a]		42	15.4	NA	2,000	8.4	26,000	98	NA	8,800	NA	NA						7.2	11,400

Notes:

ID = Identification
% = Percentage
µg/m³ = micrograms per meter cubed
PCE = Tetracholoroethene
1,1,2-TCA = 1,1,2 - Trichloroethane
1,2,4-TMB = 1,2,4 - Trimethylbenzene
TPHg = Total Petroleum Hydrcarbons as Gasoline
1,1-DFE = 1,1-Difluoroethane
ASTM = American Society for Testing Materials

Table 1
Sub-Slab Vapor Analytical Data

ABF Freight System Facility
4575 Tidewater Avenue
Oakland, California

< =	Not detected at or above detection limit
ND =	Not detected
NA =	Not applicable
Bold =	data detected above laboratory detection limits
*	Duplicate sampled was analyzed for TPHg; result of 450 (µg/m^3) was attributed to single discrete peak (PCE).
ESLs =	Environmental Screening Levels (February 2013)
SFRWQCB =	San Francisco Bay Regional Water Quality Control Board, California EPA
	http://www.waterboards.ca.gov/rwqcb2/water_issues/programs/esl.shtml (May 2013)
a=	Attenuation factor for existing commercial building sub-slab from the DTSC-CEPA Vapor Intrusion Guidance (2011) is 0.05

Table 2
Passive Soil Gas Analytical Data

ABF Freight System Facility
4575 Tidewater Avenue
Oakland, California

Sample ID	Sample Deployment Date	Sample Retrieval Date	EPA Method 8260C							
			Vinyl Chloride (ng)	Trichloro-fluoro-ethane (ng)	1,1-Dichloro-ethene (ng)	1,1-Dichloro-ethane (ng)	1,2-Dibromo-ethane (ng)	PCE (ng)	TCE (ng)	Other VOCs (ng)
SG-1	1/22/2014	2/5/2014	<10	<25	<10	<25	<25	<10	<10	A
SG-2	1/22/2014	2/5/2014	<10	<25	<10	<25	<25	**8 J**	<10	ND
SG-3	1/22/2014	2/5/2014	<10	<25	<10	<25	<25	<10	<10	ND
SG-4	1/22/2014	2/5/2014	<10	<25	<10	<25	<25	<10	<10	ND
SG-5	1/22/2014	2/5/2014	<10	<25	<10	<25	<25	**545**	**55**	ND
SG-6	1/22/2014	2/5/2014	<10	<25	<10	<25	<25	**540**	**<10**	ND
SG-6 DUP	1/22/2014	2/5/2014	<10	<25	<10	<25	<25	**834**	**7 J**	ND
SG-7	1/22/2014	2/5/2014	<10	<25	<10	<25	<25	**150**	<10	ND
SG-8	1/22/2014	2/5/2014	<10	<25	<10	<25	<25	**51**	<10	ND
SG-9	1/22/2014	2/5/2014	<10	<25	<10	<25	<25	**7 J**	<10	ND
SG-10	1/22/2014	2/5/2014	<10	<25	<10	<25	<25	**118**	**8 J**	ND

Notes:

ID = Identification
PCE = Tetrachloroethene
TCE = Trichloroethene
ND = Not detected
< = Not detected at or above detection limit
ng = Nanograms
Bold = data detected above laboratory detection limits
A = Chloroform was detected at a concentration of 54 ng
J = Values below limit of quantitation (LOQ) but above the limit of detection (LOD)

Table 3
Soil Analytical Data

ABF Freight System, Inc.
4575 Tidewater Avenue
Oakland, California

Sample ID	Sample Date	Sample Depth (Feet)	EPA Analytical Test Method											
			8260B (mg/kg)										8015 (mg/kg)	
			TPHg	Benzene	Toluene	Ethylbenzene	Total Xylenes	1,1-DCE	cis-1,2-DCE	PCE	TCE	Vinyl Chloride	Carbon Tetrachloride	TPHd	TPHmo
SB-1	8/26/2014	3.5	<0.57	0.00051[A]	<0.0057	<0.0011	<0.0034	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<4.5	0.69[A]
SB-2	8/26/2014	3.5	<0.58	<0.0012	<0.0058	<0.0012	<0.0035	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<46	20[A]
SB-3	8/26/2014	3.5	<0.60	<0.0012	0.00066[A]	<0.0012	<0.0036	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	3.2[A]	5.3
SB-4	8/26/2014	3.5	<0.57	<0.0011	<0.0057	<0.0011	<0.0034	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<46	5.6[A]
SB-5	8/26/2014	3.5	<0.56	<0.0011	<0.0056	<0.0011	<0.0034	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<45	87
SB-6	8/26/2014	3.5	<0.56	0.00042[A]	<0.0056	<0.0011	<0.0034	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<4.5	3.6[A]
Commercial SFRWQCB ESLs - Shallow Soil Screening Levels - Not a Current or Potential Drinking Water Resource															
			500	1.2	9.3	4.7	11	1.9	18	2.6	8.3	0.16	0.58	110	500

Notes:

EPA = Environmental Protecton Agency
SB = Soil Boring
TPHg = Total Petroleum Hydrocarbons - Gasoline Range
1,1-DCE = 1,1-dichloroethene
cis-1,2-DCE = cis-1,2-dichloroethene
PCE = Tetrachloroethene
TCE = Trichloroethene
TPHd = Total Petroleum Hydrocarbons - Diesel Range (C10-C28)
TPHmo = Total Petroleum Hydrocarbons - Motor Oil Range (C28-C40)
mg/kg = Milligrams per kilogram
< = Not detected at or above detection limit
NA = Not analyzed
A = (EPA) Estimated value below the lowest calibration point. Confidence correlates with concentration.
SFRWQCB = San Francisco Bay Regional Water Quality Control Board, California EPA, December 2013, http://www.waterboards.ca.gov/rwqcb2/water_issues/programs/esl.shtml.
ESLs = Environmental Screening Levels (Updated December 2013)
Bold = Exceeds ESL concentration

Table 4
Grab-Groundwater Analytical Data

ABF Freight System, Inc.
4575 Tidewater Avenue
Oakland, California

Sample ID	Sample Date	EPA Analytical Test Method												
		8260B (µg/L)											8015 (µg/L)	
		TPHg	Benzene	Toluene	Ethylbenzene	Total Xylenes	1,1-DCE	cis-1,2-DCE	PCE	TCE	Vinyl Chloride	Carbon Tetrachloride	TPHd	TPHmo
Grab Groundwater Samples Collected From Soil Borings														
SB-1	8/26/2014	<500	<1.0	<5.0	<1.0	<3.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	460	160
SB-2	8/26/2014	<500	<1.0	<5.0	<1.0	<3.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	580	210
SB-3	8/26/2014	NA	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA
SB-4	8/26/2014	**810**	0.61[A]	0.79[A]	3.8	9.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**6200**	**1200**
SB-5	8/26/2014	NA	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA
SB-6	8/26/2014	<500	<1.0	<5.0[B,C]	<1.0[C]	<3.0[B,C]	<1.0[B,C]	<1.0	<1.0[C]	<1.0[B]	<1.0	<1.0[B]	170	110
Commercial SFRWQCB ESLs - Groundwater Screening Levels - Aquatic Receptor, Not a Current or Potential Drinking Water Resource														
		500	46	130	43	100	25	590	120	360	780	9.8	640	640

Notes:

EPA = Environmental Protecton Agency
SB = Soil Boring
TPHg = Total Petroleum Hydrocarbons - Gasoline Range
1,1-DCE = 1,1-dichloroethene
cis-1,2-DCE = cis-1,2-dichloroethene
PCE = Tetrachloroethene
TCE = Trichloroethene
TPHd = Total Petroleum Hydrocarbons - Diesel Range (C10-C28)
TPHmo = Total Petroleum Hydrocarbons - Motor Oil Range (C28-C40)
µg/L = Micrograms per liter
< = Not detected at or above detection limit
NA = Not analyzed
A = (EPA) Estimated value below the lowest calibration point. Confidence correlates with concentration.
B = The associated batch QC was outside the established quality control range for precision.
C = The sample matrix interfered with the ability to make any accurate determination; spike value is high
SFRWQCB = San Francisco Bay Regional Water Quality Control Board, California EPA, December 2013, http://www.waterboards.ca.gov/rwqcb2/water_issues/programs/esl.shtml.
ESLs = Environmental Screening Levels (Updated December 2013)
Bold = Exceeds ESL concentration

TABLE 5

SITE CONCEPTUAL MODEL FOR LNAPL

ABF Freight System Facility
4575 Tidewater Avenue
Oakland, California

SCM Element	SCM Sub-Element	Description	Data Gap	How to Address
Geology and Hydrogeology	Regional	Site is located in the Oakland Harbor area, within the South Bay Hydrologic Planning Area, Santa Clara Valley, East Bay Plain Groundwater Basin.	none	
	Site	Site is underlain by up to 10 feet of compacted fill materials, underlain by tidal marsh deposits and Bay mud. Nearest surface water is the channel extending northerly from San Leandro Bay, separating the island of Alameda and the city of Oakland.	none	
Hydraulic Flow System	Site	Shallow groundwater flow is generally to south and southeast, based on one groundwater monitoring event conducted in 2014. Depth to groundwater is 4 to 5 feet bgs based on 2014 monitoring.	none	
Release History	Site	Four USTs existed at the site; two 10,000-gallon diesel USTs, one 800-gallon motor oil UST, and one 800-gallon waste oil UST. In 1986, Azonic removed the two 800-gallon tanks, along with sludge beneath one of the tanks. Disposal records for two 10,000-gallon tanks show that both diesel tanks have been removed. Release was attributed to overfilling and incidental leaks. LNAPL was identified in one boring inside the maintenance building. This area is not near the former USTs. The LNAPL source is unknown. In general, LNAPL sources at similar sites may include intermittent spills,	Unknown LNAPL source	Conduct sewer line video survey followed by soil and groundwater sampling as appropriate Site inspection to identify evidence for potential releases

TABLE 5

SITE CONCEPTUAL MODEL FOR LNAPL

ABF Freight System Facility
4575 Tidewater Avenue
Oakland, California

SCM Element	SCM Sub-Element	Description	Data Gap	How to Address
		on-site waste oil USTs, and/or sewer lines.		
Plume	Site	Soils data indicate incomplete delineation to low or non-detectable TPHd. TPHg, benzene and other analytes including VOCs were non-detect. Groundwater concentrations are generally less than ESLs for industrial land use, non-drinking water use, aquatic habitat protection. No HVOCs were detected in groundwater. PCE was found in sub-slab vapor at concentrations exceeding ESLs; no source was identified. The occurrence of PCE may be associated with the same sewer system being evaluated as a potential release mechanism for the LNAPL. Groundwater samples collected at the LNAPL site did not contain HVOCs. The underground work bay is a potential barrier to vapor and shallow groundwater migration to the northwest from the location where LNAPL was found. Soil and groundwater data tables and maps are attached.	LNAPL source and extent in soil	Conduct sewer line video survey followed by soil and groundwater sampling as appropriate Site inspection to identify evidence for potential releases
Site	Site	Site is an active trucking terminal; LNAPL was found	None	

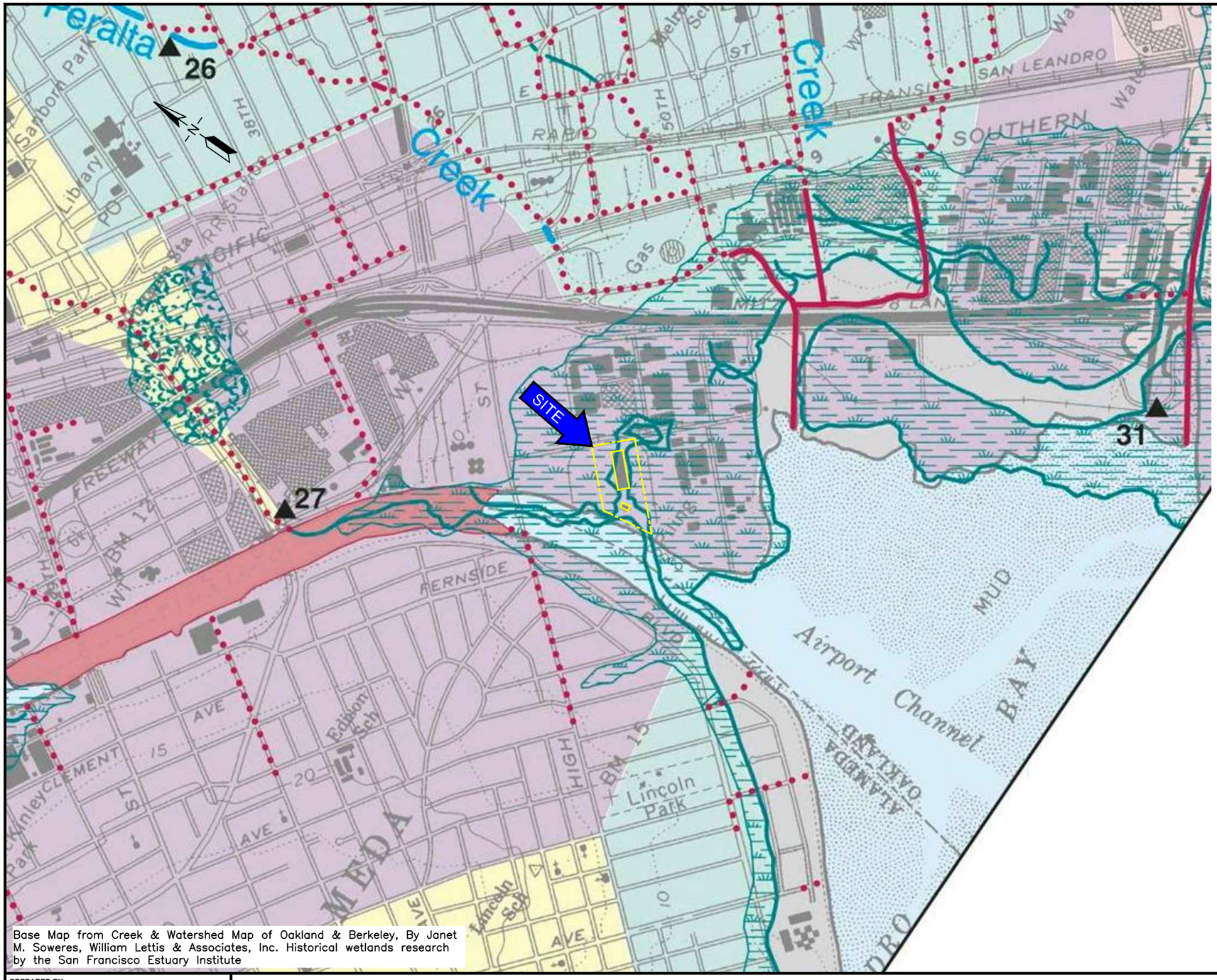
TABLE 5

SITE CONCEPTUAL MODEL FOR LNAPL

ABF Freight System Facility
4575 Tidewater Avenue
Oakland, California

SCM Element	SCM Sub-Element	Description	Data Gap	How to Address
Structures and Operations		inside the maintenance building near western site boundary.		
Other Nearby Releases	Off-site	Tidewater Business Park at 4703 Tidewater is listed in Geotracker as an active case with metals and oils detected; however, no data is posted to Geotracker. This site is approximately 500 feet from the project site. DiSalvo Trucking is listed in Geotracker as an active UST case with diesel impacts to groundwater. This site is located approximately 1,200 feet southeast of the project site.	None – nearby sites have negligible impact on project site based on available data.	
Land Uses and Exposure Scenarios		Industrial land use predominates at the site and vicinity. Soil and groundwater exposure pathways are not complete based on petroleum hydrocarbon conditions. Soil vapor exposures could occur if vapors accumulate in high concentrations beneath existing buildings and if buildings are not well-ventilated	Extent of LNAPL	Conduct sewer line video survey followed by soil and groundwater sampling as appropriate
Specific Data Gaps			Source and extent of LNAPL	Conduct sewer line video survey followed by soil and groundwater sampling as appropriate

FIGURES



EXPLANATION

- Creeks
- Former creeks, buried or drained, and Bay shoreline, circa 1850
- Underground culverts and storm drains
- Engineered channels
- Willow groves, circa 1850
- Beach, circa 1850
- Tidal marsh, circa 1850
- now water
- now fill land
- Bay
- Bay, circa 1850, now fill land
- Artificial bodies of water
- Present watersheds

APPROX. SCALE IN FEET
0 1,000

Base Map from Creek & Watershed Map of Oakland & Berkeley, By Janet M. Soweres, William Lettis & Associates, Inc. Historical wetlands research by the San Francisco Estuary Institute

PREPARED BY
TRINITY source group, inc.
Environmental Consultants
119 Encinal Street
Santa Cruz, California 95060
v: 831.426.5600
f: 831.426.5602

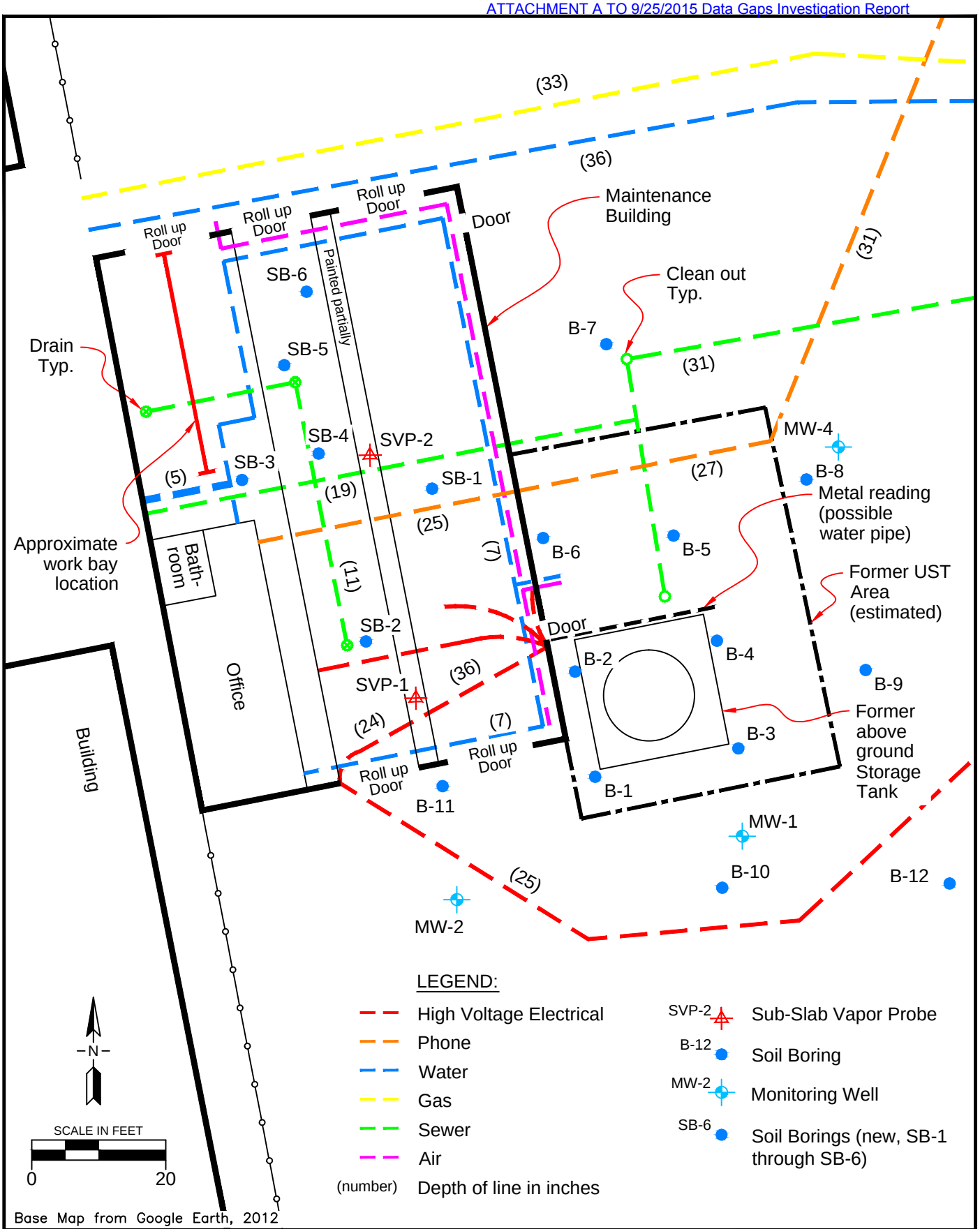
SITE LOCATION MAP

ABF Freight System Facility
4575 Tidewater Ave.
Oakland, California

PROJECT: 154.009.001

FIGURE: 1

REF. 154_001\154.008.001 fig1.dwg



REF. 154_001\154.009.001 figures.dwg

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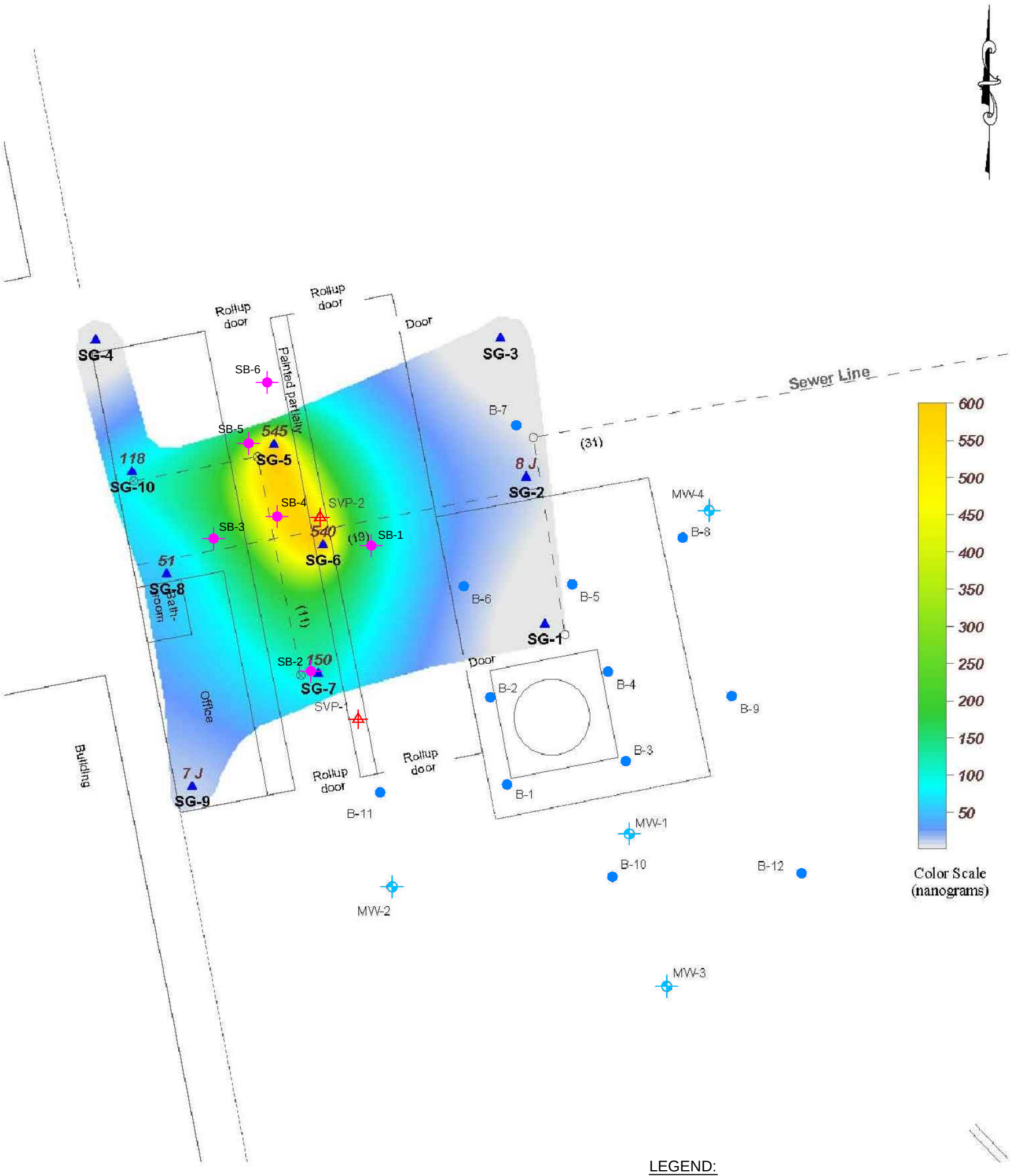
SOIL BORINGS, SUB-SLAB VAPOR PROBE, UTILITIES LOCATION MAP

ABF Freight System Facility
4575 Tidewater Ave.
Oakland, California

PROJECT: 154.009.001

FIGURE: 2



Base Map from Google Earth, Inc. and Beacon Environmental Services, Inc.

REF. 154_001\154.009.001 figures.dwg

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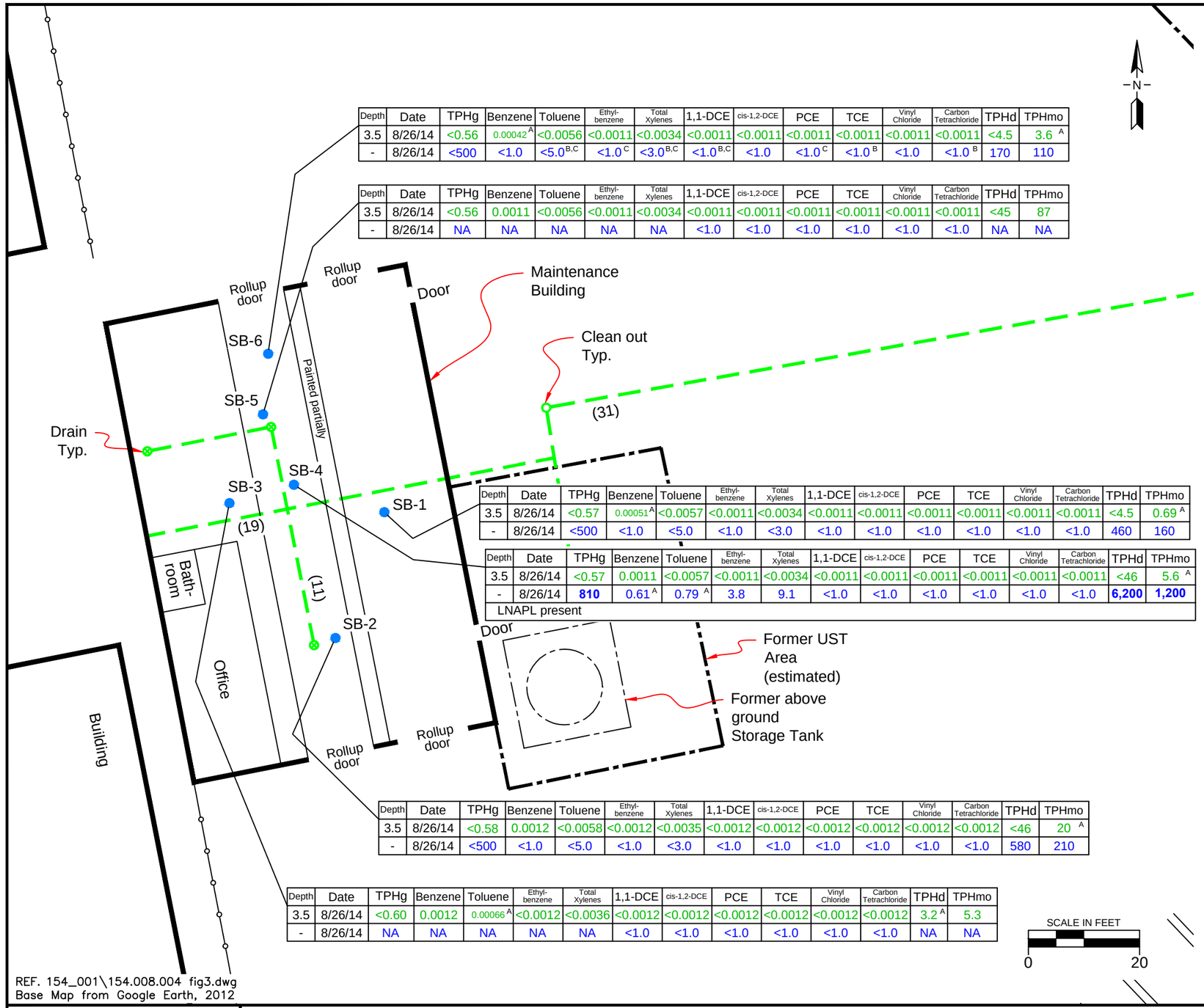
PCE PASSIVE SOIL GAS SURVEY AND PROPOSED BORING LOCATIONS

ABF Freight System Facility
4575 Tidewater Ave.
Oakland, California

PROJECT: 154.009.001

FIGURE: 3



Depth	Date	TPHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes	1,1-DCE	cis-1,2-DCE	PCE	TCE	Vinyl Chloride	Carbon Tetrachloride	TPHd	TPHmo
3.5	8/26/14	<0.56	0.00042 A	<0.0056	<0.0011	<0.0034	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<4.5	3.6 A
-	8/26/14	<500	<1.0	<5.0 B,C	<1.0 C	<3.0 B,C	<1.0 B,C	<1.0	<1.0 C	<1.0 B	<1.0	<1.0 B	170	110

Depth	Date	TPHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes	1,1-DCE	cis-1,2-DCE	PCE	TCE	Vinyl Chloride	Carbon Tetrachloride	TPHd	TPHmo
3.5	8/26/14	<0.56	0.0011	<0.0056	<0.0011	<0.0034	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<45	87
-	8/26/14	NA	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA

Depth	Date	TPHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes	1,1-DCE	cis-1,2-DCE	PCE	TCE	Vinyl Chloride	Carbon Tetrachloride	TPHd	TPHmo
3.5	8/26/14	<0.57	0.00051 A	<0.0057	<0.0011	<0.0034	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<4.5	0.69 A
-	8/26/14	<500	<1.0	<5.0	<1.0	<3.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	460	160

Depth	Date	TPHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes	1,1-DCE	cis-1,2-DCE	PCE	TCE	Vinyl Chloride	Carbon Tetrachloride	TPHd	TPHmo
3.5	8/26/14	<0.57	0.0011	<0.0057	<0.0011	<0.0034	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<46	5.6 A
-	8/26/14	**810**	0.61 A	0.79 A	3.8	9.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**6,200**	**1,200**
LNAPL present														

Depth	Date	TPHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes	1,1-DCE	cis-1,2-DCE	PCE	TCE	Vinyl Chloride	Carbon Tetrachloride	TPHd	TPHmo
3.5	8/26/14	<0.58	0.0012	<0.0058	<0.0012	<0.0035	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<46	20 A
-	8/26/14	<500	<1.0	<5.0	<1.0	<3.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	580	210

Depth	Date	TPHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes	1,1-DCE	cis-1,2-DCE	PCE	TCE	Vinyl Chloride	Carbon Tetrachloride	TPHd	TPHmo
3.5	8/26/14	<0.60	0.0012	0.00066 A	<0.0012	<0.0036	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	3.2 A	5.3
-	8/26/14	NA	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA

SCALE IN FEET
0 20

REF. 154_001\154.008.004 fig3.dwg
Base Map from Google Earth, 2012

LEGEND:

SB-6	Soil Boring
	Sewer
(number)	Depth of line in inches
TPHg	Gasoline Range Total Petroleum Hydrocarbons
1,1-DCE	1,1-Dichloroethene
cis-1,2-DCE	cis-1,2-Dichloroethene
PCE	Tetrachloroethene
TCE	Trichloroethene
TPHd	Diesel Range Total Petroleum Hydrocarbons
TPHmo	Motor Oil Range Total Petroleum Hydrocarbons
<	Not detected at or above detection limit
GREEN	Soil Sample Data in milligrams per kilogram (mg/kg)
BLUE	Grab-Groundwater Sample Data in micrograms per liter (µg/L)
mg/kg	Milligrams per kilogram as in parts per million (ppm)
µg/L	Micrograms per liter as in parts per billion (ppb)
BOLD	Exceeds ESL concentration
LNAPL	Light Non-Aqueous Phased Liquid
A	(EPA) Estimated value below lower calibration point. Confidence correlates with concentration
B	The associated batch QC was outside the established quality control range for precision
C	The sample matrix interfered with the ability to make any accurate determination; spike value is high

SFRWQCB ESLs - Commercial, Shallow Soil - Not a Current or Potential Drinking Water Resource (mg/kg)						
TPHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes	1,1-DCE	cis-1,2-DCE
500	1.2	9.3	4.7	11	1.9	18
PCE	TCE	Vinyl Chloride	Carbon Tetrachloride	TPHd	TPHmo	
2.6	8.3	0.16	0.58	110	500	

SFRWQCB ESLs - Commercial, Groundwater - Aquatic Receptor, Not a Current or Potential Drinking Water Resource (µg/L)						
TPHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes	1,1-DCE	cis-1,2-DCE
500	46	130	43	100	25	590
PCE	TCE	Vinyl Chloride	Carbon Tetrachloride	TPHd	TPHmo	
120	360	780	9.8	640	640	

SFRWQCB San Francisco Bay Regional Water Quality Control Board, California Environmental Protection Agency

EPA Environmental Protection Agency

ESLs Environmental Screening Levels (Updated December 2013)

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SOIL AND GRAB-GROUNDWATER ANALYTICAL DATA MAP

ABF Freight System Facility
4575 Tidewater Ave.
Oakland, California

PROJECT: 154.009.001

FIGURE: 4

ATTACHMENT A

Regulatory Correspondence

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
ALEX BRISCOE, Agency Director

ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
FAX (510) 337-9335

October 23, 2014

Arkansas Bandag Corporation
PO Box 10048
Fort Smith AR 72917

Mr. Mike Rogers
ABF Freight Systems, Inc.
PO Box 10048
Fort Smith AR 72917
(sent via electronic mail to mkrogers@arkbest.com)

Subject: Request for Work Plan; Fuel Leak Case No. RO0003033 and GeoTracker Global ID T0600100018, ABF Freight Systems, 4575 Tidewater Avenue, Oakland, CA 94601

Dear Mr. Rogers:

Alameda County Environmental Health (ACEH) staff has reviewed the case file for the above-referenced site, including the *HVOC Delineation Investigation Report,* dated September 24, 2014. The report was prepared by the Trinity Source Group, Inc (Trinity). Thank you for the report. While the report was generated to delineate a tetrachloroethene plume in soil and groundwater beneath the maintenance building, soil bore SB-4 encountered 3 inches of a Light Non-Aqueous Phased Liquid (LNAPL) beneath the building. From analytical data, the LNAPL appears to be a mid-ranged hydrocarbon product, such as diesel, which is known to have previously been used at the site.

ACEH has re-evaluated the data and recommendations presented in the above-mentioned reports, in conjunction with the case files, to determine if the site can remain eligible for closure as a low risk site under the State Water Resources Control Board's (SWRCBs) Low Threat Underground Storage Tank Case Closure Policy (LTCP). Due to the discovery of LNAPL at the site we have determined that the site currently fails to meet the LTCP General Criteria d (Free Product), e (Site Conceptual Model), f (Secondary Source Removal), and the Media-Specific Criteria for Groundwater (see Geotracker). The additional data indicates that it is no longer appropriate to proceed to closure without further site specific work.

Therefore, at this juncture ACEH requests that you prepare a Data Gap Investigation Work Plan that is supported by a focused Site Conceptual Model (SCM) to address the Technical Comments provided below.

TECHNICAL COMMENTS

1. **LTCP General Criteria d (Free Product) –** The LTCP requires free product to be removed to the extent practicable at release sites where investigations indicate the presence of free product by removing in a manner that minimizes the spread of the unauthorized release into previously uncontaminated zones by using recovery and disposal techniques appropriate to the hydrogeologic conditions at the site, and that properly treats, discharges, or disposes of recovery byproducts in compliance with applicable laws. Additionally, the LTCP requires that abatement of free product migration be used as a minimum objective for the design of any free product removal system.

   ACEH's review of the case files indicates that insufficient data and analysis has been presented to assess free product at the site. Specifically, as discussed above, 3 inches of LNAPL was encountered in soil bore SB-4 during the recent subsurface investigation. ACEH is in agreement with the recommendation contained in the report to evaluate options for LNAPL removal to the extent practicable.

   Please present a strategy in the Data Gap Work Plan (described in Technical Comment 5 below) to address the items discussed above. Alternatively, please provide justification of why the site satisfies this general criterion in the focused SCM described in Technical Comment 5 below.

2. **LTCP General Criteria e (Site Conceptual Model) –** According to the LTCP, the SCM is a fundamental element of a comprehensive site investigation. The SCM establishes the source and attributes of the unauthorized release, describes all affected media (including soil, groundwater, and soil vapor as appropriate), describes local geology, hydrogeology and other physical site characteristics that affect contaminant environmental transport and fate, and identifies all confirmed and potential contaminant receptors (including water supply wells, surface water bodies, structures and their inhabitants). The SCM is relied upon by practitioners as a guide for investigative design and data collection. All relevant site characteristics identified by the SCM shall be assessed and supported by data so that the nature, extent and mobility of the release have been established to determine conformance with applicable criteria in this policy.

   Our review of the case files indicates that insufficient data collection and analysis has not been presented to assess the nature, extent, and mobility of the release and to support compliance with General Criteria d as discussed in Technical Comment 1 above and General Criteria f, and the Media Specific Criteria for Groundwater as described in Technical Comments 3 and 4 below, respectively.

3. **General Criteria f – Secondary Source Has Been Removed to the Extent Practicable –** "Secondary source" is defined as petroleum-impacted soil or groundwater located at or immediately beneath the point of release from the primary source. Unless site attributes prevent secondary source removal (e.g. physical or infrastructural constraints exist whose removal or relocation would be technically or economically infeasible), petroleum-release sites are required to undergo secondary source removal to the extent practicable as described in the policy. "To the extent practicable" means implementing a cost-effective corrective action which removes or destroys-in-place the most readily recoverable fraction of source-area mass. It is expected that most secondary mass removal efforts will be completed in one year or less. Following removal or destruction of the secondary source, additional removal or active remedial actions shall not be required by regulatory agencies unless (1) necessary to abate a demonstrated threat to human health or (2) the groundwater plume does not meet the definition of low threat as described in this policy.

   As discussed above, 3 inches of LNAPL was encountered in soil bore SB-4 during the recent subsurface investigation. ACEH is in agreement with the recommendation contained in the report to evaluate options for LNAPL removal to the extent practicable.

   Please present a strategy in the Data Gap Work Plan (described in Technical Comment 5 below) to address the items discussed above. Alternatively, please provide justification of why the site satisfies this general criterion in the focused SCM described in Technical Comment 5 below.

4. **LTCP Media Specific Criteria for Groundwater –** To satisfy the media-specific criteria for groundwater, the contaminant plume that exceeds water quality objectives must be stable or decreasing in areal extent, and meet all of the additional characteristics of one of the five classes of sites listed in the policy.

   Our review of the case files indicates that insufficient data collection and analysis has been presented to support the requisite characteristics of plume stability or plume classification as follows:

   a. **Lateral Extent of Hydrocarbon Plume –** ACEH is in general agreement that the lateral extent of the LNAPL appears to be defined; however, the lateral extent of the dissolved-phased hydrocarbon plume, generally understood to flow towards the south-southwest along the former filled tidal channel, has not been defined towards the open estuary channel to the west of the site. The presence of LNAPL at SB-4 is of concern due to the proximity of the channel on the west. Please know that San Francisco Bay Regional Water Quality Control Board (RWQCB) Environmental Screening Levels (ESLs) for surface water bodies (estuarine standards) apply at the site.

   Please present a strategy in the Revised Data Gap Work Plan (described in Technical Comment 5 below) to address the items discussed above. Alternatively, please provide justification of why the site satisfies the Media-Specific Criteria for Groundwater in the focused SCM described in Technical Comment 5 below.

5. **Data Gap Investigation Work Plan and Focused Site Conceptual Model –** Please prepare a Data Gap Investigation Work Plan to address the technical comments listed above. Please support the scope of work in the Revised Data Gap Investigation Work Plan with a focused SCM and Data Quality Objectives (DQOs)

that relate the data collection to each LTCP criteria. For example please clarify which scenario within each Media-Specific Criteria a sampling strategy is intended to apply to.

In order to expedite review, ACEH requests the focused SCM be presented in a tabular format that highlights the major SCM elements and associated data gaps, which need to be addressed to progress the site to case closure under the LTCP. Please see Attachment A "Site Conceptual Model Requisite Elements". Please sequence activities in the proposed revised data gap investigation scope of work to enable efficient data collection in the fewest mobilizations possible.

TECHNICAL REPORT REQUEST

Please upload technical reports to the ACEH ftp site (Attention: Mark Detterman), and to the State Water Resources Control Board's Geotracker website, in accordance with the specified file naming convention below, according to the following schedule:

- **January 9, 2015 –** Data Gap Investigation Plan and Focused Site Conceptual Model
  (File to be named: RO3033_WP_SCM_R_yyyy-mm-dd)

These reports are being requested pursuant to California Health and Safety Code Section 25296.10. 23 CCR Sections 2652 through 2654, and 2721 through 2728 outline the responsibilities of a responsible party in response to an unauthorized release from a petroleum UST system, and require your compliance with this request.

Online case files are available for review at the following website: http://www.acgov.org/aceh/index.htm. If your email address does not appear on the cover page of this notification, ACEH is requesting you provide your email address so that we can correspond with you quickly and efficiently regarding your case.

If you have any questions, please call me at (510) 567-6876 or send me an electronic mail message at mark.detterman@acgov.org.

Sincerely,

Digitally signed by Mark E. Detterman
DN: cn=Mark E. Detterman, o, ou, email, c=US
Date: 2014.10.23 10:50:14 -07'00'

Mark E. Detterman, PG, CEG
Senior Hazardous Materials Specialist

Enclosures: Attachment 1 – Responsible Party (ies) Legal Requirements/Obligations & Electronic Report Upload (ftp) Instructions

Attachment A – Site Conceptual Model Requisite Elements

cc: Debra Moser, Trinity Source Group, Inc, 500 Chestnut Street, Suite 225, Santa Cruz, CA 95060
(sent via electronic mail to djm@tsgcorp.net)

Leroy Griffin, Oakland Fire Department 250 Frank H. Ogawa Plaza, Ste. 3341, Oakland, CA 94612-2032
(sent via electronic mail to lgriffin@oaklandnet.com)

Dilan Roe (sent via electronic mail to dilan.roe@acgov.org)
Mark Detterman, ACEH, (sent via electronic mail to mark.detterman@acgov.org)
Geotracker, Electronic File

Attachment 1

Responsible Party(ies) Legal Requirements / Obligations

REPORT REQUESTS

These reports are being requested pursuant to California Health and Safety Code Section 25296.10. 23 CCR Sections 2652 through 2654, and 2721 through 2728 outline the responsibilities of a responsible party in response to an unauthorized release from a petroleum UST system, and require your compliance with this request.

ELECTRONIC SUBMITTAL OF REPORTS

ACEH's Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of reports in electronic form. The electronic copy replaces paper copies and is expected to be used for all public information requests, regulatory review, and compliance/enforcement activities. Instructions for submission of electronic documents to the Alameda County Environmental Cleanup Oversight Program FTP site are provided on the attached "Electronic Report Upload Instructions." Submission of reports to the Alameda County FTP site is an addition to existing requirements for electronic submittal of information to the State Water Resources Control Board (SWRCB) GeoTracker website. In September 2004, the SWRCB adopted regulations that require electronic submittal of information for all groundwater cleanup programs. For several years, responsible parties for cleanup of leaks from underground storage tanks (USTs) have been required to submit groundwater analytical data, surveyed locations of monitoring wells, and other data to the GeoTracker database over the Internet. Beginning July 1, 2005, these same reporting requirements were added to Spills, Leaks, Investigations, and Cleanup (SLIC) sites. Beginning July 1, 2005, electronic submittal of a complete copy of all reports for all sites is required in GeoTracker (in PDF format). Please visit the SWRCB website for more information on these requirements (http://www.waterboards.ca.gov/water_issues/programs/ust/electronic_submittal/).

PERJURY STATEMENT

All work plans, technical reports, or technical documents submitted to ACEH must be accompanied by a cover letter from the responsible party that states, at a minimum, the following: "I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge." This letter must be signed by an officer or legally authorized representative of your company. Please include a cover letter satisfying these requirements with all future reports and technical documents submitted for this fuel leak case.

PROFESSIONAL CERTIFICATION & CONCLUSIONS/RECOMMENDATIONS

The California Business and Professions Code (Sections 6735, 6835, and 7835.1) requires that work plans and technical or implementation reports containing geologic or engineering evaluations and/or judgments be performed under the direction of an appropriately registered or certified professional. For your submittal to be considered a valid technical report, you are to present site specific data, data interpretations, and recommendations prepared by an appropriately licensed professional and include the professional registration stamp, signature, and statement of professional certification. Please ensure all that all technical reports submitted for this fuel leak case meet this requirement.

UNDERGROUND STORAGE TANK CLEANUP FUND

Please note that delays in investigation, later reports, or enforcement actions may result in your becoming ineligible to receive grant money from the state's Underground Storage Tank Cleanup Fund (Senate Bill 2004) to reimburse you for the cost of cleanup.

AGENCY OVERSIGHT

If it appears as though significant delays are occurring or reports are not submitted as requested, we will consider referring your case to the Regional Board or other appropriate agency, including the County District Attorney, for possible enforcement actions. California Health and Safety Code, Section 25299.76 authorizes enforcement including administrative action or monetary penalties of up to $10,000 per day for each day of violation.

Alameda County Environmental Cleanup Oversight Programs (LOP and SLIC)	**REVISION DATE:** May 15, 2014 ATTACHMENT A TO 9/25/2015 Data Gaps Investigation Report
	ISSUE DATE: July 5, 2005
	PREVIOUS REVISIONS: October 31, 2005; December 16, 2005; March 27, 2009; July 8, 2010, July 25, 2010
SECTION: Miscellaneous Administrative Topics & Procedures	**SUBJECT:** Electronic Report Upload (ftp) Instructions

The Alameda County Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of all reports in electronic form to the county's ftp site. Paper copies of reports will no longer be accepted. The electronic copy replaces the paper copy and will be used for all public information requests, regulatory review, and compliance/enforcement activities.

REQUIREMENTS

- **Please do not submit reports as attachments to electronic mail.**
- Entire report including cover letter must be submitted to the ftp site as **a single portable document format (PDF) with no password protection**.
- It is **preferable** that reports be converted to PDF format from their original format, (e.g., Microsoft Word) rather than scanned.
- **Signature pages and perjury statements must be included and have either original or electronic signature.**
- **Do not password protect the document**. Once indexed and inserted into the correct electronic case file, the document will be secured in compliance with the County's current security standards and a password. **Documents with password protection will not be accepted**.
- Each page in the PDF document should be rotated in the direction that will make it easiest to read on a computer monitor.
- Reports must be named and saved using the following naming convention:

  RO#_Report Name_Year-Month-Date (e.g., RO#5555_WorkPlan_2005-06-14)

Submission Instructions

1) Obtain User Name and Password
   a) Contact the Alameda County Environmental Health Department to obtain a User Name and Password to upload files to the ftp site.
      i) Send an e-mail to deh.loptoxic@acgov.org
   b) In the subject line of your request, be sure to include **"ftp PASSWORD REQUEST"** and in the body of your request, include the **Contact Information, Site Addresses**, and the **Case Numbers (RO# available in Geotracker) you will be posting for**.

2) Upload Files to the ftp Site
   a) Using Internet Explorer (IE4+), go to ftp://alcoftp1.acgov.org
      (i) Note: Netscape, Safari, and Firefox browsers will not open the FTP site as they are NOT being supported at this time.
   b) Click on Page located on the Command bar on upper right side of window, and then scroll down to Open FTP Site in Windows Explorer.
   c) Enter your User Name and Password. (Note: Both are Case Sensitive.)
   d) Open "My Computer" on your computer and navigate to the file(s) you wish to upload to the ftp site.
   e) With both "My Computer" and the ftp site open in separate windows, drag and drop the file(s) from "My Computer" to the ftp window.

3) Send E-mail Notifications to the Environmental Cleanup Oversight Programs
   a) Send email to deh.loptoxic@acgov.org notify us that you have placed a report on our ftp site.
   b) Copy your Caseworker on the e-mail. Your Caseworker's e-mail address is the entire first name then a period and entire last name @acgov.org. (e.g., firstname.lastname@acgov.org)
   c) The subject line of the e-mail must start with the RO# followed by **Report Upload**. (e.g., Subject: RO1234 Report Upload) If site is a new case without an RO#, use the street address instead.
   d) If your document meets the above requirements and you follow the submission instructions, you will receive a notification by email indicating that your document was successfully uploaded to the ftp site.

ATTACHMENT A

Site Conceptual Model Requisite Elements

TABLE 2

DATA GAPS AND PROPOSED INVESTIGATION

Item	Data Gap	Proposed Investigation	Rationale	Analysis
5	Evaluate the possible presence of impacts to deeper groundwater. Evaluate deeper groundwater concentration trends over time. Obtain data regarding the vertical groundwater gradient. Obtain more lithological data below 20 feet bgs.	Install four continuous multichannel tubing (CMT) groundwater monitoring wells (aka multi-port wells) to approximately 65 feet bgs in the northern parking lot with ports at three depths (monitoring well locations may be adjusted pending results of shallow grab groundwater samples; we will discuss any potential changes with ACEH before proceeding). Groundwater monitoring frequency to be determined. Soil samples will be collected only if there are field indications of impacts. Soil lithology will be logged. However, information regarding the moisture content of soil may not be reliable using sonic drilling technology (two borings will be logged using direct push technology; see Item 4, above).	One well is proposed at the western (upgradient) property boundary to confirm that there are no deeper groundwater impacts from upgradient. Two wells are proposed near the center of the northern parking lot to evaluate potential impacts in an area where deeper impacts, if any, would most likely to be found. One well is proposed at the eastern (downgradient) property boundary to confirm that there are no impacts extending off-site. Port depths will be chosen based on the locations of saturated soils (as logged in direct push borings; see Item 4, above), but are expected at approximately 15, 45, and 60 feet bgs.	*Groundwater:* VOCs by EPA Method 8260, dissolved oxygen, oxidation/reduction potential, temperature, pH, and specific conductance.
6	Evaluate possible off-site migration of impacted soil vapor in the downgradient direction (east). Evaluate concentration trends over time.	Install 4 temporary nested soil vapor probes at approximately 4 and 8 feet bgs along the eastern property boundary. Based on the results of the sampling, two sets of nested probes will be converted to vapor monitoring wells to allow for evaluation of VOC concentration trends over time.	Available data indicate that PCE and TCE are present in soil vapor in the eastern portion of the northern parking lot. Samples are proposed on approximately 50-foot intervals along the eastern property boundary to provide a transect of concentrations through the vapor plume. The depths of 4 and 8 feet bgs are chosen to provide data closest to the source (i.e., groundwater) while avoiding saturated soil, and also provide shallower data to help evaluate potential attenuation within the soil column. Two sets of nested vapor probes will be converted into vapor monitoring wells (by installing well boxes at ground surface); the locations of the permanent wells will be chosen based on the results of samples from the temporary probes.	*Soil vapor*: VOCs by EPA Method TO-15.
7	Evaluate potential for off-site migration of impacted groundwater in the downgradient direction (east).	Advance two borings to approximately 20 feet bgs in the parking lot of the property east of the Crown site for collection of grab groundwater samples.	Two borings are proposed off-site, on the property east of the Crown site, just east of the building in the expected area of highest potential VOC concentrations.	*Groundwater:* VOCs by EPA Method 8260, dissolved oxygen, oxidation/reduction potential, temperature, pH, and specific conductance.
8	Evaluate VOC concentrations just north of the highest concentration area.	Advance two borings to approximately 20 feet bgs north of Building A for collection of soil and grab groundwater samples. Soil samples will be collected at two depths in the vadose zone. Soil samples will be collected based on field indications of impacts (PID readings, odor, staining) or, in the absence of field indications of impacts, at 5 and 10 feet bgs.	The highest concentrations of PCE in groundwater were detected at boring NM-B-32, just north of Building A. The nearest available data to the north are approximately 75 feet away. One of the borings will be advanced approximately 20 feet north of NM-B-32 to provide data close to the highest concentration area. A second boring will be advanced approximately halfway between the first boring and former boring NM-B-33 to provide additional spatial data for contouring purposes. These borings will be part of a transect in the highest concentration area.	*Groundwater:* VOCs by EPA Method 8260, dissolved oxygen, oxidation/reduction potential, temperature, pH, and specific conductance. *Soil:* VOCs by EPA Method 8260 (soil samples to be collected using field preservation in accordance with EPA Method 5035).
9	Evaluate VOC concentrations in soil vapor in the south parcel of the site.	Install four temporary soil vapor probes at approximately 5 feet bgs around boring SV-25, where PCE was detected in soil vapor at a low concentration.	PCE was detected in soil vapor sample SV-25 in the southern parcel, although was not detected in groundwater in that area. Three probes will be installed approximately 30 feet from of boring SV-25 to attempt to delineate the extent of impacts. A fourth probe is proposed west of the original sample, close to the property boundary and the location of mapped utility lines, which may be a potential conduit, to evaluate potential impacts from the west.	*Soil vapor*: VOCs by EPA Method TO-15.
10	Obtain additional information regarding subsurface structures and utilities to further evaluate migration pathways and sources.	Ground penetrating radar (GPR) and other utility locating methodologies will be used, as appropriate, to further evaluate the presence of unknown utilities and structures at the site.	Utilities have been identified at the site that include an on-site sewer lateral and drain line, and shallow water, electric, and gas lines. Given the current understanding of the distribution of PCE in groundwater at the site, it is possible that other subsurface utilities, and specifically sewer laterals, exist that may act as a source or migration pathway for distribution of VOCs in the subsurface.	NA

TABLE 1

INITIAL SITE CONCEPTUAL MODEL

CSM Element	CSM Sub-Element	Description	Data Gap	How to Address
Geology and Hydrogeology	Regional	The site is in the northwest portion of the Livermore Valley, which consists of a structural trough within the Diablo Range and contains the Livermore Valley Groundwater Basin (referred to as "the Basin") (DWR, 2006). Several faults traverse the Basin, which act as barriers to groundwater flow, as evidenced by large differences in water levels between the upgradient and downgradient sides of these faults (DWR, 2006). The Basin is divided into 12 groundwater basins, which are defined by faults and non-water-bearing geologic units (DWR, 1974). The hydrogeology of the Basin consists of a thick sequence of fresh-water-bearing continental deposits from alluvial fans, outwash plains, and lacustrine environments to up to approximately 5,000 feet bgs (DWR, 2006). Three defined fresh-water bearing geologic units exist within the Basin: Holocene Valley Fill (up to approximately 400 feet bgs in the central portion of the Basin), the Plio-Pleistocene Livermore Formation (generally between approximately 400 and 4,000 feet bgs in the central portion of the Basin), and the Pliocene Tassajara Formation (generally between approximately 250 and 5,000 or more feet bgs) (DWR, 1974). The Valley Fill units in the western portion of the Basin are capped by up to 40 feet of clay (DWR, 2006).	None	NA
	Site	***Geology:*** Borings advanced at the site indicate that subsurface materials consist primarily of finer-grained deposits (clay, sandy clay, silt and sandy silt) with interbedded sand lenses to 20 feet below ground surface (bgs), the approximate depth to which these borings were advanced. The documented lithology for one on-site boring that was logged to approximately 45 feet bgs indicates that beyond approximately 20 feet bgs, fine-grained soils are present to approximately 45 feet bgs. A cone penetrometer technology test indicated the presence of sandier lenses from approximately 45 to 58 feet bgs and even coarser materials (interbedded with finer-grained materials) from approximately 58 feet to 75 feet bgs, the total depth drilled. The lithology documented at the site is similar to that reported at other nearby sites, specifically the Montgomery Ward site (7575 Dublin Boulevard), the Quest laboratory site (6511 Golden Gate Drive), the Shell-branded Service Station site (11989 Dublin Boulevard), and the Chevron site (7007 San Ramon Road). ***Hydrogeology:*** Shallow groundwater has been encountered at depths of approximately 9 to 15 feet bgs. The hydraulic gradient and groundwater flow direction have not been specifically evaluated at the site.	As noted, most borings at the site have been advanced to approximately 20 feet bgs, and one boring has been advanced and logged to 45 feet bgs; CPT data was collected to 75 feet bgs at one location. Lithologic data will be obtained from additional borings that will be advanced on site to further the understanding of the subsurface, especially with respect to deeper lithology. The on-site shallow groundwater horizontal gradient has not been confirmed. Additionally, it is not known if there may be a vertical component to the hydraulic gradient.	Two direct push borings and four multi-port wells will be advanced to depth (up to approximately 75 feet bgs) and soil lithology will be logged. See items 4 and 5 on Table 2. Shallow and deeper groundwater monitoring wells will be installed to provide information on lateral and vertical gradients. See Items 2 and 5 on Table 2.
Surface Water Bodies		The closest surface water bodies are culverted creeks. Martin Canyon Creek flows from a gully west of the site, enters a culvert north of the site, and then bends to the south, passing approximately 1,000 feet east of the site before flowing into the Alamo Canal. Dublin Creek flows from a gully west of the site, enters a culvert approximately 750 feet south of the site, and then joins Martin Canyon Creek approximately 750 feet southeast of the site.	None	NA
Nearby Wells		The State Water Resources Control Board's GeoTracker GAMA website includes information regarding the approximate locations of water supply wells in California. In the vicinity of the site, the closest water supply wells presented on this website are depicted approximately 2 miles southeast of the site; the locations shown are approximate (within 1 mile of actual location for California Department of Public Health supply wells and 0.5 mile for other supply wells). No water-producing wells were identified within 1/4 mile of the site in the well survey conducted for the Quest Laboratory site (6511 Golden Gate Drive; documented in 2009); information documented in a 2005 report for the Chevron site at 7007 San Ramon Road indicates that a water-producing well may exist within 1/2 mile of the site.	A formal well survey is needed to identify water-producing, monitoring, cathodic protection, and dewatering wells.	Obtain data regarding nearby, permitted wells from the California Department of Water Resources and Zone 7 Water Agency (Item 11 on Table 2).

Site Conceptual Model

The site conceptual model (SCM) is an essential decision-making and communication tool for all interested parties during the site characterization, remediation planning and implementation, and closure process. A SCM is a set of working hypotheses pertaining to all aspects of the contaminant release, including site geology, hydrogeology, release history, residual and dissolved contamination, attenuation mechanisms, pathways to nearby receptors, and likely magnitude of potential impacts to receptors.

The SCM is initially used to characterize the site and identify data gaps. As the investigation proceeds and the data gaps are filled, the working hypotheses are modified, and the overall SCM is refined and strengthened until it is said to be "validated". At this point, the focus of the SCM shifts from site characterization towards remedial technology evaluation and selection, and later remedy optimization, and forms the foundation for developing the most cost-effective corrective action plan to protect existing and potential receptors.

For ease of review, Alameda County Environmental Health (ACEH) requests utilization of tabular formats to (1) highlight the major SCM elements and their associated data gaps which need to be addressed to progress the site to case closure (see Table 1 of attached example), and (2) highlight the identified data gaps and proposed investigation activities (see Table 2 of the attached example). ACEH requests that the tables presenting the SCM elements, data gaps, and proposed investigation activities be updated as appropriate at each stage of the project and submitted with work plans, feasibility studies, corrective action plans, and requests for closures to support proposed work, conclusions, and/or recommendations.

The SCM should incorporate, but is not limited to, the topics listed below. Please support the SCM with the use of large-scaled maps and graphics, tables, and conceptual diagrams to illustrate key points. Please include an extended site map(s) utilizing an aerial photographic base map with sufficient resolution to show the facility, delineation of streets and property boundaries within the adjacent neighborhood, downgradient irrigation wells, and proposed locations of transects, monitoring wells, and soil vapor probes.

a. Regional and local (on-site and off-site) geology and hydrogeology. Include a discussion of the surface geology (e.g., soil types, soil parameters, outcrops, faulting), subsurface geology (e.g., stratigraphy, continuity, and connectivity), and hydrogeology (e.g., water-bearing zones, hydrologic parameters, impermeable strata). Please include a structural contour map (top of unit) and isopach map for the aquitard that is presumed to separate your release from the deeper aquifer(s), cross sections, soil boring and monitoring well logs and locations, and copies of regional geologic maps.

b. Analysis of the hydraulic flow system in the vicinity of the site. Include rose diagrams for depicting groundwater gradients. The rose diagram shall be plotted on groundwater elevation contour maps and updated in all future reports submitted for your site. Please address changes due to seasonal precipitation and groundwater pumping, and evaluate the potential interconnection between shallow and deep aquifers. Please include an analysis of vertical hydraulic gradients, and effects of pumping rates on hydraulic head from nearby water supply wells, if appropriate. Include hydraulic head in the different water bearing zones and hydrographs of all monitoring wells.

c. Release history, including potential source(s) of releases, potential contaminants of concern (COC) associated with each potential release, confirmed source locations, confirmed release locations, and existing delineation of release areas. Address primary leak source(s) (e.g., a tank, sump, pipeline, etc.) and secondary sources (e.g., high-

Site Conceptual Model (continued)

concentration contaminants in low-permeability lithologic soil units that sustain groundwater or vapor plumes). Include local and regional plan view maps that illustrate the location of sources (former facilities, piping, tanks, etc.).

d. Plume (soil gas and groundwater) development and dynamics including aging of source(s), phase distribution (NAPL, dissolved, vapor, residual), diving plumes, attenuation mechanisms, migration routes, preferential pathways (geologic and anthropogenic), magnitude of chemicals of concern and spatial and temporal changes in concentrations, and contaminant fate and transport. Please include three-dimensional plume maps for groundwater and two-dimensional soil vapor plume plan view maps to provide an accurate depiction of the contaminant distribution of each COC.

e. Summary tables of chemical concentrations in different media (i.e., soil, groundwater, and soil vapor). Please include applicable environmental screening levels on all tables. Include graphs of contaminant concentrations versus time.

f. Current and historic facility structures (e.g., buildings, drain systems, sewer systems, underground utilities, etc.) and physical features including topographical features (e.g., hills, gradients, surface vegetation, or pavement) and surface water features (e.g. routes of drainage ditches, links to water bodies). Please include current and historic site maps.

g. Current and historic site operations/processes (e.g., parts cleaning, chemical storage areas, manufacturing, etc.).

h. Other contaminant release sites in the vicinity of the site. Hydrogeologic and contaminant data from those sites may prove helpful in testing certain hypotheses for the SCM. Include a summary of work and technical findings from nearby release sites, including the two adjacent closed LUFT sites, (i.e., Montgomery Ward site and the Quest Laboratory site).

i. Land uses and exposure scenarios on the facility and adjacent properties. Include beneficial resources (e.g., groundwater classification, wetlands, natural resources, etc.), resource use locations (e.g., water supply wells, surface water intakes), subpopulation types and locations (e.g., schools, hospitals, day care centers, etc.), exposure scenarios (e.g. residential, industrial, recreational, farming), and exposure pathways, and potential threat to sensitive receptors. Include an analysis of the contaminant volatilization from the subsurface to indoor/outdoor air exposure route (i.e., vapor pathway). Please include copies of Sanborn maps and aerial photographs, as appropriate.

j. Identification and listing of specific data gaps that require further investigation during subsequent phases of work. Proposed activities to investigate and fill data gaps identified.

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
ALEX BRISCOE, Agency Director

ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
FAX (510) 337-9335

October 29, 2014

Arkansas Bandag Corporation
PO Box 10048
Fort Smith AR 72917

Mr. Mike Rogers
ABF Freight Systems, Inc.
PO Box 10048
Fort Smith AR 72917
(sent via electronic mail to mkrogers@arkbest.com)

Subject: Request for Work Plan; Site Cleanup Program Case No. RO0003134 and GeoTracker Global ID T00000005825, ABF Freight Maintenance Shop, 4575 Tidewater Avenue, Oakland, CA 94601

Dear Mr. Rogers:

Alameda County Environmental Health (ACEH) staff has reviewed the case file for the above-referenced site, including the *HVOC Delineation Investigation Report,* dated September 24, 2014. The report was prepared by the Trinity Source Group, Inc (Trinity). Thank you for the report. The results of the investigation yielded non-detectable HVOC concentrations in soil and groundwater and suggest that tetrachloroethene (PCE) is not laterally extensive in soil and groundwater beneath the maintenance building at the site. Although soil and groundwater concentrations appear limited, the source, and extent, of elevated sub-slab PCE vapor has not been defined and these are necessary actions in order to determine the next actions appropriate at the site.

Therefore, based on the review of the case file, ACEH requests that you address the following technical comments and send us the documents requested below.

TECHNICAL COMMENTS

1. **HVOC Data Gap Work Plan** – While the extent of PCE contamination in soil and groundwater appears limited, recent sub-slab vapor sampling beneath the maintenance building detected elevated concentrations of PCE at SVP-2 (up to 901 micrograms per cubic meter [µg/m^3] PCE) that exceed the attenuated (using the default DTSC attenuation factor of 0.05) commercial indoor air Environmental Screening Levels (ESLs) promulgated by the San Francisco Bay Regional Water Quality Control Board (RWQCB). This data sample was confirmed by a passive soil gas sampling event that expanded the area of concern (SG-5 and SG-6). One passive location (SG-6) corresponded to previous subslab vapor point (SVP-2) that detected PCE vapor concentrations substantially above the indoor air ESLs promulgated by the RWQCB, and the Department of Toxic Substance Control (DTSC) modified indoor air screening levels of 2.1 micrograms per cubic meter (µg/m^3). Because the two passive soil vapor samples (SG-5 and SG-6) detected similar results, ACEH assumes that the second location (SG-5) could contain similar PCE concentrations to SVP-2 if a subslab vapor point were to be installed in proximity to SG-5. ACEH noted that passive sample location SG-5 is in the vicinity of a floor drain that could be one potential source of subsurface PCE contamination at the site.

   ACEH also notes that the soil bore which contained 3 inches of Light Non-Aqueous Phased Liquids (LNAPL; SB-4) was installed within what appears to be a PCE contamination core zone. This suggests that the PCE may be associated with the LNAPL, that removal of the LNAPL may assist in the removal of PCE contamination, and that a level of caution should be taken as the LNAPL is further evaluated.

Trinity has also stated that because the building is used for maintenance, and the roll-up doors on opposite sides of the building are generally open, that the potential vapor intrusion threat is considered low. However, because distribution of the PCE source area and extent remains undefined except by a sub-slab vapor cloud, it appears appropriate to undertake additional investigation and analysis.

Please be aware that the additional intent of this work is to collect sufficient additional data to either identify appropriate corrective actions at the site or to gather sufficient data to generate a health risk assessment that may support the general assessment of a low risk. Please also be aware that the DTSC states that all risk assessments and toxicological interpretations, conclusions, and recommendations be conducted by a professional with one of the following credentials:

- Certification as a Diplomat of the American Board of Toxicology, or
- Possession of a Master's Degree in Toxicology, Biochemistry, or Pharmacology, or a closely related specialty from an accredited college or university and three years of experience following the receipt of the Master's Degree in designing and managing toxicological studies, interpreting results, and conducting hazard and safety evaluations, or
- Possession of a Doctoral Degree in Toxicology, Biochemistry, or Pharmacology, or a closely related specialty from an accredited college or university and one years of experience following the receipt of the Master's Degree in designing and managing toxicological studies, interpreting results, and conducting hazard and safety evaluations.

Therefore, please submit a data gap work plan by the date identified below.

TECHNICAL REPORT REQUEST

Please upload technical reports to the ACEH ftp site (Attention: Mark Detterman), and to the State Water Resources Control Board's Geotracker website, in accordance with the specified file naming convention below, according to the following schedule:

- **January 9, 2015 –** Data Gap Work Plan
  File to be named: RO3134_WP_R_yyyy-mm-dd

These reports are being requested pursuant to California Health and Safety Code Section 25296.10. 23 CCR Sections 2652 through 2654, and 2721 through 2728 outline the responsibilities of a responsible party in response to an unauthorized release from a petroleum UST system, and require your compliance with this request.

Online case files are available for review at the following website: http://www.acgov.org/aceh/index.htm. If your email address does not appear on the cover page of this notification, ACEH is requesting you provide your email address so that we can correspond with you quickly and efficiently regarding your case.

If you have any questions, please call me at (510) 567-6876 or send me an electronic mail message at mark.detterman@acgov.org.

Sincerely,

Digitally signed by Mark E. Detterman
DN: cn=Mark E. Detterman, o, ou, email, c=US
Date: 2014.10.29 12:09:29 -07'00'

Mark E. Detterman, PG, CEG
Senior Hazardous Materials Specialist

Enclosures: Attachment 1 – Responsible Party (ies) Legal Requirements / Obligations
Electronic Report Upload (ftp) Instructions

cc: Debra Moser, Trinity Source Group, Inc, 119 Encinal Street, Santa Cruz, CA 95060 (sent via electronic mail to djm@tsgcorp.net)

Leroy Griffin, Oakland Fire Department 250 Frank H. Ogawa Plaza, Ste. 3341, Oakland, CA 94612-2032 (sent via electronic mail to lgriffin@oaklandnet.com)

Dilan Roe (sent via electronic mail to dilan.roe@acgov.org)
Mark Detterman (sent via electronic mail to mark.detterman@acgov.org)
Electronic File, GeoTracker

Attachment 1

Responsible Party(ies) Legal Requirements / Obligations

REPORT REQUESTS

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- **Please do not submit reports as attachments to electronic mail.**
- Entire report including cover letter must be submitted to the ftp site as **a single portable document format (PDF) with no password protection**.
- It is **preferable** that reports be converted to PDF format from their original format, (e.g., Microsoft Word) rather than scanned.
- **Signature pages and perjury statements must be included and have either original or electronic signature.**
- **Do not password protect the document**. Once indexed and inserted into the correct electronic case file, the document will be secured in compliance with the County's current security standards and a password. **Documents with password protection will not be accepted**.
- Each page in the PDF document should be rotated in the direction that will make it easiest to read on a computer monitor.
- Reports must be named and saved using the following naming convention:

  RO#_Report Name_Year-Month-Date (e.g., RO#5555_WorkPlan_2005-06-14)

Submission Instructions

1) Obtain User Name and Password
   a) Contact the Alameda County Environmental Health Department to obtain a User Name and Password to upload files to the ftp site.
      i) Send an e-mail to deh.loptoxic@acgov.org
   b) In the subject line of your request, be sure to include **"ftp PASSWORD REQUEST"** and in the body of your request, include the **Contact Information, Site Addresses**, and the **Case Numbers (RO# available in Geotracker) you will be posting for**.

2) Upload Files to the ftp Site
   a) Using Internet Explorer (IE4+), go to ftp://alcoftp1.acgov.org
      (i) Note: Netscape, Safari, and Firefox browsers will not open the FTP site as they are NOT being supported at this time.
   b) Click on Page located on the Command bar on upper right side of window, and then scroll down to Open FTP Site in Windows Explorer.
   c) Enter your User Name and Password. (Note: Both are Case Sensitive.)
   d) Open "My Computer" on your computer and navigate to the file(s) you wish to upload to the ftp site.
   e) With both "My Computer" and the ftp site open in separate windows, drag and drop the file(s) from "My Computer" to the ftp window.

3) Send E-mail Notifications to the Environmental Cleanup Oversight Programs
   a) Send email to deh.loptoxic@acgov.org notify us that you have placed a report on our ftp site.
   b) Copy your Caseworker on the e-mail. Your Caseworker's e-mail address is the entire first name then a period and entire last name @acgov.org. (e.g., firstname.lastname@acgov.org)
   c) The subject line of the e-mail must start with the RO# followed by **Report Upload**. (e.g., Subject: RO1234 Report Upload) If site is a new case without an RO#, use the street address instead.
   d) If your document meets the above requirements and you follow the submission instructions, you will receive a notification by email indicating that your document was successfully uploaded to the ftp site.

ATTACHMENT B

Soil and Grab-Groundwater Sampling Field Procedures

ATTACHMENT B

SOIL AND GRAB-GROUNDWATER SAMPLING

FIELD PROCEDURES

Prefield Tasks

Exploratory boreholes are permitted and installed in accordance with state and local guidelines using a subcontracted state licensed driller. Prior to drilling, standard boring clearance procedures are followed to minimize the potential for encountering structures in the subsurface. Standard borehole clearance procedures include: (1) marking boring locations at the site and visually identifying, where possible, existing utilities; (2) notifying Underground Service Alert (USA); (3) obtaining available facility blueprints; (4) reviewing boring locations with former site operators; and (5) performing field review of USA markings. Additional tasks include completing a site-specific health and safety plan and scheduling inspectors.

Hand-Auger Borings

Select boring locations will be advanced to approximately 5 feet below ground surface (bgs) using a hand-auger with a 3 inch diameter bucket. Bag samples will be collected approximately every 1-2 feet for photoionization ionization detector (PID) screening. Soil samples will be collected using clean stainless steel sleeves with a slide hammer. The onsite Trinity geologist will log the soils including a physical description of observed soil characteristics (i.e. moisture content, consistency, obvious odor, color, photoionization detector [PID] readings, etc.), drilling difficulty, and soil type as a function of depth, in accordance with the Unified Soil Classification System (USCS). And all hand-auger and sampling equipment will be decontaminated between bore holes.

After collecting soil samples, the exploratory boring is abandoned by, backfilling the hole with neat cement grout from the bottom to the top of the boring and finishing the surface to match the surrounding material of either asphalt or concrete. After collecting soil samples, the exploratory boring is abandoned by backfilling with neat cement grout from the bottom to the top of the boring and finished to match the surrounding material of unpaved soil, asphalt or concrete.

Exploratory Soil Borings

The boring is hand cleared to a depth of 5 feet bgs. The boring is drilled using Geoprobe® or similar direct-push drilling equipment. A precleaned sampler with a clear acetate liner and drive rods (typically two inches in diameter) is advanced for the purpose of collecting samples and evaluating subsurface conditions. The sampler is advanced in intervals of 3 to 4 feet, then the rods and sampler are retracted and the acetate liner removed from the sampler head for evaluation and sample collection by the onsite Trinity geologist. The sampler head is then cleaned, filled with a new acetate liner, inserted into the borehole, and advanced over the next sampling interval where the sample retrieval process is repeated.

After retrieval, each filled acetate liner is split open for examination of soils. The onsite Trinity geologist logs the soils including a physical description of observed soil characteristics (i.e. moisture content,

consistency, obvious odor, color, photoionization detector [PID] readings, etc.), drilling difficulty, and soil type as a function of depth, in accordance with the Unified Soil Classification System (USCS).

Soils collected at two-foot intervals are screened in the field for volatile organic compounds (VOCs) using a photoionization detector (PID). The PID screening is conducted by placing approximately 30 grams from an undisturbed soil sample into a clean plastic zip-lock bag. The bag is then placed in the ambient air for approximately 20 minutes, pierced, and the head space within the bag tested for total organic vapor measured in parts per million as benzene (ppm; volume/volume). The PID readings represent relative levels of organic vapors for the site conditions at the time of drilling. The PID readings are noted on the field logs.

In general, soil samples are preserved at changes in soil type, elevated PID readings or at a minimum of every 4 feet. Selected soil samples are collected using TerraCore sampling kits, properly labeled and then placed in an ice-filled cooler for transport to the laboratory under chain of custody documentation.

When static groundwater is reached, a grab-groundwater sample will be collected by use of temporary wells that consist of clean slotted PVC casing placed into the borehole. The temporary wells will be left undisturbed until sufficient water has recharged. The wells will then be purged and sampled using a peristaltic pump or clean, disposable bailers. The samples will be placed from the pump or bailer directly into laboratory-supplied containers appropriate for the desired analyses. The samples will be properly labeled and then placed in an ice-filled cooler for transport to the laboratory under chain-of-custody documentation.

After collecting soil and groundwater samples, the exploratory boring is abandoned by removing the PVC casing, backfilling the hole with neat cement grout from the bottom to the top of the boring and finishing the surface to match the surrounding material of either asphalt or concrete. After collecting soil samples, the exploratory boring is abandoned by backfilling with neat cement grout from the bottom to the top of the boring and finished to match the surrounding material of unpaved soil, asphalt or concrete.

STATE WATER RESOURCES CONTROL BOARD

GEOTRACKER ESI

UPLOADING A GEO_REPORT FILE

SUCCESS

Your GEO_REPORT file has been successfully submitted!

Submittal Type:	**GEO_REPORT**
Report Title:	**Data Gap Investigation Work Plan and Site Conceptual Model**
Report Type:	**Other Workplan**
Report Date:	**1/9/2015**
Facility Global ID:	**T0600100018**
Facility Name:	**ABF FREIGHT SYSTEMS**
File Name:	**154-ABF_Data Gap Invest. WP and SCM_Final 1.09.2015.pdf**
Organization Name:	**Trinity Source Group, Inc.**
Username:	**TRINITY SOURCE GROUP**
IP Address:	**63.249.96.11**
Submittal Date/Time:	**1/9/2015 1:13:30 PM**
Confirmation Number:	**1396552801**

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
ALEX BRISCOE, Agency Director

ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
FAX (510) 337-9335

February 24, 2015

Arkansas Bandag Corporation
PO Box 10048
Fort Smith AR 72917

Mr. Mike Rogers
ABF Freight Systems, Inc.
PO Box 10048
Fort Smith AR 72917
(sent via electronic mail to mrogers@arcb.com)

Subject: Modified Work Plan Approval; Fuel Leak Case No. RO0003033 and GeoTracker Global ID T0600100018, and Site Cleanup Program Case No. RO0003134 and GeoTracker Global ID T00000005825; ABF Freight Systems and ABF Freight Maintenance Shop, 4575 Tidewater Avenue, Oakland, CA 94601

Dear Mr. Rogers:

Alameda County Environmental Health (ACEH) staff has reviewed the case file for the above-referenced site, including the *Data Gap Investigation Work Plan and Focused Site Conceptual Model,* dated January 9, 2015, and prepared by the Trinity Source Group, Inc (Trinity). Thank you for submitting the work plan. The work plan was considered by Trinity to be an appropriate initial response to both the petroleum and chlorinated solvent cases at the subject site.

Based on ACEH staff review of the referenced documents and of the case file we generally concur with the recently proposed scope of work, provided that the modifications requested in the technical comments below are addressed and incorporated during the implementation, unless an alternate scope of work outside that described in the Work Plan and technical comments below is proposed. We request that you address the following technical comments, submit the requested document, and upon ACEH approval, perform the proposed work, and send us the technical reports requested below. Please provide 72-hour advance written notification to this office (e-mail preferred to: mark.detterman@acgov.org) prior to the start of field activities.

TECHNICAL COMMENTS

1. **Identification of Release Location(s) –** The referenced work plan proposes a video survey of the onsite sanitary sewer lines in an effort to determine potential release locations that may be associated with the onsite sanitary sewer. Providing that the sanitary sewer laterals beneath the building, and not the nearby underground storage tank (UST), is the potential source of the Light Non-Aqueous Phased Liquid (LNAPL) and the chlorinated solvents (PCE and TCE), this appears to be a reasonable approach.

   The work plan indicates that followup hand augered and/or direct push soil bores may potentially be installed, but at unspecified locations due to the uncertain location of potential sewer line breaks. ACEH is in general agreement with this approach; however, judges that soil bores will be required to define the extent of LNAPL downgradient of SB-4 (and likely towards the southwest). ACEH is also concerned that the installation of temporary soil bores may not suffice in determining if the LNAPL has been removed to the extent practicable. Additional actions, such as a recovery well, may be required. With the intent of shortening the investigation phase, ACEH requests the submittal of a data packet including the video survey results, any data, and

preliminary recommendations for additional actions in a step-wise, potentially iterative process, by the date identified below, prior to submitting a summary report for the investigation.

2. **Proposed Use of Silica Gel Cleanup –** In October 2014 the staff toxicologist for the San Francesco Bay Regional Water Quality Control Board (RWQCB) clarified the position of the RWQCB on the use of Silica Gel Cleanup (SGC) at sites and stated that when SGC is used duplicate samples must be submitted. Of significance for this site is the proximity of the estuary shoreline to the site. The RWQCB specifically emphasized the effect of SGC on the length of a groundwater plume, including degraded hydrocarbon (polar) products, and the toxicity to aquatic life posed by the degraded hydrocarbon (polar) products. In order to maintain consistency with the RWQCB, ACEH requests that duplicate soil and groundwater samples be submitted for samples in which SGC is requested to be analyzed for.

3. **Laboratory Analysis –** Please additionally include methyl-tert butyl either (MTBE) the suite; there is no added cost and analysis for the chemical is required by the Low Threat Closure Policy.

4. **Groundwater Monitoring –** Due to the length of time since groundwater was monitored (February 2014), ACEH requests that groundwater monitoring be resumed at the site. Please place the site in a semi-annual groundwater monitoring program with sampling in February (or earliest thereafter) and August of a year. Please include naphthalene and chlorinated solvents into the analytical suite. Please submit reports by the dates identified below.

TECHNICAL REPORT REQUEST

Please upload technical reports to the ACEH ftp site (Attention: Mark Detterman), and to the State Water Resources Control Board's Geotracker website, in accordance with the specified file naming convention below, according to the following schedule:

- **April 10, 2015 –** Data Packet and Recommendations (by email)
  File to be named: RO3033__R_yyyy-mm-dd
- **May 29, 2015 –** First Semiannual 2015 Groundwater Monitoring Report
  File to be named: RO3033_GWM_R_yyyy-mm-dd
- **June 12, 2013 –** Site Investigation (Tentative date)
  File to be named: RO3033_SWI_R_yyyy-mm-dd
- **October 23, 2015 –** Second Semiannual 2015 Groundwater Monitoring Report
  File to be named: RO3033_GWM_R_yyyy-mm-dd

These reports are being requested pursuant to California Health and Safety Code Section 25296.10. 23 CCR Sections 2652 through 2654, and 2721 through 2728 outline the responsibilities of a responsible party in response to an unauthorized release from a petroleum UST system, and require your compliance with this request.

If you have any questions, please call me at (510) 567-6876 or send me an electronic mail message at mark.detterman@acgov.org.

Sincerely,

Digitally signed by Mark E. Detterman
DN: cn=Mark E. Detterman, o, ou, email, c=US
Date: 2015.02.24 12:03:49 -08'00'

Mark E. Detterman, PG, CEG
Senior Hazardous Materials Specialist

Enclosures: Attachment 1 – Responsible Party (ies) Legal Requirements / Obligations
Electronic Report Upload (ftp) Instructions

cc: Debra Moser, Trinity Source Group, Inc, 500 Chestnut Street, Suite 225, Santa Cruz, CA 95060
(sent via electronic mail to djm@tsgcorp.net)

Dilan Roe, ACEH, (sent via electronic mail to dilan.roe@acgov.org)
Mark Detterman, ACEH, (sent via electronic mail to mark.detterman@acgov.org)
Electronic File, GeoTracker

Attachment 1

Responsible Party(ies) Legal Requirements / Obligations

REPORT REQUESTS

These reports are being requested pursuant to California Health and Safety Code Section 25296.10. 23 CCR Sections 2652 through 2654, and 2721 through 2728 outline the responsibilities of a responsible party in response to an unauthorized release from a petroleum UST system, and require your compliance with this request.

ELECTRONIC SUBMITTAL OF REPORTS

ACEH's Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of reports in electronic form. The electronic copy replaces paper copies and is expected to be used for all public information requests, regulatory review, and compliance/enforcement activities. Instructions for submission of electronic documents to the Alameda County Environmental Cleanup Oversight Program FTP site are provided on the attached "Electronic Report Upload Instructions." Submission of reports to the Alameda County FTP site is an addition to existing requirements for electronic submittal of information to the State Water Resources Control Board (SWRCB) GeoTracker website. In September 2004, the SWRCB adopted regulations that require electronic submittal of information for all groundwater cleanup programs. For several years, responsible parties for cleanup of leaks from underground storage tanks (USTs) have been required to submit groundwater analytical data, surveyed locations of monitoring wells, and other data to the GeoTracker database over the Internet. Beginning July 1, 2005, these same reporting requirements were added to Spills, Leaks, Investigations, and Cleanup (SLIC) sites. Beginning July 1, 2005, electronic submittal of a complete copy of all reports for all sites is required in GeoTracker (in PDF format). Please visit the SWRCB website for more information on these requirements (http://www.waterboards.ca.gov/water_issues/programs/ust/electronic_submittal/).

PERJURY STATEMENT

All work plans, technical reports, or technical documents submitted to ACEH must be accompanied by a cover letter from the responsible party that states, at a minimum, the following: "I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge." This letter must be signed by an officer or legally authorized representative of your company. Please include a cover letter satisfying these requirements with all future reports and technical documents submitted for this fuel leak case.

PROFESSIONAL CERTIFICATION & CONCLUSIONS/RECOMMENDATIONS

The California Business and Professions Code (Sections 6735, 6835, and 7835.1) requires that work plans and technical or implementation reports containing geologic or engineering evaluations and/or judgments be performed under the direction of an appropriately registered or certified professional. For your submittal to be considered a valid technical report, you are to present site specific data, data interpretations, and recommendations prepared by an appropriately licensed professional and include the professional registration stamp, signature, and statement of professional certification. Please ensure all that all technical reports submitted for this fuel leak case meet this requirement.

UNDERGROUND STORAGE TANK CLEANUP FUND

Please note that delays in investigation, later reports, or enforcement actions may result in your becoming ineligible to receive grant money from the state's Underground Storage Tank Cleanup Fund (Senate Bill 2004) to reimburse you for the cost of cleanup.

AGENCY OVERSIGHT

If it appears as though significant delays are occurring or reports are not submitted as requested, we will consider referring your case to the Regional Board or other appropriate agency, including the County District Attorney, for possible enforcement actions. California Health and Safety Code, Section 25299.76 authorizes enforcement including administrative action or monetary penalties of up to $10,000 per day for each day of violation.

Alameda County Environmental Cleanup Oversight Programs (LOP and SLIC)	**REVISION DATE:** May 15, 2014 **ISSUE DATE:** July 5, 2005 **PREVIOUS REVISIONS:** October 31, 2005; December 16, 2005; March 27, 2009; July 8, 2010, July 25, 2010
SECTION: Miscellaneous Administrative Topics & Procedures	**SUBJECT:** Electronic Report Upload (ftp) Instructions

The Alameda County Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of all reports in electronic form to the county's ftp site. Paper copies of reports will no longer be accepted. The electronic copy replaces the paper copy and will be used for all public information requests, regulatory review, and compliance/enforcement activities.

REQUIREMENTS

- **Please do not submit reports as attachments to electronic mail.**
- Entire report including cover letter must be submitted to the ftp site as **a single portable document format (PDF) with no password protection**.
- It is **preferable** that reports be converted to PDF format from their original format, (e.g., Microsoft Word) rather than scanned.
- **Signature pages and perjury statements must be included and have either original or electronic signature.**
- **Do not password protect the document**. Once indexed and inserted into the correct electronic case file, the document will be secured in compliance with the County's current security standards and a password. **Documents with password protection will not be accepted**.
- Each page in the PDF document should be rotated in the direction that will make it easiest to read on a computer monitor.
- Reports must be named and saved using the following naming convention:

  RO#_Report Name_Year-Month-Date (e.g., RO#5555_WorkPlan_2005-06-14)

Submission Instructions

1) Obtain User Name and Password
   a) Contact the Alameda County Environmental Health Department to obtain a User Name and Password to upload files to the ftp site.
      i) Send an e-mail to deh.loptoxic@acgov.org
   b) In the subject line of your request, be sure to include **"ftp PASSWORD REQUEST"** and in the body of your request, include the **Contact Information, Site Addresses**, and the **Case Numbers (RO# available in Geotracker) you will be posting for**.

2) Upload Files to the ftp Site
   a) Using Internet Explorer (IE4+), go to ftp://alcoftp1.acgov.org
      (i) Note: Netscape, Safari, and Firefox browsers will not open the FTP site as they are NOT being supported at this time.
   b) Click on Page located on the Command bar on upper right side of window, and then scroll down to Open FTP Site in Windows Explorer.
   c) Enter your User Name and Password. (Note: Both are Case Sensitive.)
   d) Open "My Computer" on your computer and navigate to the file(s) you wish to upload to the ftp site.
   e) With both "My Computer" and the ftp site open in separate windows, drag and drop the file(s) from "My Computer" to the ftp window.

3) Send E-mail Notifications to the Environmental Cleanup Oversight Programs
   a) Send email to deh.loptoxic@acgov.org notify us that you have placed a report on our ftp site.
   b) Copy your Caseworker on the e-mail. Your Caseworker's e-mail address is the entire first name then a period and entire last name @acgov.org. (e.g., firstname.lastname@acgov.org)
   c) The subject line of the e-mail must start with the RO# followed by **Report Upload**. (e.g., Subject: RO1234 Report Upload) If site is a new case without an RO#, use the street address instead.
   d) If your document meets the above requirements and you follow the submission instructions, you will receive a notification by email indicating that your document was successfully uploaded to the ftp site.

Debra Moser

From: Detterman, Mark, Env. Health
Sent: Wednesday, July 01, 2015 11:54 AM
To: 'Debra Moser'
Cc: Mike Rogers; Eric Choi; Roe, Dilan, Env. Health
Subject: RE: ABF Freight, 4575 Tidewater, Oakland - update
Attachments: Updated Figure_6 30 2015.pdf

Arkansas Bandag Corporation
PO Box 10048
Fort Smith AR 72917

Mr. Mike Rogers
ABF Freight Systems, Inc.
PO Box 10048
Fort Smith AR 72917
(sent via electronic mail to mkrogers@arkbest.com)

Subject: Modified Work Plan Addendum Approval; Fuel Leak Case No. RO0003033 and GeoTracker Global ID T0600100018, ABF Freight Systems, 4575 Tidewater Avenue, Oakland, CA 94601

Dear Mr. Rogers:

Alameda County Environmental Health (ACEH) staff has reviewed the case file for the above-referenced site, including the attached "work plan addendum" (below). The work plan addendum was prepared by the Trinity Source Group, Inc (Trinity), and was based on the preliminary results of previously proposed work (also attached below). Thank you for providing the initial results of recent work and including recommended additional actions in an effort to move the site towards closure.

Based on ACEH staff review of the referenced documents and of the case file we generally concur with the recently proposed scope of work, provided that the modifications requested in the technical comments below are addressed and incorporated during the field implementation. Submittal of a revised work plan or a work plan addendum is not required unless an alternate scope of work outside that described in the work plan or technical comments below is proposed. We request that you address the following technical comments, submit the requested document, and upon ACEH approval, perform the proposed work, and send us the technical reports requested below. Please provide 72-hour advance written notification to this office (e-mail preferred to: mark.detterman@acgov.org) prior to the start of field activities.

TECHNICAL COMMENTS

1. **Work Plan Addendum Approval –** ACEH is in general agreement with the proposed scope of work that will install two soil bores to the southwest of soil ore SB-4 in an attempt to define the lateral extent of Light Non-Aqueous Phased Liquids (LNAPL) and an associated dissolved-phase groundwater plume. As discussed on the telephone today with Ms. Debbie Moser, the best manner to proceed with recovery of LNAPL, to the extent practicable, will be determined based on the results of the proposed soil bores.

   ACEH requests that soil and grab groundwater samples be collected and analyzed for the constituents of concern at the site (TPHg, TPHd, BTEX, MTBE, naphthalene, and chlorinated volatile organic compounds [HVOCs]), provided no LNAPL is encountered in the bores. Please ensure soil is collected in the 0 to 5 and the 5 to 10 foot depth zones in accordance with the Low Threat Closure Policy (LTCP), at indications of contamination (odor, discoloration, PID readings, etc), and at the groundwater interface. Please ensure that the vertical extent of soil contamination is defined as well, also in accordance with the LTCP. These are requested in order for this phase of the investigation to remain consistent with procedures previously requested at the site, and that the scope of work remains consistent with standard protocols previously proposed for work at the site.

2. **Contingency Soil Bores –** In the event LNAPL is encountered in the proposed soil bores, ACEH requests additional contingency soil bores be installed as judged appropriate in the field in order to achieve delineation of LNAPL and dissolved-phased contamination. This may require installation of additional bores around SB-4 to the southwest, southeast, or east.

TECHNICAL REPORT REQUEST

Please upload technical reports to the ACEH ftp site (Attention: Mark Detterman), and to the State Water Resources Control Board's Geotracker website, in accordance with the specified file naming convention below, according to the following schedule:

- **September 11, 2015 –** Site Investigation
  File to be named: RO3033_SWI_R_yyyy-mm-dd

These reports are being requested pursuant to California Health and Safety Code Section 25296.10. 23 CCR Sections 2652 through 2654, and 2721 through 2728 outline the responsibilities of a responsible party in response to an unauthorized release from a petroleum UST system, and require your compliance with this request.

Online case files are available for review at the following website: http://www.acgov.org/aceh/index.htm. If your email address does not appear on the cover page of this notification, ACEH is requesting you provide your email address so that we can correspond with you quickly and efficiently regarding your case.

If you have any questions, please call me at (510) 567-6876 or send me an electronic mail message at mark.detterman@acgov.org.

Sincerely,

Mark Detterman
Senior Hazardous Materials Specialist, PG, CEG
Alameda County Environmental Health
1131 Harbor Bay Parkway
Alameda, CA 94502
Direct: 510.567.6876
Fax: 510.337.9335
Email: mark.detterman@acgov.org

PDF copies of case files can be downloaded at:

http://www.acgov.org/aceh/lop/ust.htm

From: Debra Moser [mailto:djm@tsgcorp.net]
Sent: Tuesday, June 30, 2015 7:47 PM
To: Detterman, Mark, Env. Health
Cc: Mike Rogers; Eric Choi
Subject: Re: ABF Freight, 4575 Tidewater, Oakland - update

And here is the figure!

On Tue, Jun 30, 2015 at 3:24 PM, Debra Moser <djm@tsgcorp.net> wrote:

Hi Mark,

We completed the vacuuming and jetting of the sewer lines at the ABF Oakland maintenance building on June 16, 2015; this is the informal data submittal. In summary, the line clearing went reasonably well, but the video

camera could not negotiate double-bends between the floor drains and the sewer lines. Therefore, unfortunately we do not have a video survey of the sewers.

Here are details from the floor drain/sewer line clearout/vac and video activities:

On June 16, 2015, Trinity Source Group, Inc. (Trinity) mobilized to the ABF Freight Facility located at 4575 Tidewater Dr. in Oakland, California to assess the floor drain/sewer lines located in the maintenance building located in northwestern portion of the ABF Facility. The assessment of the floor drains/sewer lines was to determine whether or not the floor drains/sewer lines are a potential source of the LNAPL observed in earlier environmental fieldwork (Soil Boring SB-4 was the boring location where LNAPL was observed). IWM was sub-contracted to hydro jet and apply high vacuum on the lines to dislodge/remove/clear the drain/sewer lines for video surveying of the lines. Upon site arrival, standing oily water was observed in the most western floor drain, the most southern floor drain was dry with misc. debris, and the floor drain near soil boring SB-5 had oily debris in it and also was missing the floor drain guard. All three drain locations were vacuumed to remove large debris, the debris consisted of screws, nuts, bolts, oily rags, and misc. trash debris. Hydro jetting followed the vacuum, using a hydro jet tool and also water was introduced to the lines to help break up buildup and to dislodge obstructions. A combination of vacuuming, hydro jetting, and adding water was used to clear all the accessible lines, till no standing water was observed in the lines, and till the influence of the vacuum was observable in all three drain inlets with the application of vacuum to a line. Approximately 20 feet of line from each drain inlet was hydrojetted, except for the most western drain, as the hydro jetting tool couldn't make the bend into the main line.

The attached figure shows the lines that were cleared, and the locations of the floor drains used to access these lines.

Approximately 400 gallons of non-hazardous water was generated from the vacuum activities, and was properly disposed of at Seaport Refining and Environmental located in Redwood City, California. Westcoast Locators were sub-contracted to perform the video survey of the cleared drain/sewer lines. Westcoast Locators technician was not able to video survey the lines due to video equipment accessibility issues. Due to the design of the floor drain/sewer lines (two 90-degree bends just below the floor drain), the video survey equipment couldn't reach the main line to perform the video survey.

Based on the work completed so far, Trinity proposes installing two additional soil borings in close proximity to existing sewers west and southwest of SB-4 to delineate the potential LNAPL area as requested by the Alameda County Environmental Health. The proposed boring locations are shown on the attached figure.

Please let us know any if you need additional information, and we will schedule the borings after you approve the locations.

Thank you,

Debbie

Debra J. Moser, PG, CEG, CHG

Senior Geologist

Trinity Source Group, Inc.

119 Encinal Street

Santa Cruz, CA 95060

We have moved!
Please note our new address.

Tel: (831) 426-5600

Fax: (831) 426-5602

Visit our website at: www.trinitysourcegroup.com

--
Debra J. Moser, PG, CEG, CHG

Senior Geologist

500 Chestnut Street, Suite 225
Santa Cruz, CA 95060

Tel: (831) 426-5600
Fax: (831) 426-5602

Visit our website at: www.trinitysourcegroup.com

ATTACHMENT B

ACPWA Water Resources Well Permit

Alameda County Public Works Agency - Water Resources Well Permit

Public Works Agency
Alameda County

399 Elmhurst Street
Hayward, CA 94544-1395
Telephone: (510)670-6633 Fax:(510)782-1939

Application Approved on: 08/25/2015 By jamesy

Permit Numbers: W2015-0802
Permits Valid from 08/27/2015 to 08/27/2015

Application Id:	1440175542654	**City of Project Site:**	Oakland
Site Location:	4575 Tidewater Ave Oakland, CA-ABF Frieght Facility		
Project Start Date:	08/27/2015	**Completion Date:**	08/27/2015
Assigned Inspector:	Contact Steve Miller at (510) 670-5517 or stevem@acpwa.org		
Applicant:	Trinity Source Group, Inc. - Eric Choi 119 Encinal St., Santa Cruz, CA 95060	**Phone:**	831-426-5600
Property Owner:	Mike Rodgers PO Box 10048, Fort Smith, AR 72917	**Phone:**	--
Client:	** same as Property Owner **		
Contact:	Eric Choi	**Phone:** **Cell:**	831-426-5600 831-227-0949

	Total Due:	$265.00
Receipt Number: WR2015-0421	**Total Amount Paid:**	$265.00
Payer Name : Eric Choi	Paid By: VISA	**PAID IN FULL**

Works Requesting Permits:

Borehole(s) for Geo Probes-Sampling 24 to 72 hours only - 4 Boreholes
Driller: Environmental Control Associates, Inc. - Lic #: 695970 - Method: DP **Work Total: $265.00**

Specifications

Permit Number	Issued Dt	Expire Dt	# Boreholes	Hole Diam	Max Depth
W2015-0802	08/25/2015	11/25/2015	4	2.25 in.	20.00 ft

Specific Work Permit Conditions

1. Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings. All cuttings remaining or unused shall be containerized and hauled off site. The containers shall be clearly labeled to the ownership of the container and labeled hazardous or non-hazardous.

2. Boreholes shall not be left open for a period of more than 24 hours. All boreholes left open more than 24 hours will need approval from Alameda County Public Works Agency, Water Resources Section. All boreholes shall be backfilled according to permit destruction requirements and all concrete material and asphalt material shall be to Caltrans Spec or County/City Codes. No borehole(s) shall be left in a manner to act as a conduit at any time.

3. Permittee shall assume entire responsibility for all activities and uses under this permit and shall indemnify, defend and save the Alameda County Public Works Agency, its officers, agents, and employees free and harmless from any and all expense, cost, liability in connection with or resulting from the exercise of this Permit including, but not limited to, properly damage, personal injury and wrongful death.

4. Applicant shall contact assigned inspector listed on the top of the permit at least five (5) working days prior to starting, once the permit has been approved. Confirm the scheduled date(s) at least 24 hours prior to drilling.

5. Permittee, permittee's contractors, consultants or agents shall be responsible to assure that all material or waters generated during drilling, boring destruction, and/or other activities associated with this Permit will be safely handled, properly managed, and disposed of according to all applicable federal, state, and local statutes regulating such. In no

case shall these materials and/or waters be allowed to enter, or potentially enter, on or off-site storm sewers, dry wells, or waterways or be allowed to move off the property where work is being completed.

6. Copy of approved drilling permit must be on site at all times. Failure to present or show proof of the approved permit application on site shall result in a fine of $500.00.

7. NOTE:
Under California laws, the owner/operator are responsible for reporting the contamination to the governmental regulatory agencies under Section 25295(a). The owner/operator is liable for civil penalties under Section 25299(a)(4) and criminal penalties under Section 25299(d) for failure to report a leak. The owner/operator is liable for civil penalties under Section 25299(b)(4) for knowing failure to ensure compliance with the law by the operator. These penalty provisions do not apply to a potential buyer.

8. Prior to any drilling activities onto any public right-of-ways, it shall be the applicants responsibilities to contact and coordinate a Underground Service Alert (USA), obtain encroachment permit(s), excavation permit(s) or any other permits required for that City or to the County and follow all City or County Ordinances. It shall also be the applicants responsibilities to provide to the Cities or to Alameda County a Traffic Safety Plan for any lane closures or detours planned. No work shall begin until all the permits and requirements have been approved or obtained.

9. Permit is valid only for the purpose specified herein. No changes in construction procedures, as described on this permit application. Boreholes shall not be converted to monitoring wells, without a permit application process.

ATTACHMENT C

Soil and Grab-Groundwater Sampling Field Procedures

ATTACHMENT C

SOIL AND GRAB-GROUNDWATER SAMPLING

FIELD PROCEDURES

Prefield Tasks

Exploratory boreholes are permitted and installed in accordance with state and local guidelines using a subcontracted state licensed driller. Prior to drilling, standard boring clearance procedures are followed to minimize the potential for encountering structures in the subsurface. Standard borehole clearance procedures include: (1) marking boring locations at the site and visually identifying, where possible, existing utilities; (2) notifying Underground Service Alert (USA); (3) obtaining available facility blueprints; (4) reviewing boring locations with former site operators; and (5) performing field review of USA markings.). Additional tasks include completing a site-specific health and safety plan and scheduling inspectors.

Exploratory Soil Borings

The boring is drilled using Geoprobe® or similar direct-push drilling equipment. A precleaned sampler with a clear acetate liner and drive rods (typically two inches in diameter) is advanced for the purpose of collecting samples and evaluating subsurface conditions. The sampler is advanced in intervals of 3 to 4 feet, then the rods and sampler are retracted and the acetate liner removed from the sampler head for evaluation and sample collection by the onsite Trinity geologist. The sampler head is then cleaned, filled with a new acetate liner, inserted into the borehole, and advanced over the next sampling interval where the sample retrieval process is repeated.

After retrieval, each filled acetate liner is split open for examination of soils. The onsite Trinity geologist logs the soils including a physical description of observed soil characteristics (i.e. moisture content, consistency, obvious odor, color, photoionization detector [PID] readings, etc.), drilling difficulty, and soil type as a function of depth, in accordance with the Unified Soil Classification System (USCS).

Soils collected at two-foot intervals are screened in the field for volatile organic compounds (VOCs) using a photoionization detector (PID). The PID screening is conducted by placing approximately 30 grams from an undisturbed soil sample into a clean plastic zip-lock bag. The bag is then placed in the ambient air for approximately 20 minutes, pierced, and the head space within the bag tested for total organic vapor measured in parts per million as benzene (ppm; volume/volume). The PID readings represent relative levels of organic vapors for the site conditions at the time of drilling. The PID readings are noted on the field logs.

In general, soil samples are preserved at changes in soil type, elevated PID readings or at a minimum of every 4 feet. Selected soil samples are retained in the acetate liners, and capped with Teflon sheeting and plastic end caps, properly labeled and then placed in an ice-filled cooler for transport to the laboratory under chain of custody documentation.

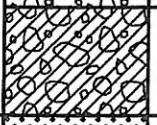
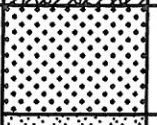
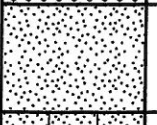
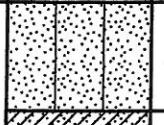
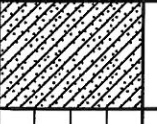
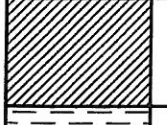
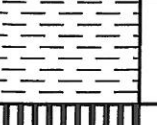
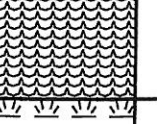
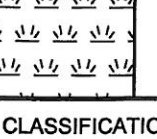
When static groundwater is reached, a grab-groundwater sample is collected by use of temporary wells that consist of clean slotted PVC casing placed into the borehole. The temporary wells are left undisturbed until sufficient water has recharged. The wells are then purged and sampled using a peristaltic pump, check valve pump, or clean, disposable bailers. The samples are placed from the pump or bailer directly into laboratory-supplied containers appropriate for the desired analyses. The samples are properly labeled and then placed in an ice-filled cooler for transport to the laboratory under chain-of-custody documentation.

After collecting soil and groundwater samples, the exploratory boring is abandoned by removing the PVC casing, backfilling the hole with neat cement grout from the bottom to the top of the boring and finishing the surface to match the surrounding material of either asphalt or concrete. After collecting soil samples, the exploratory boring is abandoned by backfilling with neat cement grout from the bottom to the top of the boring and finished to match the surrounding material of unpaved soil, asphalt or concrete.

ATTACHMENT D

Boring Logs

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS		TYPICAL DESCRIPTIONS
			GRAPH	LETTER	
COARSE GRAINED SOILS MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

Trinity Source Group
119 Encinal Street
Santa Cruz, CA 95060
Telephone: 831.426.5600
Fax: 831.426.5602

BORING NUMBER SB-7

CLIENT ABF Freight System, Inc.
PROJECT NAME LNAPL Delineation Investigation
PROJECT NUMBER 154.009.004
PROJECT LOCATION 4575 Tidewater Avenue
DATE STARTED 8/27/15 **COMPLETED** 8/27/15
GROUND ELEVATION **HOLE SIZE** 2.25"
DRILLING CONTRACTOR ECA
GROUND WATER LEVELS:
DRILLING METHOD Geoprobe
AT TIME OF DRILLING 7.0'
LOGGED BY S. Davis **CHECKED BY** D. Moser
AT END OF DRILLING 5.72'
NOTES
AFTER DRILLING 5.80'

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0.0			1		0-6" CONCRETE	
					0.5	
					6" FILL SAND (FILL) Dark Yellowish Brown (10 YR, 3/6), Moist, Loose, No Odor, Trace Fines	
	SB-7 1.0' 9:30				1.0	
					1' CLAYEY SAND (SC) Black (GLEY 1, 2.5/N), Moist, Loose, Medium-Grained Sand, Trace Fine to 1/2" Angular Gravels, No Odor	
	AU		1		1.5' SAND WITH CLAY (SP-SC) Dark Yellowish Brown (10 YR, 3/6), Moist, Loose, Medium-Grained Sand, Subrounded Wood Fragments Up To 1.5", No Odor	
2.5					2.5	
					2.5' CLAYEY SAND (SC) Black (GLEY 1, 2.5/N), Moist, Loose, Medium To Coarse-Grained Sand, Trace Fine To 1/2" Gravels	
	SB-7 3.0' 9:50				3.0	
					3.0' SAND (SP) Black (GLEY 1, 2.5/N), Moist, Loose, Medium-Grained Sand, Trace Wood Fragments Up To 1/2", Slight Organic Odor	
			1		3.5	
					3.5' CLAYEY SAND (SC) Black (GLEY 1, 2.5/N), Moist, Loose, Medium To Coarse-Grained Sand, Trace Fine To 1/2" Gravels	
					4.0	
					4.0' SAND (SP) Black (GLEY 1, 2.5/N), Moist, Loose, Medium-Grained Sand, Trace Wood Fragments Up To 1/2", Slight Organic Odor	
5.0					4.5	
	DP				4.5' SILTY SAND (SM) Black (GLEY 1, 2.5/N), Moist, Medium Density, Fine-Grained Sand, Trace Wood Fibers, No Odor	0-11.0' Backfilled With Neat Cement Grout
			1		6.0	
					6.0' SAND (SP) Dark Greenish Grey (GLEY 1, 4/1), Loose, Medium-Grained Sand, Trace Fines, No Odor	
					6.5	
					6.5' CLAY (CL) Dark Greenish Grey (GLEY 1, 4/1), Moist, Medium Stiff, ~2" Thick Very Fine Sand/Silt Lens At 6.75'	
	SB-7 7.0' 12:40				7.0	
7.5					7.5	
					7.0' SILTY SAND (SM) Dark Grey (GLEY 1, 2.5/1), Wet, Soft, Fine-Grained Sand, No Odor	
			1		7.5' SAND (SP) Greyish Brown (2.5 YR, 3/2), Wet, Soft, Fine To Medium-Grained Sand, No Odor	
					9.0' SAME AS ABOVE	
	DP					
	SB-7 9.0' 12:45					
10.0						
			1		10.0' SAME AS ABOVE Color Change To Brown (10 YR, 4/6)	
					10.5' SAME AS ABOVE	
	SB-7 10.5' 12:50				11.0	
					Bottom of hole at 11.0 feet.	

ENVIRONMENTAL BH 154.009.004.GPJ LINE ANGLE TEMPLATE.GDT 9/22/15

Trinity Source Group
119 Encinal Street
Santa Cruz, CA 95060
Telephone: 831.426.5600
Fax: 831.426.5602

BORING NUMBER SB-8

CLIENT ABF Freight System, Inc.
PROJECT NAME LNAPL Delineation Investigation
PROJECT NUMBER 154.009.004
PROJECT LOCATION 4575 Tidewater Avenue
DATE STARTED 8/27/15 **COMPLETED** 8/27/15
GROUND ELEVATION **HOLE SIZE** 2.25"
DRILLING CONTRACTOR ECA
GROUND WATER LEVELS:
DRILLING METHOD Geoprobe
AT TIME OF DRILLING 6.0'
LOGGED BY S. Davis **CHECKED BY** D. Moser
AT END OF DRILLING 6.1'
NOTES
AFTER DRILLING 6.1'

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0.0			0		0-6" CONCRETE	
0.5					6" FILL SAND (FILL) Dark Yellowish Brown (10 YR, 3/6), Moist, Loose, Trace Fines, No Odor	
1.0	SB-8 1.0' 13:10				1.0' CLAYEY SAND (SC) Black (GLEY 1, 2.5/N), Moist, Loose, Medium-Grained Sand With Trace Fine To 1/2" Angular Gravels, No Odor	
	AU		1		2.0' SAME AS ABOVE 1/2" Lens Of Clay	
2.5					2.5' CLAY (CL) Black (5Y, 2.5/2), Moist, Stiff, No Odor	
3.0	SB-8 3.0' 13:15				3.0' CLAYEY SAND (SC) Black (5Y, 2.5/2), Moist, Dense, Fine To Medium-Grained Sand, Trace Coarse Sand, No Odor	
			4		4.0' SAME AS ABOVE	
4.5					4.5' SAND (SP) Very Dark Grey (5Y, 3/1), Moist, Loose, Medium To Coarse-Grained Sand, No Odor	
5.0	DP				5.0' CLAYEY SAND (SC) Very Dark Grey (5Y, 3/2), Moist, Medium Dense, Fine To Medium-Grained Sand, No Odor	◄0-10.0' Backfilled With Neat Cement Grout
	SB-8 5.0' 13:20					
6.0	SB-8 6.0' 12:55		4		6.0' CLAYEY SAND (SC) Black (5Y, 2.5/1), Wet, Medium Dense, Medium-Grained Sand, No Odor	
					7.0' SAME AS ABOVE	
7.5					7.5' CLAY (CL) Very Dark Grey (5Y, 3/1), Moist, No Odor	
	DP		4		8.5' SAME AS ABOVE	
9.5					9.5' SAND (SP) Very Dark Grey (5Y, 3/1), Moist, Medium To Coarse-Grained Sand, No Odor	
10.0			4		Bottom of hole at 10.0 feet.	

ATTACHMENT E

Investigation-Derived Waste Disposal Documentation

IWM, Inc.

INTEGRATED WASTESTREAM MANAGEMENT, INC.
1945 CONCOURSE DRIVE, SAN JOSE, CA 95131
PHONE: 408.433.1990 FAX: 408.433.9521

CERTIFICATE OF DISPOSAL

Generator Name:	ABF Freight Facility	Facility Name:	ABF Freight Facility
Address:	4575 Tidewater Avenue	Address:	4575 Tidewater Avenue
	Oakland, CA 94601		Oakland, CA 94601
Contact:	Eric Choi	Facility Contact:	Eric Choi
Phone:	831-426-5600	Phone:	831-227-0949

IWM Job #:	Bella 553
Description of Waste:	400 Gallons of Non-Hazardous Water
Removal Date:	6-16-15
Ticket #:	SP06162015-MISC

Transporter Information

Name:	IWM, Inc.
Address:	1945 Concourse Drive
	San Jose, CA 95131
Phone:	(408) 433-1990

Disposal Facility Information

Name:	Seaport Refining & Environmental
Address:	700 Seaport Blvd
	Redwood City, CA 94063
Phone:	(650) 364-1024

IWM, INC. CERTIFIES THAT THE ABOVE LISTED NON-HAZARDOUS WASTE WILL BE TREATED AND DISPOSED AT THE DESIGNATED FACILITY IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS.

William T. DeLon William T. DeLon — 6-16-15

Authorized Representative (Print Name and Signature) — Date

ATTACHMENT F

Certified Laboratory Report, Chain-of-Custody Documentation, and GeoTracker Upload Documentation

ANALYTICAL REPORT

September 22, 2015

Trinity Source Group - Santa Cruz, CA

Sample Delivery Group:	L786006
Samples Received:	08/29/2015
Project Number:	154.009.004
Description:	ABF Freight - 154

Report To: David Reinsma
119 Encinal Street
Santa Cruz, CA 95060

Entire Report Reviewed By:

Jarred Willis
Technical Service Representative

SB-7 3.0FT L786006-01 Solid

Collected by: Spencer Davis
Collected date/time: 08/27/15 09:50
Received date/time: 08/29/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Semi-Volatile Organic Compounds (GC) by Method 8015	WG812600	10	08/31/15 21:51	09/01/15 10:46	BJF
Total Solids by Method 2540 G-2011	WG812816	1	09/01/15 14:00	09/02/15 07:50	KDW
Volatile Organic Compounds (GC/MS) by Method 8260B	WG813538	5	09/04/15 13:01	09/07/15 02:42	KLO
Volatile Organic Compounds (GC/MS) by Method 8260B	WG813842	5	09/10/15 09:17	09/10/15 09:21	MCB

SB-7 5.5FT L786006-02 Solid

Collected by: Spencer Davis
Collected date/time: 08/27/15 12:30
Received date/time: 08/29/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Semi-Volatile Organic Compounds (GC) by Method 8015	WG812600	1	08/31/15 21:51	09/01/15 02:53	BJF
Total Solids by Method 2540 G-2011	WG812816	1	09/01/15 14:00	09/02/15 07:51	KDW
Volatile Organic Compounds (GC/MS) by Method 8260B	WG813538	5	09/04/15 13:01	09/07/15 13:55	KLO
Volatile Organic Compounds (GC/MS) by Method 8260B	WG813842	5	09/10/15 09:17	09/10/15 09:41	MCB

SB-7 10.5FT L786006-03 Solid

Collected by: Spencer Davis
Collected date/time: 08/27/15 12:50
Received date/time: 08/29/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Semi-Volatile Organic Compounds (GC) by Method 8015	WG812600	1	08/31/15 21:51	09/01/15 03:18	BJF
Total Solids by Method 2540 G-2011	WG812816	1	09/01/15 14:00	09/02/15 07:51	KDW
Volatile Organic Compounds (GC/MS) by Method 8260B	WG813538	5	09/04/15 13:01	09/07/15 14:19	KLO
Volatile Organic Compounds (GC/MS) by Method 8260B	WG813842	5	09/10/15 09:17	09/10/15 10:01	MCB

SB-8 6.0FT L786006-04 Solid

Collected by: Spencer Davis
Collected date/time: 08/27/15 12:55
Received date/time: 08/29/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Semi-Volatile Organic Compounds (GC) by Method 8015	WG812600	1	08/31/15 21:51	09/01/15 03:42	BJF
Total Solids by Method 2540 G-2011	WG812816	1	09/01/15 14:00	09/02/15 07:51	KDW
Volatile Organic Compounds (GC/MS) by Method 8260B	WG813538	5	09/04/15 13:01	09/07/15 14:43	KLO
Volatile Organic Compounds (GC/MS) by Method 8260B	WG813842	5	09/10/15 09:17	09/10/15 10:21	MCB

SB-8 3.0FT L786006-05 Solid

Collected by: Spencer Davis
Collected date/time: 08/27/15 13:15
Received date/time: 08/29/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Semi-Volatile Organic Compounds (GC) by Method 8015	WG812600	5	08/31/15 21:51	09/01/15 10:21	BJF
Total Solids by Method 2540 G-2011	WG812816	1	09/01/15 14:00	09/02/15 07:52	KDW
Volatile Organic Compounds (GC/MS) by Method 8260B	WG813538	5	09/04/15 13:01	09/07/15 15:07	KLO
Volatile Organic Compounds (GC/MS) by Method 8260B	WG813842	5	09/10/15 09:17	09/10/15 10:41	MCB

SB-8 9.5FT L786006-06 Solid

Collected by: Spencer Davis
Collected date/time: 08/27/15 13:40
Received date/time: 08/29/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Semi-Volatile Organic Compounds (GC) by Method 8015	WG812600	1	08/31/15 21:51	09/01/15 04:07	BJF
Total Solids by Method 2540 G-2011	WG812816	1	09/01/15 14:00	09/02/15 07:52	KDW
Volatile Organic Compounds (GC/MS) by Method 8260B	WG813538	5	09/04/15 13:01	09/07/15 15:31	KLO
Volatile Organic Compounds (GC/MS) by Method 8260B	WG813842	5	09/10/15 09:17	09/10/15 13:23	MCB

SB-7-GW L786006-07 GW

Collected by: Spencer Davis
Collected date/time: 08/27/15 10:45
Received date/time: 08/29/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Semi-Volatile Organic Compounds (GC) by Method 3511/8015	WG813116	1	09/02/15 18:15	09/03/15 17:23	JNS
Semi-Volatile Organic Compounds (GC) by Method 3511/8015	WG813116	1	09/02/15 18:15	09/19/15 05:27	JNS
Volatile Organic Compounds (GC/MS) by Method 8260B	WG813362	1	09/04/15 07:03	09/04/15 07:03	MCB

SB-8-GW L786006-08 GW

Collected by: Spencer Davis
Collected date/time: 08/27/15 11:28
Received date/time: 08/29/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Semi-Volatile Organic Compounds (GC) by Method 3511/8015	WG813116	1	09/02/15 18:15	09/03/15 21:15	JNS
Semi-Volatile Organic Compounds (GC) by Method 3511/8015	WG813116	1	09/02/15 18:15	09/19/15 05:45	JNS
Volatile Organic Compounds (GC/MS) by Method 8260B	WG813362	1	09/04/15 11:59	09/04/15 11:59	MCB

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Jarred Willis
Technical Service Representative

Project Narrative

The C22-C32 and C32-C40 TPH ranges do not have any associated QC due to the fact that these ranges were added after the initial extraction and analysis was complete per client request. The original analytical sequence was re-evaluated to report the additional ranges however these ranges are not evaluated by an extended range verification that is typically performed per the ESC SOP.

The estimated values (hits below the RDL) reported for the extended range organics on the water samples are directly impacted/biased by septa contamination. These results should be used with caution.

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	86.4		1	09/02/2015 07:50	WG812816

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	MDL	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
TPH (GC/MS) Low Fraction	U		0.915	2.89	5	09/07/2015 02:42	WG813538
Acetone	U		0.0500	0.289	5	09/10/2015 09:21	WG813842
Acrylonitrile	U		0.00895	0.0579	5	09/10/2015 09:21	WG813842
Benzene	U		0.00135	0.00579	5	09/10/2015 09:21	WG813842
Bromobenzene	U		0.00142	0.00579	5	09/10/2015 09:21	WG813842
Bromodichloromethane	U		0.00127	0.00579	5	09/10/2015 09:21	WG813842
Bromoform	U		0.00212	0.00579	5	09/10/2015 09:21	WG813842
Bromomethane	U		0.00670	0.0289	5	09/10/2015 09:21	WG813842
n-Butylbenzene	U		0.00129	0.00579	5	09/10/2015 09:21	WG813842
sec-Butylbenzene	U		0.00100	0.00579	5	09/10/2015 09:21	WG813842
tert-Butylbenzene	U		0.00103	0.00579	5	09/10/2015 09:21	WG813842
Carbon tetrachloride	U		0.00164	0.00579	5	09/10/2015 09:21	WG813842
Chlorobenzene	U		0.00106	0.00579	5	09/10/2015 09:21	WG813842
Chlorodibromomethane	U		0.00186	0.00579	5	09/10/2015 09:21	WG813842
Chloroethane	U		0.00473	0.0289	5	09/10/2015 09:21	WG813842
2-Chloroethyl vinyl ether	U		0.0117	0.289	5	09/10/2015 09:21	WG813842
Chloroform	U		0.00114	0.0289	5	09/10/2015 09:21	WG813842
Chloromethane	U		0.00188	0.0145	5	09/10/2015 09:21	WG813842
2-Chlorotoluene	U		0.00150	0.00579	5	09/10/2015 09:21	WG813842
4-Chlorotoluene	U		0.00120	0.00579	5	09/10/2015 09:21	WG813842
1,2-Dibromo-3-Chloropropane	U		0.00525	0.0289	5	09/10/2015 09:21	WG813842
1,2-Dibromoethane	U		0.00172	0.00579	5	09/10/2015 09:21	WG813842
Dibromomethane	U		0.00191	0.00579	5	09/10/2015 09:21	WG813842
1,2-Dichlorobenzene	U		0.00152	0.00579	5	09/10/2015 09:21	WG813842
1,3-Dichlorobenzene	U		0.00120	0.00579	5	09/10/2015 09:21	WG813842
1,4-Dichlorobenzene	U		0.00113	0.00579	5	09/10/2015 09:21	WG813842
Dichlorodifluoromethane	U		0.00356	0.0289	5	09/10/2015 09:21	WG813842
1,1-Dichloroethane	U		0.000995	0.00579	5	09/10/2015 09:21	WG813842
1,2-Dichloroethane	U		0.00132	0.00579	5	09/10/2015 09:21	WG813842
1,1-Dichloroethene	U		0.00152	0.00579	5	09/10/2015 09:21	WG813842
cis-1,2-Dichloroethene	U		0.00118	0.00579	5	09/10/2015 09:21	WG813842
trans-1,2-Dichloroethene	U		0.00132	0.00579	5	09/10/2015 09:21	WG813842
1,2-Dichloropropane	U		0.00179	0.00579	5	09/10/2015 09:21	WG813842
1,1-Dichloropropene	U		0.00158	0.00579	5	09/10/2015 09:21	WG813842
1,3-Dichloropropane	U		0.00104	0.00579	5	09/10/2015 09:21	WG813842
cis-1,3-Dichloropropene	U		0.00131	0.00579	5	09/10/2015 09:21	WG813842
trans-1,3-Dichloropropene	U		0.00134	0.00579	5	09/10/2015 09:21	WG813842
2,2-Dichloropropane	U		0.00140	0.00579	5	09/10/2015 09:21	WG813842
Di-isopropyl ether	U		0.00124	0.00579	5	09/10/2015 09:21	WG813842
Ethylbenzene	U		0.00148	0.00579	5	09/10/2015 09:21	WG813842
Hexachloro-1,3-butadiene	U		0.00171	0.00579	5	09/10/2015 09:21	WG813842
Isopropylbenzene	U		0.00122	0.00579	5	09/10/2015 09:21	WG813842
p-Isopropyltoluene	U		0.00102	0.00579	5	09/10/2015 09:21	WG813842
2-Butanone (MEK)	U		0.0234	0.0579	5	09/10/2015 09:21	WG813842
Methylene Chloride	U		0.00500	0.0289	5	09/10/2015 09:21	WG813842
4-Methyl-2-pentanone (MIBK)	U		0.00940	0.0579	5	09/10/2015 09:21	WG813842
Methyl tert-butyl ether	U		0.00106	0.00579	5	09/10/2015 09:21	WG813842
Naphthalene	U		0.00500	0.0289	5	09/10/2015 09:21	WG813842
n-Propylbenzene	U		0.00103	0.00579	5	09/10/2015 09:21	WG813842
Styrene	U		0.00117	0.00579	5	09/10/2015 09:21	WG813842

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry) mg/kg	Qualifier	MDL mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
1,1,1,2-Tetrachloroethane	U		0.00132	0.00579	5	09/10/2015 09:21	WG813842
1,1,2,2-Tetrachloroethane	U		0.00182	0.00579	5	09/10/2015 09:21	WG813842
1,1,2-Trichlorotrifluoroethane	U		0.00182	0.00579	5	09/10/2015 09:21	WG813842
Tetrachloroethene	U		0.00138	0.00579	5	09/10/2015 09:21	WG813842
Toluene	U		0.00217	0.0289	5	09/10/2015 09:21	WG813842
1,2,3-Trichlorobenzene	0.00246	J	0.00153	0.00579	5	09/10/2015 09:21	WG813842
1,2,4-Trichlorobenzene	U		0.00194	0.00579	5	09/10/2015 09:21	WG813842
1,1,1-Trichloroethane	U		0.00143	0.00579	5	09/10/2015 09:21	WG813842
1,1,2-Trichloroethane	U		0.00138	0.00579	5	09/10/2015 09:21	WG813842
Trichloroethene	U		0.00140	0.00579	5	09/10/2015 09:21	WG813842
Trichlorofluoromethane	U		0.00191	0.0289	5	09/10/2015 09:21	WG813842
1,2,3-Trichloropropane	U		0.00370	0.0145	5	09/10/2015 09:21	WG813842
1,2,4-Trimethylbenzene	U		0.00106	0.00579	5	09/10/2015 09:21	WG813842
1,2,3-Trimethylbenzene	U		0.00144	0.00579	5	09/10/2015 09:21	WG813842
1,3,5-Trimethylbenzene	U		0.00133	0.00579	5	09/10/2015 09:21	WG813842
Vinyl chloride	U		0.00146	0.00579	5	09/10/2015 09:21	WG813842
Xylenes, Total	U		0.00349	0.0174	5	09/10/2015 09:21	WG813842
(S) Toluene-d8	*97.1*			*88.7-115*		*09/07/2015 02:42*	WG813538
(S) Dibromofluoromethane	*90.4*			*76.3-123*		*09/07/2015 02:42*	WG813538
(S) 4-Bromofluorobenzene	*103*			*69.7-129*		*09/07/2015 02:42*	WG813538

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry) mg/kg	Qualifier	MDL mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
C12-C22 Hydrocarbons	13.4	J	7.33	46.3	10	09/01/2015 10:46	WG812600
C22-C32 Hydrocarbons	96.1		13.3	46.3	10	09/01/2015 10:46	WG812600
C32-C40 Hydrocarbons	149		13.3	46.3	10	09/01/2015 10:46	WG812600
(S) o-Terphenyl	*73.4*			*50.0-150*		*09/01/2015 10:46*	WG812600

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	87.0		1	09/02/2015 07:51	WG812816

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	MDL	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
TPH (GC/MS) Low Fraction	U		0.915	2.87	5	09/07/2015 13:55	WG813538
Acetone	U		0.0500	0.287	5	09/10/2015 09:41	WG813842
Acrylonitrile	U		0.00895	0.0575	5	09/10/2015 09:41	WG813842
Benzene	U		0.00135	0.00575	5	09/10/2015 09:41	WG813842
Bromobenzene	U		0.00142	0.00575	5	09/10/2015 09:41	WG813842
Bromodichloromethane	U		0.00127	0.00575	5	09/10/2015 09:41	WG813842
Bromoform	U		0.00212	0.00575	5	09/10/2015 09:41	WG813842
Bromomethane	U		0.00670	0.0287	5	09/10/2015 09:41	WG813842
n-Butylbenzene	U		0.00129	0.00575	5	09/10/2015 09:41	WG813842
sec-Butylbenzene	U		0.00100	0.00575	5	09/10/2015 09:41	WG813842
tert-Butylbenzene	U		0.00103	0.00575	5	09/10/2015 09:41	WG813842
Carbon tetrachloride	U		0.00164	0.00575	5	09/10/2015 09:41	WG813842
Chlorobenzene	U		0.00106	0.00575	5	09/10/2015 09:41	WG813842
Chlorodibromomethane	U		0.00186	0.00575	5	09/10/2015 09:41	WG813842
Chloroethane	U		0.00473	0.0287	5	09/10/2015 09:41	WG813842
2-Chloroethyl vinyl ether	U		0.0117	0.287	5	09/10/2015 09:41	WG813842
Chloroform	U		0.00114	0.0287	5	09/10/2015 09:41	WG813842
Chloromethane	U		0.00188	0.0144	5	09/10/2015 09:41	WG813842
2-Chlorotoluene	U		0.00150	0.00575	5	09/10/2015 09:41	WG813842
4-Chlorotoluene	U		0.00120	0.00575	5	09/10/2015 09:41	WG813842
1,2-Dibromo-3-Chloropropane	U		0.00525	0.0287	5	09/10/2015 09:41	WG813842
1,2-Dibromoethane	U		0.00172	0.00575	5	09/10/2015 09:41	WG813842
Dibromomethane	U		0.00191	0.00575	5	09/10/2015 09:41	WG813842
1,2-Dichlorobenzene	U		0.00152	0.00575	5	09/10/2015 09:41	WG813842
1,3-Dichlorobenzene	U		0.00120	0.00575	5	09/10/2015 09:41	WG813842
1,4-Dichlorobenzene	U		0.00113	0.00575	5	09/10/2015 09:41	WG813842
Dichlorodifluoromethane	U		0.00356	0.0287	5	09/10/2015 09:41	WG813842
1,1-Dichloroethane	U		0.000995	0.00575	5	09/10/2015 09:41	WG813842
1,2-Dichloroethane	U		0.00132	0.00575	5	09/10/2015 09:41	WG813842
1,1-Dichloroethene	U		0.00152	0.00575	5	09/10/2015 09:41	WG813842
cis-1,2-Dichloroethene	U		0.00118	0.00575	5	09/10/2015 09:41	WG813842
trans-1,2-Dichloroethene	U		0.00132	0.00575	5	09/10/2015 09:41	WG813842
1,2-Dichloropropane	U		0.00179	0.00575	5	09/10/2015 09:41	WG813842
1,1-Dichloropropene	U		0.00158	0.00575	5	09/10/2015 09:41	WG813842
1,3-Dichloropropane	U		0.00104	0.00575	5	09/10/2015 09:41	WG813842
cis-1,3-Dichloropropene	U		0.00131	0.00575	5	09/10/2015 09:41	WG813842
trans-1,3-Dichloropropene	U		0.00134	0.00575	5	09/10/2015 09:41	WG813842
2,2-Dichloropropane	U		0.00140	0.00575	5	09/10/2015 09:41	WG813842
Di-isopropyl ether	U		0.00124	0.00575	5	09/10/2015 09:41	WG813842
Ethylbenzene	U		0.00148	0.00575	5	09/10/2015 09:41	WG813842
Hexachloro-1,3-butadiene	U		0.00171	0.00575	5	09/10/2015 09:41	WG813842
Isopropylbenzene	U		0.00122	0.00575	5	09/10/2015 09:41	WG813842
p-Isopropyltoluene	U		0.00102	0.00575	5	09/10/2015 09:41	WG813842
2-Butanone (MEK)	U		0.0234	0.0575	5	09/10/2015 09:41	WG813842
Methylene Chloride	U		0.00500	0.0287	5	09/10/2015 09:41	WG813842
4-Methyl-2-pentanone (MIBK)	U		0.00940	0.0575	5	09/10/2015 09:41	WG813842
Methyl tert-butyl ether	U		0.00106	0.00575	5	09/10/2015 09:41	WG813842
Naphthalene	U		0.00500	0.0287	5	09/10/2015 09:41	WG813842
n-Propylbenzene	U		0.00103	0.00575	5	09/10/2015 09:41	WG813842
Styrene	U		0.00117	0.00575	5	09/10/2015 09:41	WG813842

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry) mg/kg	Qualifier	MDL mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
1,1,1,2-Tetrachloroethane	U		0.00132	0.00575	5	09/10/2015 09:41	WG813842
1,1,2,2-Tetrachloroethane	U		0.00182	0.00575	5	09/10/2015 09:41	WG813842
1,1,2-Trichlorotrifluoroethane	U		0.00182	0.00575	5	09/10/2015 09:41	WG813842
Tetrachloroethene	U		0.00138	0.00575	5	09/10/2015 09:41	WG813842
Toluene	U		0.00217	0.0287	5	09/10/2015 09:41	WG813842
1,2,3-Trichlorobenzene	U		0.00153	0.00575	5	09/10/2015 09:41	WG813842
1,2,4-Trichlorobenzene	U		0.00194	0.00575	5	09/10/2015 09:41	WG813842
1,1,1-Trichloroethane	U		0.00143	0.00575	5	09/10/2015 09:41	WG813842
1,1,2-Trichloroethane	U		0.00138	0.00575	5	09/10/2015 09:41	WG813842
Trichloroethene	U		0.00140	0.00575	5	09/10/2015 09:41	WG813842
Trichlorofluoromethane	U		0.00191	0.0287	5	09/10/2015 09:41	WG813842
1,2,3-Trichloropropane	U		0.00370	0.0144	5	09/10/2015 09:41	WG813842
1,2,4-Trimethylbenzene	U		0.00106	0.00575	5	09/10/2015 09:41	WG813842
1,2,3-Trimethylbenzene	U		0.00144	0.00575	5	09/10/2015 09:41	WG813842
1,3,5-Trimethylbenzene	U		0.00133	0.00575	5	09/10/2015 09:41	WG813842
Vinyl chloride	U		0.00146	0.00575	5	09/10/2015 09:41	WG813842
Xylenes, Total	U		0.00349	0.0172	5	09/10/2015 09:41	WG813842
(S) Toluene-d8	*106*			*88.7-115*		*09/07/2015 13:55*	WG813538
(S) Dibromofluoromethane	*90.6*			*76.3-123*		*09/07/2015 13:55*	WG813538
(S) 4-Bromofluorobenzene	*104*			*69.7-129*		*09/07/2015 13:55*	WG813538

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry) mg/kg	Qualifier	MDL mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
C12-C22 Hydrocarbons	1.49	J	0.733	4.60	1	09/01/2015 02:53	WG812600
C22-C32 Hydrocarbons	U		1.33	4.60	1	09/01/2015 02:53	WG812600
C32-C40 Hydrocarbons	U		1.33	4.60	1	09/01/2015 02:53	WG812600
(S) o-Terphenyl	*76.3*			*50.0-150*		*09/01/2015 02:53*	WG812600

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	83.9		1	09/02/2015 07:51	WG812816

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	MDL	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
TPH (GC/MS) Low Fraction	U		0.915	2.98	5	09/07/2015 14:19	WG813538
Acetone	U		0.0500	0.298	5	09/10/2015 10:01	WG813842
Acrylonitrile	U		0.00895	0.0596	5	09/10/2015 10:01	WG813842
Benzene	U		0.00135	0.00596	5	09/10/2015 10:01	WG813842
Bromobenzene	U		0.00142	0.00596	5	09/10/2015 10:01	WG813842
Bromodichloromethane	U		0.00127	0.00596	5	09/10/2015 10:01	WG813842
Bromoform	U		0.00212	0.00596	5	09/10/2015 10:01	WG813842
Bromomethane	U		0.00670	0.0298	5	09/10/2015 10:01	WG813842
n-Butylbenzene	U		0.00129	0.00596	5	09/10/2015 10:01	WG813842
sec-Butylbenzene	U		0.00100	0.00596	5	09/10/2015 10:01	WG813842
tert-Butylbenzene	U		0.00103	0.00596	5	09/10/2015 10:01	WG813842
Carbon tetrachloride	U		0.00164	0.00596	5	09/10/2015 10:01	WG813842
Chlorobenzene	U		0.00106	0.00596	5	09/10/2015 10:01	WG813842
Chlorodibromomethane	U		0.00186	0.00596	5	09/10/2015 10:01	WG813842
Chloroethane	U		0.00473	0.0298	5	09/10/2015 10:01	WG813842
2-Chloroethyl vinyl ether	U		0.0117	0.298	5	09/10/2015 10:01	WG813842
Chloroform	U		0.00114	0.0298	5	09/10/2015 10:01	WG813842
Chloromethane	U		0.00188	0.0149	5	09/10/2015 10:01	WG813842
2-Chlorotoluene	U		0.00150	0.00596	5	09/10/2015 10:01	WG813842
4-Chlorotoluene	U		0.00120	0.00596	5	09/10/2015 10:01	WG813842
1,2-Dibromo-3-Chloropropane	U		0.00525	0.0298	5	09/10/2015 10:01	WG813842
1,2-Dibromoethane	U		0.00172	0.00596	5	09/10/2015 10:01	WG813842
Dibromomethane	U		0.00191	0.00596	5	09/10/2015 10:01	WG813842
1,2-Dichlorobenzene	U		0.00152	0.00596	5	09/10/2015 10:01	WG813842
1,3-Dichlorobenzene	U		0.00120	0.00596	5	09/10/2015 10:01	WG813842
1,4-Dichlorobenzene	U		0.00113	0.00596	5	09/10/2015 10:01	WG813842
Dichlorodifluoromethane	U		0.00356	0.0298	5	09/10/2015 10:01	WG813842
1,1-Dichloroethane	U		0.000995	0.00596	5	09/10/2015 10:01	WG813842
1,2-Dichloroethane	U		0.00132	0.00596	5	09/10/2015 10:01	WG813842
1,1-Dichloroethene	U		0.00152	0.00596	5	09/10/2015 10:01	WG813842
cis-1,2-Dichloroethene	U		0.00118	0.00596	5	09/10/2015 10:01	WG813842
trans-1,2-Dichloroethene	U		0.00132	0.00596	5	09/10/2015 10:01	WG813842
1,2-Dichloropropane	U		0.00179	0.00596	5	09/10/2015 10:01	WG813842
1,1-Dichloropropene	U		0.00158	0.00596	5	09/10/2015 10:01	WG813842
1,3-Dichloropropane	U		0.00104	0.00596	5	09/10/2015 10:01	WG813842
cis-1,3-Dichloropropene	U		0.00131	0.00596	5	09/10/2015 10:01	WG813842
trans-1,3-Dichloropropene	U		0.00134	0.00596	5	09/10/2015 10:01	WG813842
2,2-Dichloropropane	U		0.00140	0.00596	5	09/10/2015 10:01	WG813842
Di-isopropyl ether	U		0.00124	0.00596	5	09/10/2015 10:01	WG813842
Ethylbenzene	U		0.00148	0.00596	5	09/10/2015 10:01	WG813842
Hexachloro-1,3-butadiene	U		0.00171	0.00596	5	09/10/2015 10:01	WG813842
Isopropylbenzene	U		0.00122	0.00596	5	09/10/2015 10:01	WG813842
p-Isopropyltoluene	U		0.00102	0.00596	5	09/10/2015 10:01	WG813842
2-Butanone (MEK)	U		0.0234	0.0596	5	09/10/2015 10:01	WG813842
Methylene Chloride	U		0.00500	0.0298	5	09/10/2015 10:01	WG813842
4-Methyl-2-pentanone (MIBK)	U		0.00940	0.0596	5	09/10/2015 10:01	WG813842
Methyl tert-butyl ether	U		0.00106	0.00596	5	09/10/2015 10:01	WG813842
Naphthalene	U		0.00500	0.0298	5	09/10/2015 10:01	WG813842
n-Propylbenzene	U		0.00103	0.00596	5	09/10/2015 10:01	WG813842
Styrene	U		0.00117	0.00596	5	09/10/2015 10:01	WG813842

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry) mg/kg	Qualifier	MDL mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
1,1,1,2-Tetrachloroethane	U		0.00132	0.00596	5	09/10/2015 10:01	WG813842
1,1,2,2-Tetrachloroethane	U		0.00182	0.00596	5	09/10/2015 10:01	WG813842
1,1,2-Trichlorotrifluoroethane	U		0.00182	0.00596	5	09/10/2015 10:01	WG813842
Tetrachloroethene	U		0.00138	0.00596	5	09/10/2015 10:01	WG813842
Toluene	U		0.00217	0.0298	5	09/10/2015 10:01	WG813842
1,2,3-Trichlorobenzene	U		0.00153	0.00596	5	09/10/2015 10:01	WG813842
1,2,4-Trichlorobenzene	U		0.00194	0.00596	5	09/10/2015 10:01	WG813842
1,1,1-Trichloroethane	U		0.00143	0.00596	5	09/10/2015 10:01	WG813842
1,1,2-Trichloroethane	U		0.00138	0.00596	5	09/10/2015 10:01	WG813842
Trichloroethene	U		0.00140	0.00596	5	09/10/2015 10:01	WG813842
Trichlorofluoromethane	U		0.00191	0.0298	5	09/10/2015 10:01	WG813842
1,2,3-Trichloropropane	U		0.00370	0.0149	5	09/10/2015 10:01	WG813842
1,2,4-Trimethylbenzene	U		0.00106	0.00596	5	09/10/2015 10:01	WG813842
1,2,3-Trimethylbenzene	U		0.00144	0.00596	5	09/10/2015 10:01	WG813842
1,3,5-Trimethylbenzene	U		0.00133	0.00596	5	09/10/2015 10:01	WG813842
Vinyl chloride	U		0.00146	0.00596	5	09/10/2015 10:01	WG813842
Xylenes, Total	U		0.00349	0.0179	5	09/10/2015 10:01	WG813842
(S) Toluene-d8	*105*			*88.7-115*		*09/07/2015 14:19*	WG813538
(S) Dibromofluoromethane	*93.5*			*76.3-123*		*09/07/2015 14:19*	WG813538
(S) 4-Bromofluorobenzene	*104*			*69.7-129*		*09/07/2015 14:19*	WG813538

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry) mg/kg	Qualifier	MDL mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
C12-C22 Hydrocarbons	U		0.733	4.77	1	09/01/2015 03:18	WG812600
C22-C32 Hydrocarbons	U		1.33	4.77	1	09/01/2015 03:18	WG812600
C32-C40 Hydrocarbons	U		1.33	4.77	1	09/01/2015 03:18	WG812600
(S) o-Terphenyl	*65.3*			*50.0-150*		*09/01/2015 03:18*	WG812600

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	83.8		1	09/02/2015 07:51	WG812816

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	MDL	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
TPH (GC/MS) Low Fraction	U		0.915	2.98	5	09/07/2015 14:43	WG813538
Acetone	U		0.0500	0.298	5	09/10/2015 10:21	WG813842
Acrylonitrile	U		0.00895	0.0597	5	09/10/2015 10:21	WG813842
Benzene	U		0.00135	0.00597	5	09/10/2015 10:21	WG813842
Bromobenzene	U		0.00142	0.00597	5	09/10/2015 10:21	WG813842
Bromodichloromethane	U		0.00127	0.00597	5	09/10/2015 10:21	WG813842
Bromoform	U		0.00212	0.00597	5	09/10/2015 10:21	WG813842
Bromomethane	U		0.00670	0.0298	5	09/10/2015 10:21	WG813842
n-Butylbenzene	U		0.00129	0.00597	5	09/10/2015 10:21	WG813842
sec-Butylbenzene	U		0.00100	0.00597	5	09/10/2015 10:21	WG813842
tert-Butylbenzene	U		0.00103	0.00597	5	09/10/2015 10:21	WG813842
Carbon tetrachloride	U		0.00164	0.00597	5	09/10/2015 10:21	WG813842
Chlorobenzene	U		0.00106	0.00597	5	09/10/2015 10:21	WG813842
Chlorodibromomethane	U		0.00186	0.00597	5	09/10/2015 10:21	WG813842
Chloroethane	U		0.00473	0.0298	5	09/10/2015 10:21	WG813842
2-Chloroethyl vinyl ether	U		0.0117	0.298	5	09/10/2015 10:21	WG813842
Chloroform	U		0.00114	0.0298	5	09/10/2015 10:21	WG813842
Chloromethane	U		0.00188	0.0149	5	09/10/2015 10:21	WG813842
2-Chlorotoluene	U		0.00150	0.00597	5	09/10/2015 10:21	WG813842
4-Chlorotoluene	U		0.00120	0.00597	5	09/10/2015 10:21	WG813842
1,2-Dibromo-3-Chloropropane	U		0.00525	0.0298	5	09/10/2015 10:21	WG813842
1,2-Dibromoethane	U		0.00172	0.00597	5	09/10/2015 10:21	WG813842
Dibromomethane	U		0.00191	0.00597	5	09/10/2015 10:21	WG813842
1,2-Dichlorobenzene	U		0.00152	0.00597	5	09/10/2015 10:21	WG813842
1,3-Dichlorobenzene	U		0.00120	0.00597	5	09/10/2015 10:21	WG813842
1,4-Dichlorobenzene	U		0.00113	0.00597	5	09/10/2015 10:21	WG813842
Dichlorodifluoromethane	U		0.00356	0.0298	5	09/10/2015 10:21	WG813842
1,1-Dichloroethane	U		0.000995	0.00597	5	09/10/2015 10:21	WG813842
1,2-Dichloroethane	U		0.00132	0.00597	5	09/10/2015 10:21	WG813842
1,1-Dichloroethene	U		0.00152	0.00597	5	09/10/2015 10:21	WG813842
cis-1,2-Dichloroethene	U		0.00118	0.00597	5	09/10/2015 10:21	WG813842
trans-1,2-Dichloroethene	U		0.00132	0.00597	5	09/10/2015 10:21	WG813842
1,2-Dichloropropane	U		0.00179	0.00597	5	09/10/2015 10:21	WG813842
1,1-Dichloropropene	U		0.00158	0.00597	5	09/10/2015 10:21	WG813842
1,3-Dichloropropane	U		0.00104	0.00597	5	09/10/2015 10:21	WG813842
cis-1,3-Dichloropropene	U		0.00131	0.00597	5	09/10/2015 10:21	WG813842
trans-1,3-Dichloropropene	U		0.00134	0.00597	5	09/10/2015 10:21	WG813842
2,2-Dichloropropane	U		0.00140	0.00597	5	09/10/2015 10:21	WG813842
Di-isopropyl ether	U		0.00124	0.00597	5	09/10/2015 10:21	WG813842
Ethylbenzene	U		0.00148	0.00597	5	09/10/2015 10:21	WG813842
Hexachloro-1,3-butadiene	U		0.00171	0.00597	5	09/10/2015 10:21	WG813842
Isopropylbenzene	U		0.00122	0.00597	5	09/10/2015 10:21	WG813842
p-Isopropyltoluene	U		0.00102	0.00597	5	09/10/2015 10:21	WG813842
2-Butanone (MEK)	U		0.0234	0.0597	5	09/10/2015 10:21	WG813842
Methylene Chloride	U		0.00500	0.0298	5	09/10/2015 10:21	WG813842
4-Methyl-2-pentanone (MIBK)	U		0.00940	0.0597	5	09/10/2015 10:21	WG813842
Methyl tert-butyl ether	U		0.00106	0.00597	5	09/10/2015 10:21	WG813842
Naphthalene	U		0.00500	0.0298	5	09/10/2015 10:21	WG813842
n-Propylbenzene	U		0.00103	0.00597	5	09/10/2015 10:21	WG813842
Styrene	U		0.00117	0.00597	5	09/10/2015 10:21	WG813842

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry) mg/kg	Qualifier	MDL mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
1,1,1,2-Tetrachloroethane	U		0.00132	0.00597	5	09/10/2015 10:21	WG813842
1,1,2,2-Tetrachloroethane	U		0.00182	0.00597	5	09/10/2015 10:21	WG813842
1,1,2-Trichlorotrifluoroethane	U		0.00182	0.00597	5	09/10/2015 10:21	WG813842
Tetrachloroethene	U		0.00138	0.00597	5	09/10/2015 10:21	WG813842
Toluene	U		0.00217	0.0298	5	09/10/2015 10:21	WG813842
1,2,3-Trichlorobenzene	U		0.00153	0.00597	5	09/10/2015 10:21	WG813842
1,2,4-Trichlorobenzene	U		0.00194	0.00597	5	09/10/2015 10:21	WG813842
1,1,1-Trichloroethane	U		0.00143	0.00597	5	09/10/2015 10:21	WG813842
1,1,2-Trichloroethane	U		0.00138	0.00597	5	09/10/2015 10:21	WG813842
Trichloroethene	U		0.00140	0.00597	5	09/10/2015 10:21	WG813842
Trichlorofluoromethane	U		0.00191	0.0298	5	09/10/2015 10:21	WG813842
1,2,3-Trichloropropane	U		0.00370	0.0149	5	09/10/2015 10:21	WG813842
1,2,4-Trimethylbenzene	U		0.00106	0.00597	5	09/10/2015 10:21	WG813842
1,2,3-Trimethylbenzene	U		0.00144	0.00597	5	09/10/2015 10:21	WG813842
1,3,5-Trimethylbenzene	U		0.00133	0.00597	5	09/10/2015 10:21	WG813842
Vinyl chloride	U		0.00146	0.00597	5	09/10/2015 10:21	WG813842
Xylenes, Total	U		0.00349	0.0179	5	09/10/2015 10:21	WG813842
(S) Toluene-d8	*102*			*88.7-115*		*09/07/2015 14:43*	WG813538
(S) Dibromofluoromethane	*94.2*			*76.3-123*		*09/07/2015 14:43*	WG813538
(S) 4-Bromofluorobenzene	*105*			*69.7-129*		*09/07/2015 14:43*	WG813538

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry) mg/kg	Qualifier	MDL mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
C12-C22 Hydrocarbons	0.896	J	0.733	4.78	1	09/01/2015 03:42	WG812600
C22-C32 Hydrocarbons	2.90	J	1.33	4.78	1	09/01/2015 03:42	WG812600
C32-C40 Hydrocarbons	2.04	J	1.33	4.78	1	09/01/2015 03:42	WG812600
(S) o-Terphenyl	*77.5*			*50.0-150*		*09/01/2015 03:42*	WG812600

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	84.1		1	09/02/2015 07:52	WG812816

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	MDL	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
TPH (GC/MS) Low Fraction	U		0.915	2.97	5	09/07/2015 15:07	WG813538
Acetone	U		0.0500	0.297	5	09/10/2015 10:41	WG813842
Acrylonitrile	U		0.00895	0.0595	5	09/10/2015 10:41	WG813842
Benzene	U		0.00135	0.00595	5	09/10/2015 10:41	WG813842
Bromobenzene	U		0.00142	0.00595	5	09/10/2015 10:41	WG813842
Bromodichloromethane	U		0.00127	0.00595	5	09/10/2015 10:41	WG813842
Bromoform	U		0.00212	0.00595	5	09/10/2015 10:41	WG813842
Bromomethane	U		0.00670	0.0297	5	09/10/2015 10:41	WG813842
n-Butylbenzene	U		0.00129	0.00595	5	09/10/2015 10:41	WG813842
sec-Butylbenzene	U		0.00100	0.00595	5	09/10/2015 10:41	WG813842
tert-Butylbenzene	U		0.00103	0.00595	5	09/10/2015 10:41	WG813842
Carbon tetrachloride	U		0.00164	0.00595	5	09/10/2015 10:41	WG813842
Chlorobenzene	U		0.00106	0.00595	5	09/10/2015 10:41	WG813842
Chlorodibromomethane	U		0.00186	0.00595	5	09/10/2015 10:41	WG813842
Chloroethane	U		0.00473	0.0297	5	09/10/2015 10:41	WG813842
2-Chloroethyl vinyl ether	U		0.0117	0.297	5	09/10/2015 10:41	WG813842
Chloroform	U		0.00114	0.0297	5	09/10/2015 10:41	WG813842
Chloromethane	U		0.00188	0.0149	5	09/10/2015 10:41	WG813842
2-Chlorotoluene	U		0.00150	0.00595	5	09/10/2015 10:41	WG813842
4-Chlorotoluene	U		0.00120	0.00595	5	09/10/2015 10:41	WG813842
1,2-Dibromo-3-Chloropropane	U		0.00525	0.0297	5	09/10/2015 10:41	WG813842
1,2-Dibromoethane	U		0.00172	0.00595	5	09/10/2015 10:41	WG813842
Dibromomethane	U		0.00191	0.00595	5	09/10/2015 10:41	WG813842
1,2-Dichlorobenzene	U		0.00152	0.00595	5	09/10/2015 10:41	WG813842
1,3-Dichlorobenzene	U		0.00120	0.00595	5	09/10/2015 10:41	WG813842
1,4-Dichlorobenzene	U		0.00113	0.00595	5	09/10/2015 10:41	WG813842
Dichlorodifluoromethane	U		0.00356	0.0297	5	09/10/2015 10:41	WG813842
1,1-Dichloroethane	U		0.000995	0.00595	5	09/10/2015 10:41	WG813842
1,2-Dichloroethane	U		0.00132	0.00595	5	09/10/2015 10:41	WG813842
1,1-Dichloroethene	U		0.00152	0.00595	5	09/10/2015 10:41	WG813842
cis-1,2-Dichloroethene	U		0.00118	0.00595	5	09/10/2015 10:41	WG813842
trans-1,2-Dichloroethene	U		0.00132	0.00595	5	09/10/2015 10:41	WG813842
1,2-Dichloropropane	U		0.00179	0.00595	5	09/10/2015 10:41	WG813842
1,1-Dichloropropene	U		0.00158	0.00595	5	09/10/2015 10:41	WG813842
1,3-Dichloropropane	U		0.00104	0.00595	5	09/10/2015 10:41	WG813842
cis-1,3-Dichloropropene	U		0.00131	0.00595	5	09/10/2015 10:41	WG813842
trans-1,3-Dichloropropene	U		0.00134	0.00595	5	09/10/2015 10:41	WG813842
2,2-Dichloropropane	U		0.00140	0.00595	5	09/10/2015 10:41	WG813842
Di-isopropyl ether	U		0.00124	0.00595	5	09/10/2015 10:41	WG813842
Ethylbenzene	U		0.00148	0.00595	5	09/10/2015 10:41	WG813842
Hexachloro-1,3-butadiene	U		0.00171	0.00595	5	09/10/2015 10:41	WG813842
Isopropylbenzene	U		0.00122	0.00595	5	09/10/2015 10:41	WG813842
p-Isopropyltoluene	U		0.00102	0.00595	5	09/10/2015 10:41	WG813842
2-Butanone (MEK)	U		0.0234	0.0595	5	09/10/2015 10:41	WG813842
Methylene Chloride	U		0.00500	0.0297	5	09/10/2015 10:41	WG813842
4-Methyl-2-pentanone (MIBK)	U		0.00940	0.0595	5	09/10/2015 10:41	WG813842
Methyl tert-butyl ether	U		0.00106	0.00595	5	09/10/2015 10:41	WG813842
Naphthalene	U		0.00500	0.0297	5	09/10/2015 10:41	WG813842
n-Propylbenzene	U		0.00103	0.00595	5	09/10/2015 10:41	WG813842
Styrene	U		0.00117	0.00595	5	09/10/2015 10:41	WG813842

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry) mg/kg	Qualifier	MDL mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
1,1,1,2-Tetrachloroethane	U		0.00132	0.00595	5	09/10/2015 10:41	WG813842
1,1,2,2-Tetrachloroethane	U		0.00182	0.00595	5	09/10/2015 10:41	WG813842
1,1,2-Trichlorotrifluoroethane	U		0.00182	0.00595	5	09/10/2015 10:41	WG813842
Tetrachloroethene	U		0.00138	0.00595	5	09/10/2015 10:41	WG813842
Toluene	U		0.00217	0.0297	5	09/10/2015 10:41	WG813842
1,2,3-Trichlorobenzene	U		0.00153	0.00595	5	09/10/2015 10:41	WG813842
1,2,4-Trichlorobenzene	U		0.00194	0.00595	5	09/10/2015 10:41	WG813842
1,1,1-Trichloroethane	U		0.00143	0.00595	5	09/10/2015 10:41	WG813842
1,1,2-Trichloroethane	U		0.00138	0.00595	5	09/10/2015 10:41	WG813842
Trichloroethene	U		0.00140	0.00595	5	09/10/2015 10:41	WG813842
Trichlorofluoromethane	U		0.00191	0.0297	5	09/10/2015 10:41	WG813842
1,2,3-Trichloropropane	U		0.00370	0.0149	5	09/10/2015 10:41	WG813842
1,2,4-Trimethylbenzene	U		0.00106	0.00595	5	09/10/2015 10:41	WG813842
1,2,3-Trimethylbenzene	U		0.00144	0.00595	5	09/10/2015 10:41	WG813842
1,3,5-Trimethylbenzene	U		0.00133	0.00595	5	09/10/2015 10:41	WG813842
Vinyl chloride	U		0.00146	0.00595	5	09/10/2015 10:41	WG813842
Xylenes, Total	U		0.00349	0.0178	5	09/10/2015 10:41	WG813842
(S) Toluene-d8	*104*			*88.7-115*		*09/07/2015 15:07*	WG813538
(S) Dibromofluoromethane	*90.2*			*76.3-123*		*09/07/2015 15:07*	WG813538
(S) 4-Bromofluorobenzene	*102*			*69.7-129*		*09/07/2015 15:07*	WG813538

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry) mg/kg	Qualifier	MDL mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
C12-C22 Hydrocarbons	7.96	J	3.66	23.8	5	09/01/2015 10:21	WG812600
C22-C32 Hydrocarbons	53.0		6.65	23.8	5	09/01/2015 10:21	WG812600
C32-C40 Hydrocarbons	62.2		6.65	23.8	5	09/01/2015 10:21	WG812600
(S) o-Terphenyl	*73.4*			*50.0-150*		*09/01/2015 10:21*	WG812600

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	85.2		1	09/02/2015 07:52	WG812816

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	MDL	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
TPH (GC/MS) Low Fraction	U		0.915	2.93	5	09/07/2015 15:31	WG813538
Acetone	U		0.0500	0.293	5	09/10/2015 13:23	WG813842
Acrylonitrile	U		0.00895	0.0587	5	09/10/2015 13:23	WG813842
Benzene	U		0.00135	0.00587	5	09/10/2015 13:23	WG813842
Bromobenzene	U		0.00142	0.00587	5	09/10/2015 13:23	WG813842
Bromodichloromethane	U		0.00127	0.00587	5	09/10/2015 13:23	WG813842
Bromoform	U		0.00212	0.00587	5	09/10/2015 13:23	WG813842
Bromomethane	U		0.00670	0.0293	5	09/10/2015 13:23	WG813842
n-Butylbenzene	U		0.00129	0.00587	5	09/10/2015 13:23	WG813842
sec-Butylbenzene	U		0.00100	0.00587	5	09/10/2015 13:23	WG813842
tert-Butylbenzene	U		0.00103	0.00587	5	09/10/2015 13:23	WG813842
Carbon tetrachloride	U		0.00164	0.00587	5	09/10/2015 13:23	WG813842
Chlorobenzene	U		0.00106	0.00587	5	09/10/2015 13:23	WG813842
Chlorodibromomethane	U		0.00186	0.00587	5	09/10/2015 13:23	WG813842
Chloroethane	U		0.00473	0.0293	5	09/10/2015 13:23	WG813842
2-Chloroethyl vinyl ether	U		0.0117	0.293	5	09/10/2015 13:23	WG813842
Chloroform	U		0.00114	0.0293	5	09/10/2015 13:23	WG813842
Chloromethane	U		0.00188	0.0147	5	09/10/2015 13:23	WG813842
2-Chlorotoluene	U		0.00150	0.00587	5	09/10/2015 13:23	WG813842
4-Chlorotoluene	U		0.00120	0.00587	5	09/10/2015 13:23	WG813842
1,2-Dibromo-3-Chloropropane	U		0.00525	0.0293	5	09/10/2015 13:23	WG813842
1,2-Dibromoethane	U		0.00172	0.00587	5	09/10/2015 13:23	WG813842
Dibromomethane	U		0.00191	0.00587	5	09/10/2015 13:23	WG813842
1,2-Dichlorobenzene	U		0.00152	0.00587	5	09/10/2015 13:23	WG813842
1,3-Dichlorobenzene	U		0.00120	0.00587	5	09/10/2015 13:23	WG813842
1,4-Dichlorobenzene	U		0.00113	0.00587	5	09/10/2015 13:23	WG813842
Dichlorodifluoromethane	U		0.00356	0.0293	5	09/10/2015 13:23	WG813842
1,1-Dichloroethane	U		0.000995	0.00587	5	09/10/2015 13:23	WG813842
1,2-Dichloroethane	U		0.00132	0.00587	5	09/10/2015 13:23	WG813842
1,1-Dichloroethene	U		0.00152	0.00587	5	09/10/2015 13:23	WG813842
cis-1,2-Dichloroethene	U		0.00118	0.00587	5	09/10/2015 13:23	WG813842
trans-1,2-Dichloroethene	U		0.00132	0.00587	5	09/10/2015 13:23	WG813842
1,2-Dichloropropane	U		0.00179	0.00587	5	09/10/2015 13:23	WG813842
1,1-Dichloropropene	U		0.00158	0.00587	5	09/10/2015 13:23	WG813842
1,3-Dichloropropane	U		0.00104	0.00587	5	09/10/2015 13:23	WG813842
cis-1,3-Dichloropropene	U		0.00131	0.00587	5	09/10/2015 13:23	WG813842
trans-1,3-Dichloropropene	U		0.00134	0.00587	5	09/10/2015 13:23	WG813842
2,2-Dichloropropane	U		0.00140	0.00587	5	09/10/2015 13:23	WG813842
Di-isopropyl ether	U		0.00124	0.00587	5	09/10/2015 13:23	WG813842
Ethylbenzene	U		0.00148	0.00587	5	09/10/2015 13:23	WG813842
Hexachloro-1,3-butadiene	U		0.00171	0.00587	5	09/10/2015 13:23	WG813842
Isopropylbenzene	U		0.00122	0.00587	5	09/10/2015 13:23	WG813842
p-Isopropyltoluene	U		0.00102	0.00587	5	09/10/2015 13:23	WG813842
2-Butanone (MEK)	U		0.0234	0.0587	5	09/10/2015 13:23	WG813842
Methylene Chloride	U		0.00500	0.0293	5	09/10/2015 13:23	WG813842
4-Methyl-2-pentanone (MIBK)	U		0.00940	0.0587	5	09/10/2015 13:23	WG813842
Methyl tert-butyl ether	U		0.00106	0.00587	5	09/10/2015 13:23	WG813842
Naphthalene	U		0.00500	0.0293	5	09/10/2015 13:23	WG813842
n-Propylbenzene	U		0.00103	0.00587	5	09/10/2015 13:23	WG813842
Styrene	U		0.00117	0.00587	5	09/10/2015 13:23	WG813842

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry) mg/kg	Qualifier	MDL mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
1,1,1,2-Tetrachloroethane	U		0.00132	0.00587	5	09/10/2015 13:23	WG813842
1,1,2,2-Tetrachloroethane	U		0.00182	0.00587	5	09/10/2015 13:23	WG813842
1,1,2-Trichlorotrifluoroethane	U		0.00182	0.00587	5	09/10/2015 13:23	WG813842
Tetrachloroethene	U		0.00138	0.00587	5	09/10/2015 13:23	WG813842
Toluene	U		0.00217	0.0293	5	09/10/2015 13:23	WG813842
1,2,3-Trichlorobenzene	U		0.00153	0.00587	5	09/10/2015 13:23	WG813842
1,2,4-Trichlorobenzene	U		0.00194	0.00587	5	09/10/2015 13:23	WG813842
1,1,1-Trichloroethane	U		0.00143	0.00587	5	09/10/2015 13:23	WG813842
1,1,2-Trichloroethane	U		0.00138	0.00587	5	09/10/2015 13:23	WG813842
Trichloroethene	U		0.00140	0.00587	5	09/10/2015 13:23	WG813842
Trichlorofluoromethane	U		0.00191	0.0293	5	09/10/2015 13:23	WG813842
1,2,3-Trichloropropane	U		0.00370	0.0147	5	09/10/2015 13:23	WG813842
1,2,4-Trimethylbenzene	U		0.00106	0.00587	5	09/10/2015 13:23	WG813842
1,2,3-Trimethylbenzene	U		0.00144	0.00587	5	09/10/2015 13:23	WG813842
1,3,5-Trimethylbenzene	U		0.00133	0.00587	5	09/10/2015 13:23	WG813842
Vinyl chloride	U		0.00146	0.00587	5	09/10/2015 13:23	WG813842
Xylenes, Total	U		0.00349	0.0176	5	09/10/2015 13:23	WG813842
(S) Toluene-d8	*103*			*88.7-115*		*09/07/2015 15:31*	WG813538
(S) Dibromofluoromethane	*87.3*			*76.3-123*		*09/07/2015 15:31*	WG813538
(S) 4-Bromofluorobenzene	*102*			*69.7-129*		*09/07/2015 15:31*	WG813538

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry) mg/kg	Qualifier	MDL mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
C12-C22 Hydrocarbons	U		0.733	4.69	1	09/01/2015 04:07	WG812600
C22-C32 Hydrocarbons	U		1.33	4.69	1	09/01/2015 04:07	WG812600
C32-C40 Hydrocarbons	U		1.33	4.69	1	09/01/2015 04:07	WG812600
(S) o-Terphenyl	*76.5*			*50.0-150*		*09/01/2015 04:07*	WG812600

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TPH (GC/MS) Low Fraction	U		108	500	1	09/04/2015 07:03	WG813362
Acetone	U		10.0	50.0	1	09/04/2015 07:03	WG813362
Acrolein	U		8.87	50.0	1	09/04/2015 07:03	WG813362
Acrylonitrile	U		1.87	10.0	1	09/04/2015 07:03	WG813362
Benzene	U		0.331	1.00	1	09/04/2015 07:03	WG813362
Bromobenzene	U		0.352	1.00	1	09/04/2015 07:03	WG813362
Bromodichloromethane	U		0.380	1.00	1	09/04/2015 07:03	WG813362
Bromoform	U		0.469	1.00	1	09/04/2015 07:03	WG813362
Bromomethane	U		0.866	5.00	1	09/04/2015 07:03	WG813362
n-Butylbenzene	U		0.361	1.00	1	09/04/2015 07:03	WG813362
sec-Butylbenzene	U		0.365	1.00	1	09/04/2015 07:03	WG813362
tert-Butylbenzene	U		0.399	1.00	1	09/04/2015 07:03	WG813362
Carbon tetrachloride	U		0.379	1.00	1	09/04/2015 07:03	WG813362
Chlorobenzene	U		0.348	1.00	1	09/04/2015 07:03	WG813362
Chlorodibromomethane	U		0.327	1.00	1	09/04/2015 07:03	WG813362
Chloroethane	U		0.453	5.00	1	09/04/2015 07:03	WG813362
2-Chloroethyl vinyl ether	U		3.01	50.0	1	09/04/2015 07:03	WG813362
Chloroform	U		0.324	5.00	1	09/04/2015 07:03	WG813362
Chloromethane	U		0.276	2.50	1	09/04/2015 07:03	WG813362
2-Chlorotoluene	U		0.375	1.00	1	09/04/2015 07:03	WG813362
4-Chlorotoluene	U		0.351	1.00	1	09/04/2015 07:03	WG813362
1,2-Dibromo-3-Chloropropane	U		1.33	5.00	1	09/04/2015 07:03	WG813362
1,2-Dibromoethane	U		0.381	1.00	1	09/04/2015 07:03	WG813362
Dibromomethane	U		0.346	1.00	1	09/04/2015 07:03	WG813362
1,2-Dichlorobenzene	U		0.349	1.00	1	09/04/2015 07:03	WG813362
1,3-Dichlorobenzene	U		0.220	1.00	1	09/04/2015 07:03	WG813362
1,4-Dichlorobenzene	U		0.274	1.00	1	09/04/2015 07:03	WG813362
Dichlorodifluoromethane	U		0.551	5.00	1	09/04/2015 07:03	WG813362
1,1-Dichloroethane	U		0.259	1.00	1	09/04/2015 07:03	WG813362
1,2-Dichloroethane	U		0.361	1.00	1	09/04/2015 07:03	WG813362
1,1-Dichloroethene	U		0.398	1.00	1	09/04/2015 07:03	WG813362
cis-1,2-Dichloroethene	U		0.260	1.00	1	09/04/2015 07:03	WG813362
trans-1,2-Dichloroethene	U		0.396	1.00	1	09/04/2015 07:03	WG813362
1,2-Dichloropropane	U		0.306	1.00	1	09/04/2015 07:03	WG813362
1,1-Dichloropropene	U		0.352	1.00	1	09/04/2015 07:03	WG813362
1,3-Dichloropropane	U		0.366	1.00	1	09/04/2015 07:03	WG813362
cis-1,3-Dichloropropene	U		0.418	1.00	1	09/04/2015 07:03	WG813362
trans-1,3-Dichloropropene	U		0.419	1.00	1	09/04/2015 07:03	WG813362
2,2-Dichloropropane	U		0.321	1.00	1	09/04/2015 07:03	WG813362
Di-isopropyl ether	U		0.320	1.00	1	09/04/2015 07:03	WG813362
Ethylbenzene	U		0.384	1.00	1	09/04/2015 07:03	WG813362
Hexachloro-1,3-butadiene	U		0.256	1.00	1	09/04/2015 07:03	WG813362
Isopropylbenzene	U		0.326	1.00	1	09/04/2015 07:03	WG813362
p-Isopropyltoluene	U		0.350	1.00	1	09/04/2015 07:03	WG813362
2-Butanone (MEK)	U		3.93	10.0	1	09/04/2015 07:03	WG813362
Methylene Chloride	U		1.00	5.00	1	09/04/2015 07:03	WG813362
4-Methyl-2-pentanone (MIBK)	U		2.14	10.0	1	09/04/2015 07:03	WG813362
Methyl tert-butyl ether	U		0.367	1.00	1	09/04/2015 07:03	WG813362
Naphthalene	U		1.00	5.00	1	09/04/2015 07:03	WG813362
n-Propylbenzene	U		0.349	1.00	1	09/04/2015 07:03	WG813362
Styrene	U		0.307	1.00	1	09/04/2015 07:03	WG813362
1,1,1,2-Tetrachloroethane	U		0.385	1.00	1	09/04/2015 07:03	WG813362
1,1,2,2-Tetrachloroethane	U		0.130	1.00	1	09/04/2015 07:03	WG813362
1,1,2-Trichlorotrifluoroethane	U		0.303	1.00	1	09/04/2015 07:03	WG813362
Tetrachloroethene	U		0.372	1.00	1	09/04/2015 07:03	WG813362
Toluene	U		0.780	5.00	1	09/04/2015 07:03	WG813362

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,2,3-Trichlorobenzene	U		0.230	1.00	1	09/04/2015 07:03	WG813362
1,2,4-Trichlorobenzene	U		0.355	1.00	1	09/04/2015 07:03	WG813362
1,1,1-Trichloroethane	U		0.319	1.00	1	09/04/2015 07:03	WG813362
1,1,2-Trichloroethane	U		0.383	1.00	1	09/04/2015 07:03	WG813362
Trichloroethene	U		0.398	1.00	1	09/04/2015 07:03	WG813362
Trichlorofluoromethane	U		1.20	5.00	1	09/04/2015 07:03	WG813362
1,2,3-Trichloropropane	U		0.807	2.50	1	09/04/2015 07:03	WG813362
1,2,4-Trimethylbenzene	U		0.373	1.00	1	09/04/2015 07:03	WG813362
1,2,3-Trimethylbenzene	U		0.321	1.00	1	09/04/2015 07:03	WG813362
1,3,5-Trimethylbenzene	U		0.387	1.00	1	09/04/2015 07:03	WG813362
Vinyl chloride	U		0.259	1.00	1	09/04/2015 07:03	WG813362
Xylenes, Total	U		1.06	3.00	1	09/04/2015 07:03	WG813362
(S) Toluene-d8	*103*			*90.0-115*		*09/04/2015 07:03*	WG813362
(S) Dibromofluoromethane	*98.1*			*79.0-121*		*09/04/2015 07:03*	WG813362
(S) 4-Bromofluorobenzene	*99.5*			*80.1-120*		*09/04/2015 07:03*	WG813362

Semi-Volatile Organic Compounds (GC) by Method 3511/8015

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
C12-C22 Hydrocarbons	199		33.0	100	1	09/03/2015 17:23	WG813116
C22-C32 Hydrocarbons	198		33.0	100	1	09/19/2015 05:27	WG813116
C32-C40 Hydrocarbons	82.0	J	33.0	100	1	09/19/2015 05:27	WG813116
(S) o-Terphenyl	*104*			*50.0-150*		*09/03/2015 17:23*	WG813116

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TPH (GC/MS) Low Fraction	U	J3	108	500	1	09/04/2015 11:59	WG813362
Acetone	U		10.0	50.0	1	09/04/2015 11:59	WG813362
Acrolein	U		8.87	50.0	1	09/04/2015 11:59	WG813362
Acrylonitrile	U		1.87	10.0	1	09/04/2015 11:59	WG813362
Benzene	U		0.331	1.00	1	09/04/2015 11:59	WG813362
Bromobenzene	U		0.352	1.00	1	09/04/2015 11:59	WG813362
Bromodichloromethane	U		0.380	1.00	1	09/04/2015 11:59	WG813362
Bromoform	U		0.469	1.00	1	09/04/2015 11:59	WG813362
Bromomethane	U		0.866	5.00	1	09/04/2015 11:59	WG813362
n-Butylbenzene	U		0.361	1.00	1	09/04/2015 11:59	WG813362
sec-Butylbenzene	U		0.365	1.00	1	09/04/2015 11:59	WG813362
tert-Butylbenzene	0.976	J	0.399	1.00	1	09/04/2015 11:59	WG813362
Carbon tetrachloride	U		0.379	1.00	1	09/04/2015 11:59	WG813362
Chlorobenzene	U		0.348	1.00	1	09/04/2015 11:59	WG813362
Chlorodibromomethane	U		0.327	1.00	1	09/04/2015 11:59	WG813362
Chloroethane	U		0.453	5.00	1	09/04/2015 11:59	WG813362
2-Chloroethyl vinyl ether	U		3.01	50.0	1	09/04/2015 11:59	WG813362
Chloroform	U		0.324	5.00	1	09/04/2015 11:59	WG813362
Chloromethane	U		0.276	2.50	1	09/04/2015 11:59	WG813362
2-Chlorotoluene	U		0.375	1.00	1	09/04/2015 11:59	WG813362
4-Chlorotoluene	U		0.351	1.00	1	09/04/2015 11:59	WG813362
1,2-Dibromo-3-Chloropropane	U		1.33	5.00	1	09/04/2015 11:59	WG813362
1,2-Dibromoethane	U		0.381	1.00	1	09/04/2015 11:59	WG813362
Dibromomethane	U		0.346	1.00	1	09/04/2015 11:59	WG813362
1,2-Dichlorobenzene	1.43		0.349	1.00	1	09/04/2015 11:59	WG813362
1,3-Dichlorobenzene	U		0.220	1.00	1	09/04/2015 11:59	WG813362
1,4-Dichlorobenzene	U		0.274	1.00	1	09/04/2015 11:59	WG813362
Dichlorodifluoromethane	U		0.551	5.00	1	09/04/2015 11:59	WG813362
1,1-Dichloroethane	U		0.259	1.00	1	09/04/2015 11:59	WG813362
1,2-Dichloroethane	U		0.361	1.00	1	09/04/2015 11:59	WG813362
1,1-Dichloroethene	U		0.398	1.00	1	09/04/2015 11:59	WG813362
cis-1,2-Dichloroethene	U		0.260	1.00	1	09/04/2015 11:59	WG813362
trans-1,2-Dichloroethene	U		0.396	1.00	1	09/04/2015 11:59	WG813362
1,2-Dichloropropane	U		0.306	1.00	1	09/04/2015 11:59	WG813362
1,1-Dichloropropene	U		0.352	1.00	1	09/04/2015 11:59	WG813362
1,3-Dichloropropane	U		0.366	1.00	1	09/04/2015 11:59	WG813362
cis-1,3-Dichloropropene	U		0.418	1.00	1	09/04/2015 11:59	WG813362
trans-1,3-Dichloropropene	U		0.419	1.00	1	09/04/2015 11:59	WG813362
2,2-Dichloropropane	U		0.321	1.00	1	09/04/2015 11:59	WG813362
Di-isopropyl ether	U		0.320	1.00	1	09/04/2015 11:59	WG813362
Ethylbenzene	0.612	J	0.384	1.00	1	09/04/2015 11:59	WG813362
Hexachloro-1,3-butadiene	U		0.256	1.00	1	09/04/2015 11:59	WG813362
Isopropylbenzene	0.563	J	0.326	1.00	1	09/04/2015 11:59	WG813362
p-Isopropyltoluene	0.787	J	0.350	1.00	1	09/04/2015 11:59	WG813362
2-Butanone (MEK)	U		3.93	10.0	1	09/04/2015 11:59	WG813362
Methylene Chloride	U		1.00	5.00	1	09/04/2015 11:59	WG813362
4-Methyl-2-pentanone (MIBK)	U		2.14	10.0	1	09/04/2015 11:59	WG813362
Methyl tert-butyl ether	U		0.367	1.00	1	09/04/2015 11:59	WG813362
Naphthalene	U		1.00	5.00	1	09/04/2015 11:59	WG813362
n-Propylbenzene	0.948	J	0.349	1.00	1	09/04/2015 11:59	WG813362
Styrene	U		0.307	1.00	1	09/04/2015 11:59	WG813362
1,1,1,2-Tetrachloroethane	U		0.385	1.00	1	09/04/2015 11:59	WG813362
1,1,2,2-Tetrachloroethane	U		0.130	1.00	1	09/04/2015 11:59	WG813362
1,1,2-Trichlorotrifluoroethane	U		0.303	1.00	1	09/04/2015 11:59	WG813362
Tetrachloroethene	U		0.372	1.00	1	09/04/2015 11:59	WG813362
Toluene	U		0.780	5.00	1	09/04/2015 11:59	WG813362

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,2,3-Trichlorobenzene	U		0.230	1.00	1	09/04/2015 11:59	WG813362
1,2,4-Trichlorobenzene	U		0.355	1.00	1	09/04/2015 11:59	WG813362
1,1,1-Trichloroethane	U		0.319	1.00	1	09/04/2015 11:59	WG813362
1,1,2-Trichloroethane	U		0.383	1.00	1	09/04/2015 11:59	WG813362
Trichloroethene	U		0.398	1.00	1	09/04/2015 11:59	WG813362
Trichlorofluoromethane	U		1.20	5.00	1	09/04/2015 11:59	WG813362
1,2,3-Trichloropropane	U		0.807	2.50	1	09/04/2015 11:59	WG813362
1,2,4-Trimethylbenzene	7.15		0.373	1.00	1	09/04/2015 11:59	WG813362
1,2,3-Trimethylbenzene	0.490	J	0.321	1.00	1	09/04/2015 11:59	WG813362
1,3,5-Trimethylbenzene	3.39		0.387	1.00	1	09/04/2015 11:59	WG813362
Vinyl chloride	U		0.259	1.00	1	09/04/2015 11:59	WG813362
Xylenes, Total	1.51	J	1.06	3.00	1	09/04/2015 11:59	WG813362
(S) Toluene-d8	*102*			*90.0-115*		*09/04/2015 11:59*	WG813362
(S) Dibromofluoromethane	*95.9*			*79.0-121*		*09/04/2015 11:59*	WG813362
(S) 4-Bromofluorobenzene	*102*			*80.1-120*		*09/04/2015 11:59*	WG813362

Semi-Volatile Organic Compounds (GC) by Method 3511/8015

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
C12-C22 Hydrocarbons	320		33.0	100	1	09/03/2015 21:15	WG813116
C22-C32 Hydrocarbons	121		33.0	100	1	09/19/2015 05:45	WG813116
C32-C40 Hydrocarbons	35.7	J	33.0	100	1	09/19/2015 05:45	WG813116
(S) o-Terphenyl	*104*			*50.0-150*		*09/03/2015 21:15*	WG813116

Method Blank (MB)

(MB) 09/02/15 07:46

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	%		%	%
Total Solids	0.000100			

L786201-03 Original Sample (OS) • Duplicate (DUP)

(OS) 09/02/15 07:53 • (DUP) 09/02/15 07:54

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	%	%		%		%
Total Solids	79.0	78.2	1	1.04		5

Laboratory Control Sample (LCS)

(LCS) 09/02/15 07:50

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	%	%	%	%	
Total Solids	50.0	50.0	100	85.0-115	

Method Blank (MB)

(MB) 09/04/15 04:48

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
TPH (GC/MS) Low Fraction	U		0.108	0.500
Acetone	U		0.0100	0.0500
Acrolein	U		0.00887	0.0500
Acrylonitrile	U		0.00187	0.0100
Benzene	U		0.000331	0.00100
Bromobenzene	U		0.000352	0.00100
Bromodichloromethane	U		0.000380	0.00100
Bromoform	U		0.000469	0.00100
Bromomethane	U		0.000866	0.00500
n-Butylbenzene	U		0.000361	0.00100
sec-Butylbenzene	U		0.000365	0.00100
tert-Butylbenzene	U		0.000399	0.00100
Carbon tetrachloride	U		0.000379	0.00100
Chlorobenzene	U		0.000348	0.00100
Chlorodibromomethane	U		0.000327	0.00100
Chloroethane	U		0.000453	0.00500
2-Chloroethyl vinyl ether	U		0.00301	0.0500
Chloroform	U		0.000324	0.00500
Chloromethane	U		0.000276	0.00250
2-Chlorotoluene	U		0.000375	0.00100
4-Chlorotoluene	U		0.000351	0.00100
1,2-Dibromo-3-Chloropropane	U		0.00133	0.00500
1,2-Dibromoethane	U		0.000381	0.00100
Dibromomethane	U		0.000346	0.00100
1,2-Dichlorobenzene	U		0.000349	0.00100
1,3-Dichlorobenzene	U		0.000220	0.00100
1,4-Dichlorobenzene	U		0.000274	0.00100
Dichlorodifluoromethane	U		0.000551	0.00500
1,1-Dichloroethane	U		0.000259	0.00100
1,2-Dichloroethane	U		0.000361	0.00100
1,1-Dichloroethene	U		0.000398	0.00100
cis-1,2-Dichloroethene	U		0.000260	0.00100
trans-1,2-Dichloroethene	U		0.000396	0.00100
1,2-Dichloropropane	U		0.000306	0.00100
1,1-Dichloropropene	U		0.000352	0.00100
1,3-Dichloropropane	U		0.000366	0.00100

Method Blank (MB)

(MB) 09/04/15 04:48

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
cis-1,3-Dichloropropene	U		0.000418	0.00100
trans-1,3-Dichloropropene	U		0.000419	0.00100
2,2-Dichloropropane	U		0.000321	0.00100
Di-isopropyl ether	U		0.000320	0.00100
Ethylbenzene	U		0.000384	0.00100
Hexachloro-1,3-butadiene	U		0.000256	0.00100
Isopropylbenzene	U		0.000326	0.00100
p-Isopropyltoluene	U		0.000350	0.00100
2-Butanone (MEK)	U		0.00393	0.0100
Methylene Chloride	U		0.00100	0.00500
4-Methyl-2-pentanone (MIBK)	U		0.00214	0.0100
Methyl tert-butyl ether	U		0.000367	0.00100
Naphthalene	U		0.00100	0.00500
n-Propylbenzene	U		0.000349	0.00100
Styrene	U		0.000307	0.00100
1,1,1,2-Tetrachloroethane	U		0.000385	0.00100
1,1,2,2-Tetrachloroethane	U		0.000130	0.00100
Tetrachloroethene	U		0.000372	0.00100
Toluene	U		0.000780	0.00500
1,1,2-Trichlorotrifluoroethane	U		0.000303	0.00100
1,2,3-Trichlorobenzene	U		0.000230	0.00100
1,2,4-Trichlorobenzene	U		0.000355	0.00100
1,1,1-Trichloroethane	U		0.000319	0.00100
1,1,2-Trichloroethane	U		0.000383	0.00100
Trichloroethene	U		0.000398	0.00100
Trichlorofluoromethane	U		0.00120	0.00500
1,2,3-Trichloropropane	U		0.000807	0.00250
1,2,3-Trimethylbenzene	U		0.000321	0.00100
1,2,4-Trimethylbenzene	U		0.000373	0.00100
1,3,5-Trimethylbenzene	U		0.000387	0.00100
Vinyl chloride	U		0.000259	0.00100
Xylenes, Total	U		0.00106	0.00300
(S) Toluene-d8	*104*			*90.0-115*
(S) Dibromofluoromethane	*97.0*			*79.0-121*
(S) 4-Bromofluorobenzene	*96.3*			*80.1-120*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 09/04/15 02:08 • (LCSD) 09/04/15 02:29

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Acetone	0.125	0.107	0.112	85.5	89.4	28.7-175			4.46	20.9
Acrolein	0.125	0.128	0.138	102	111	40.4-172			7.65	20
Acrylonitrile	0.125	0.118	0.117	94.8	93.5	58.2-145			1.32	20
Benzene	0.0250	0.0252	0.0258	101	103	73.0-122			2.07	20
Bromobenzene	0.0250	0.0262	0.0266	105	106	81.5-115			1.23	20
Bromodichloromethane	0.0250	0.0261	0.0274	105	110	75.5-121			4.75	20
Bromoform	0.0250	0.0276	0.0275	111	110	71.5-131			0.650	20
Bromomethane	0.0250	0.0269	0.0273	108	109	22.4-187			1.28	20
n-Butylbenzene	0.0250	0.0271	0.0290	108	116	75.9-134			6.86	20
sec-Butylbenzene	0.0250	0.0284	0.0283	114	113	80.6-126			0.230	20
tert-Butylbenzene	0.0250	0.0277	0.0275	111	110	79.3-127			0.560	20
Carbon tetrachloride	0.0250	0.0285	0.0287	114	115	70.9-129			0.740	20
Chlorobenzene	0.0250	0.0279	0.0273	112	109	79.7-122			2.45	20
Chlorodibromomethane	0.0250	0.0270	0.0268	108	107	78.2-124			0.800	20
Chloroethane	0.0250	0.0286	0.0294	114	118	41.2-153			2.74	20
2-Chloroethyl vinyl ether	0.125	0.117	0.122	93.2	97.6	23.4-162			4.54	23.5
Chloroform	0.0250	0.0249	0.0256	99.4	103	73.2-125			3.14	20
Chloromethane	0.0250	0.0260	0.0259	104	104	55.8-134			0.220	20
2-Chlorotoluene	0.0250	0.0276	0.0280	110	112	76.4-125			1.56	20
4-Chlorotoluene	0.0250	0.0278	0.0280	111	112	81.5-121			0.620	20
1,2-Dibromo-3-Chloropropane	0.0250	0.0239	0.0250	95.5	100	64.8-131			4.60	20
1,2-Dibromoethane	0.0250	0.0257	0.0262	103	105	79.8-122			1.96	20
Dibromomethane	0.0250	0.0248	0.0254	99.2	101	79.5-118			2.23	20
1,2-Dichlorobenzene	0.0250	0.0256	0.0273	102	109	84.7-118			6.42	20
1,3-Dichlorobenzene	0.0250	0.0284	0.0285	114	114	77.6-127			0.210	20
1,4-Dichlorobenzene	0.0250	0.0242	0.0254	96.8	102	82.2-114			4.83	20
Dichlorodifluoromethane	0.0250	0.0270	0.0273	108	109	56.0-134			1.14	20
1,1-Dichloroethane	0.0250	0.0248	0.0251	99.4	101	71.7-127			1.20	20
1,2-Dichloroethane	0.0250	0.0245	0.0249	97.9	99.6	65.3-126			1.70	20
1,1-Dichloroethene	0.0250	0.0276	0.0280	110	112	59.9-137			1.54	20
cis-1,2-Dichloroethene	0.0250	0.0248	0.0252	99.0	101	77.3-122			1.64	20
trans-1,2-Dichloroethene	0.0250	0.0255	0.0257	102	103	72.6-125			0.800	20
1,2-Dichloropropane	0.0250	0.0263	0.0271	105	109	77.4-125			3.10	20
1,1-Dichloropropene	0.0250	0.0261	0.0264	104	105	72.5-127			1.05	20
1,3-Dichloropropane	0.0250	0.0248	0.0245	99.2	98.2	80.6-115			1.04	20
cis-1,3-Dichloropropene	0.0250	0.0274	0.0269	110	107	77.7-124			2.11	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 09/04/15 02:08 • (LCSD) 09/04/15 02:29

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
trans-1,3-Dichloropropene	0.0250	0.0271	0.0278	108	111	73.5-127			2.65	20
2,2-Dichloropropane	0.0250	0.0295	0.0310	118	124	61.3-134			5.13	20
Di-isopropyl ether	0.0250	0.0256	0.0258	102	103	65.1-135			0.630	20
Ethylbenzene	0.0250	0.0285	0.0286	114	114	80.9-121			0.390	20
Hexachloro-1,3-butadiene	0.0250	0.0274	0.0283	110	113	73.7-133			3.14	20
Isopropylbenzene	0.0250	0.0277	0.0277	111	111	81.6-124			0.300	20
p-Isopropyltoluene	0.0250	0.0291	0.0294	116	118	77.6-129			1.17	20
2-Butanone (MEK)	0.125	0.106	0.114	84.9	91.5	46.4-155			7.51	20
Methylene Chloride	0.0250	0.0241	0.0249	96.4	99.4	69.5-120			3.03	20
4-Methyl-2-pentanone (MIBK)	0.125	0.121	0.131	96.8	105	63.3-138			7.73	20
Methyl tert-butyl ether	0.0250	0.0261	0.0265	104	106	70.1-125			1.78	20
Naphthalene	0.0250	0.0247	0.0271	98.9	108	69.7-134			9.09	20
n-Propylbenzene	0.0250	0.0276	0.0276	110	110	81.9-122			0.0700	20
Styrene	0.0250	0.0275	0.0278	110	111	79.9-124			0.850	20
1,1,1,2-Tetrachloroethane	0.0250	0.0272	0.0267	109	107	78.5-125			1.91	20
1,1,2,2-Tetrachloroethane	0.0250	0.0262	0.0264	105	106	79.3-123			0.950	20
Tetrachloroethene	0.0250	0.0278	0.0278	111	111	73.5-130			0.0200	20
Toluene	0.0250	0.0263	0.0262	105	105	77.9-116			0.230	20
1,1,2-Trichlorotrifluoroethane	0.0250	0.0284	0.0287	114	115	62.0-141			1.23	20
1,2,3-Trichlorobenzene	0.0250	0.0264	0.0292	106	117	75.7-134			10.1	20
1,2,4-Trichlorobenzene	0.0250	0.0281	0.0302	112	121	76.1-136			7.17	20
1,1,1-Trichloroethane	0.0250	0.0270	0.0283	108	113	71.1-129			4.77	20
1,1,2-Trichloroethane	0.0250	0.0263	0.0263	105	105	81.6-120			0.220	20
Trichloroethene	0.0250	0.0267	0.0269	107	108	79.5-121			0.560	20
Trichlorofluoromethane	0.0250	0.0297	0.0307	119	123	49.1-157			3.23	20
1,2,3-Trichloropropane	0.0250	0.0259	0.0278	104	111	74.9-124			7.09	20
1,2,3-Trimethylbenzene	0.0250	0.0254	0.0268	102	107	79.9-118			5.54	20
1,2,4-Trimethylbenzene	0.0250	0.0285	0.0281	114	113	79.0-122			1.21	20
1,3,5-Trimethylbenzene	0.0250	0.0277	0.0280	111	112	81.0-123			1.01	20
Vinyl chloride	0.0250	0.0281	0.0282	112	113	61.5-134			0.660	20
Xylenes, Total	0.0750	0.0857	0.0837	114	112	79.2-122			2.41	20
(S) Toluene-d8				*107*	*108*	*90.0-115*				
(S) Dibromofluoromethane				*96.0*	*97.9*	*79.0-121*				
(S) 4-Bromofluorobenzene				*108*	*103*	*80.1-120*				

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 09/04/15 03:24 • (LCSD) 09/04/15 03:45

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
TPH (GC/MS) Low Fraction	5.00	3.67	4.51	73.4	90.3	62.3-131		J3	20.6	20
(S) Toluene-d8				*105*	*103*	*90.0-115*				
(S) Dibromofluoromethane				*96.4*	*94.2*	*79.0-121*				
(S) 4-Bromofluorobenzene				*102*	*104*	*80.1-120*				

L786006-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 09/04/15 07:03 • (MS) 09/04/15 05:18 • (MSD) 09/04/15 05:39

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Acetone	0.125	0.00388	0.120	0.105	92.9	80.8	1	25.0-156			13.5	21.5
Acrolein	0.125	ND	0.155	0.145	124	116	1	34.0-194			6.77	21.5
Acrylonitrile	0.125	ND	0.135	0.125	108	100	1	55.9-161			7.12	20
Benzene	0.0250	ND	0.0244	0.0253	97.7	101	1	58.6-133			3.53	20
Bromobenzene	0.0250	ND	0.0257	0.0261	103	105	1	70.6-125			1.91	20
Bromodichloromethane	0.0250	ND	0.0262	0.0268	105	107	1	69.2-127			2.34	20
Bromoform	0.0250	ND	0.0271	0.0275	108	110	1	66.3-140			1.36	20
Bromomethane	0.0250	ND	0.0245	0.0251	98.1	100	1	16.6-183			2.39	20.5
n-Butylbenzene	0.0250	ND	0.0269	0.0282	107	113	1	64.8-145			4.91	20
sec-Butylbenzene	0.0250	ND	0.0270	0.0282	108	113	1	66.8-139			4.67	20
tert-Butylbenzene	0.0250	0.000331	0.0274	0.0280	108	111	1	67.1-138			2.10	20
Carbon tetrachloride	0.0250	ND	0.0263	0.0278	105	111	1	60.6-139			5.75	20
Chlorobenzene	0.0250	ND	0.0267	0.0272	107	109	1	70.1-130			1.80	20
Chlorodibromomethane	0.0250	ND	0.0266	0.0270	107	108	1	71.6-132			1.41	20
Chloroethane	0.0250	ND	0.0257	0.0276	103	110	1	33.3-155			7.20	20
2-Chloroethyl vinyl ether	0.125	ND	0.124	0.115	99.1	92.0	1	5.00-149			7.39	40
Chloroform	0.0250	ND	0.0245	0.0248	98.1	99.3	1	66.1-133			1.21	20
Chloromethane	0.0250	ND	0.0236	0.0241	94.4	96.3	1	40.7-139			1.95	20
2-Chlorotoluene	0.0250	ND	0.0260	0.0267	104	107	1	66.9-134			2.75	20
4-Chlorotoluene	0.0250	ND	0.0264	0.0279	106	111	1	66.8-134			5.45	20
1,2-Dibromo-3-Chloropropane	0.0250	ND	0.0260	0.0265	104	106	1	63.9-142			1.69	20.2
1,2-Dibromoethane	0.0250	ND	0.0257	0.0255	103	102	1	73.8-131			0.570	20
Dibromomethane	0.0250	ND	0.0259	0.0243	103	97.4	1	72.8-127			6.03	20
1,2-Dichlorobenzene	0.0250	ND	0.0264	0.0272	105	109	1	77.4-127			3.15	20
1,3-Dichlorobenzene	0.0250	ND	0.0273	0.0286	109	115	1	67.9-136			4.75	20
1,4-Dichlorobenzene	0.0250	ND	0.0243	0.0250	97.1	99.9	1	74.4-123			2.88	20

L786006-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 09/04/15 07:03 • (MS) 09/04/15 05:18 • (MSD) 09/04/15 05:39

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Dichlorodifluoromethane	0.0250	ND	0.0249	0.0269	99.7	108	1	42.2-146			7.58	20
1,1-Dichloroethane	0.0250	ND	0.0247	0.0254	98.6	102	1	64.0-134			3.16	20
1,2-Dichloroethane	0.0250	ND	0.0251	0.0249	100	99.6	1	60.7-132			0.760	20
1,1-Dichloroethene	0.0250	ND	0.0253	0.0263	101	105	1	48.8-144			3.97	20
cis-1,2-Dichloroethene	0.0250	ND	0.0247	0.0252	98.8	101	1	60.6-136			2.10	20
trans-1,2-Dichloroethene	0.0250	ND	0.0242	0.0247	96.7	98.7	1	61.0-132			1.97	20
1,2-Dichloropropane	0.0250	ND	0.0259	0.0262	104	105	1	69.7-130			1.11	20
1,1-Dichloropropene	0.0250	ND	0.0259	0.0260	104	104	1	61.5-136			0.330	20
1,3-Dichloropropane	0.0250	ND	0.0247	0.0249	99.0	99.5	1	74.3-123			0.540	20
cis-1,3-Dichloropropene	0.0250	ND	0.0269	0.0268	108	107	1	71.1-129			0.610	20
trans-1,3-Dichloropropene	0.0250	ND	0.0269	0.0272	108	109	1	66.3-136			1.06	20
2,2-Dichloropropane	0.0250	ND	0.0269	0.0295	108	118	1	54.9-142			8.93	20
Di-isopropyl ether	0.0250	ND	0.0251	0.0259	100	104	1	59.9-140			3.17	20
Ethylbenzene	0.0250	ND	0.0263	0.0271	105	108	1	62.7-136			2.91	20
Hexachloro-1,3-butadiene	0.0250	ND	0.0243	0.0286	97.3	114	1	61.1-144			16.1	20.1
Isopropylbenzene	0.0250	ND	0.0263	0.0275	105	110	1	67.4-136			4.37	20
p-Isopropyltoluene	0.0250	ND	0.0276	0.0290	111	116	1	62.8-143			4.82	20
2-Butanone (MEK)	0.125	0.000866	0.127	0.112	101	88.9	1	45.0-156			12.2	20.8
Methylene Chloride	0.0250	0.000713	0.0238	0.0243	92.5	94.3	1	61.5-125			1.86	20
4-Methyl-2-pentanone (MIBK)	0.125	ND	0.138	0.130	110	104	1	60.7-150			5.35	20
Methyl tert-butyl ether	0.0250	ND	0.0259	0.0260	104	104	1	61.4-136			0.250	20
Naphthalene	0.0250	ND	0.0269	0.0276	108	111	1	61.8-143			2.61	20
n-Propylbenzene	0.0250	ND	0.0263	0.0273	105	109	1	63.2-139			3.84	20
Styrene	0.0250	ND	0.0265	0.0268	106	107	1	68.2-133			0.940	20
1,1,1,2-Tetrachloroethane	0.0250	ND	0.0259	0.0271	103	108	1	70.5-132			4.70	20
1,1,2,2-Tetrachloroethane	0.0250	ND	0.0288	0.0277	115	111	1	64.9-145			3.63	20
Tetrachloroethene	0.0250	ND	0.0264	0.0266	105	106	1	57.4-141			0.930	20
Toluene	0.0250	0.000347	0.0252	0.0256	99.5	101	1	67.8-124			1.38	20
1,1,2-Trichlorotrifluoroethane	0.0250	ND	0.0265	0.0272	106	109	1	53.7-150			2.63	20
1,2,3-Trichlorobenzene	0.0250	ND	0.0266	0.0287	106	115	1	65.7-143			7.72	20
1,2,4-Trichlorobenzene	0.0250	ND	0.0286	0.0303	114	121	1	67.0-146			5.80	20
1,1,1-Trichloroethane	0.0250	ND	0.0263	0.0271	105	108	1	58.7-134			3.06	20
1,1,2-Trichloroethane	0.0250	ND	0.0275	0.0270	110	108	1	74.1-130			1.99	20
Trichloroethene	0.0250	ND	0.0258	0.0261	103	104	1	48.9-148			1.42	20
Trichlorofluoromethane	0.0250	ND	0.0292	0.0300	117	120	1	39.9-165			2.67	20
1,2,3-Trichloropropane	0.0250	ND	0.0280	0.0261	112	105	1	71.5-134			7.07	20

L786006-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 09/04/15 07:03 • (MS) 09/04/15 05:18 • (MSD) 09/04/15 05:39

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
1,2,3-Trimethylbenzene	0.0250	ND	0.0254	0.0268	102	107	1	62.7-133			5.36	20
1,2,4-Trimethylbenzene	0.0250	ND	0.0265	0.0275	106	110	1	60.5-137			3.80	20
1,3,5-Trimethylbenzene	0.0250	ND	0.0260	0.0273	104	109	1	67.9-134			4.86	20
Vinyl chloride	0.0250	ND	0.0256	0.0265	102	106	1	44.3-143			3.39	20
Xylenes, Total	0.0750	ND	0.0813	0.0837	108	112	1	65.6-133			3.01	20
(S) Toluene-d8					*105*	*104*		*90.0-115*				
(S) Dibromofluoromethane					*96.6*	*97.4*		*79.0-121*				
(S) 4-Bromofluorobenzene					*100*	*104*		*80.1-120*				

L786006-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 09/04/15 07:03 • (MS) 09/04/15 06:00 • (MSD) 09/04/15 06:21

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPH (GC/MS) Low Fraction	5.00	ND	3.73	3.46	74.6	69.2	1	44.3-147			7.51	20
(S) Toluene-d8					*105*	*104*		*90.0-115*				
(S) Dibromofluoromethane					*100*	*97.6*		*79.0-121*				
(S) 4-Bromofluorobenzene					*103*	*100*		*80.1-120*				

Method Blank (MB)

(MB) 09/07/15 00:47

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/MS) Low Fraction	U		0.183	0.500
(S) Toluene-d8	*105*			*88.7-115*
(S) 4-Bromofluorobenzene	*107*			*69.7-129*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 09/06/15 21:11 • (LCSD) 09/06/15 21:35

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
TPH (GC/MS) Low Fraction	5.00	5.32	5.39	106	108	61.5-138			1.20	20
(S) Toluene-d8				*101*	*101*	*88.7-115*				
(S) Dibromofluoromethane				*88.5*	*87.5*	*76.3-123*				
(S) 4-Bromofluorobenzene				*113*	*106*	*69.7-129*				

L786006-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 09/07/15 02:42 • (MS) 09/06/15 22:47 • (MSD) 09/06/15 23:11

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPH (GC/MS) Low Fraction	5.00	ND	12.5	11.7	50.1	46.9	5	10.0-147			6.72	26.4
(S) Toluene-d8					*102*	*103*		*88.7-115*				
(S) Dibromofluoromethane					*93.7*	*86.2*		*76.3-123*				
(S) 4-Bromofluorobenzene					*101*	*99.8*		*69.7-129*				

Method Blank (MB)

(MB) 09/10/15 08:39

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acetone	U		0.0100	0.0500
Acrylonitrile	U		0.00179	0.0100
Benzene	U		0.000270	0.00100
Bromobenzene	U		0.000284	0.00100
Bromodichloromethane	U		0.000254	0.00100
Bromoform	U		0.000424	0.00100
Bromomethane	U		0.00134	0.00500
n-Butylbenzene	U		0.000258	0.00100
sec-Butylbenzene	U		0.000201	0.00100
tert-Butylbenzene	U		0.000206	0.00100
Carbon tetrachloride	U		0.000328	0.00100
Chlorobenzene	U		0.000212	0.00100
Chlorodibromomethane	U		0.000373	0.00100
Chloroethane	U		0.000946	0.00500
2-Chloroethyl vinyl ether	U		0.00234	0.0500
Chloroform	U		0.000229	0.00500
Chloromethane	U		0.000375	0.00250
2-Chlorotoluene	U		0.000301	0.00100
4-Chlorotoluene	U		0.000240	0.00100
1,2-Dibromo-3-Chloropropane	U		0.00105	0.00500
1,2-Dibromoethane	U		0.000343	0.00100
Dibromomethane	U		0.000382	0.00100
1,2-Dichlorobenzene	U		0.000305	0.00100
1,3-Dichlorobenzene	U		0.000239	0.00100
1,4-Dichlorobenzene	U		0.000226	0.00100
Dichlorodifluoromethane	U		0.000713	0.00500
1,1-Dichloroethane	U		0.000199	0.00100
1,2-Dichloroethane	U		0.000265	0.00100
1,1-Dichloroethene	U		0.000303	0.00100
cis-1,2-Dichloroethene	U		0.000235	0.00100
trans-1,2-Dichloroethene	U		0.000264	0.00100
1,2-Dichloropropane	U		0.000358	0.00100
1,1-Dichloropropene	U		0.000317	0.00100
1,3-Dichloropropane	U		0.000207	0.00100
cis-1,3-Dichloropropene	U		0.000262	0.00100
trans-1,3-Dichloropropene	U		0.000267	0.00100

Method Blank (MB)

(MB) 09/10/15 08:39

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
2,2-Dichloropropane	U		0.000279	0.00100
Di-isopropyl ether	U		0.000248	0.00100
Ethylbenzene	U		0.000297	0.00100
Hexachloro-1,3-butadiene	U		0.000342	0.00100
Isopropylbenzene	U		0.000243	0.00100
p-Isopropyltoluene	U		0.000204	0.00100
2-Butanone (MEK)	U		0.00468	0.0100
Methylene Chloride	U		0.00100	0.00500
4-Methyl-2-pentanone (MIBK)	U		0.00188	0.0100
Methyl tert-butyl ether	U		0.000212	0.00100
Naphthalene	U		0.00100	0.00500
n-Propylbenzene	U		0.000206	0.00100
Styrene	U		0.000234	0.00100
1,1,1,2-Tetrachloroethane	U		0.000264	0.00100
1,1,2,2-Tetrachloroethane	U		0.000365	0.00100
Tetrachloroethene	U		0.000276	0.00100
Toluene	U		0.000434	0.00500
1,1,2-Trichlorotrifluoroethane	U		0.000365	0.00100
1,2,3-Trichlorobenzene	0.000494		0.000306	0.00100
1,2,4-Trichlorobenzene	U		0.000388	0.00100
1,1,1-Trichloroethane	U		0.000286	0.00100
1,1,2-Trichloroethane	U		0.000277	0.00100
Trichloroethene	U		0.000279	0.00100
Trichlorofluoromethane	U		0.000382	0.00500
1,2,3-Trichloropropane	U		0.000741	0.00250
1,2,3-Trimethylbenzene	U		0.000287	0.00100
1,2,4-Trimethylbenzene	U		0.000211	0.00100
1,3,5-Trimethylbenzene	U		0.000266	0.00100
Vinyl chloride	U		0.000291	0.00100
Xylenes, Total	U		0.000698	0.00300

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 09/10/15 07:19 • (LCSD) 09/10/15 07:39

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 09/10/15 07:19 • (LCSD) 09/10/15 07:39

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Acetone	0.125	0.194	0.219	155	175	25.3-178			11.9	22.9
Acrylonitrile	0.125	0.141	0.156	113	125	57.8-143			9.99	20
Benzene	0.0250	0.0250	0.0252	99.8	101	72.6-120			0.850	20
Bromobenzene	0.0250	0.0259	0.0263	104	105	80.3-115			1.49	20
Bromodichloromethane	0.0250	0.0246	0.0253	98.6	101	75.3-119			2.74	20
Bromoform	0.0250	0.0268	0.0294	107	117	69.1-135			9.22	20
Bromomethane	0.0250	0.0206	0.0204	82.3	81.8	23.0-191			0.690	20
n-Butylbenzene	0.0250	0.0282	0.0288	113	115	74.2-134			2.11	20
sec-Butylbenzene	0.0250	0.0267	0.0277	107	111	77.8-129			3.48	20
tert-Butylbenzene	0.0250	0.0266	0.0276	106	110	77.2-129			3.85	20
Carbon tetrachloride	0.0250	0.0272	0.0271	109	108	69.4-129			0.380	20
Chlorobenzene	0.0250	0.0255	0.0258	102	103	78.9-122			1.02	20
Chlorodibromomethane	0.0250	0.0262	0.0276	105	110	76.4-126			5.19	20
Chloroethane	0.0250	0.0248	0.0248	99.3	99.2	47.2-147			0.110	20
2-Chloroethyl vinyl ether	0.125	0.0889	0.0927	71.1	74.1	16.7-162			4.12	23.7
Chloroform	0.0250	0.0253	0.0258	101	103	73.3-122			1.95	20
Chloromethane	0.0250	0.0273	0.0274	109	110	53.1-135			0.360	20
2-Chlorotoluene	0.0250	0.0251	0.0256	100	102	74.6-127			2.07	20
4-Chlorotoluene	0.0250	0.0263	0.0267	105	107	79.5-123			1.51	20
1,2-Dibromo-3-Chloropropane	0.0250	0.0279	0.0298	112	119	64.9-131			6.69	20
1,2-Dibromoethane	0.0250	0.0261	0.0277	104	111	78.7-123			5.89	20
Dibromomethane	0.0250	0.0259	0.0270	104	108	78.5-117			4.13	20
1,2-Dichlorobenzene	0.0250	0.0275	0.0283	110	113	83.6-119			2.76	20
1,3-Dichlorobenzene	0.0250	0.0270	0.0279	108	112	75.9-129			3.41	20
1,4-Dichlorobenzene	0.0250	0.0269	0.0273	108	109	81.0-115			1.15	20
Dichlorodifluoromethane	0.0250	0.0250	0.0249	100	99.4	50.9-139			0.520	20
1,1-Dichloroethane	0.0250	0.0269	0.0271	108	108	71.7-125			0.650	20
1,2-Dichloroethane	0.0250	0.0257	0.0271	103	108	67.2-121			5.52	20
1,1-Dichloroethene	0.0250	0.0275	0.0273	110	109	60.6-133			0.650	20
cis-1,2-Dichloroethene	0.0250	0.0251	0.0254	100	102	76.1-121			1.20	20
trans-1,2-Dichloroethene	0.0250	0.0254	0.0254	102	101	70.7-124			0.170	20
1,2-Dichloropropane	0.0250	0.0265	0.0271	106	108	76.9-123			2.05	20
1,1-Dichloropropene	0.0250	0.0259	0.0263	104	105	71.2-126			1.40	20
1,3-Dichloropropane	0.0250	0.0254	0.0265	102	106	80.3-114			4.19	20
cis-1,3-Dichloropropene	0.0250	0.0260	0.0265	104	106	77.3-123			1.87	20
trans-1,3-Dichloropropene	0.0250	0.0255	0.0264	102	106	73.0-127			3.35	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 09/10/15 07:19 • (LCSD) 09/10/15 07:39

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
2,2-Dichloropropane	0.0250	0.0258	0.0264	103	106	61.9-132			2.47	20
Di-isopropyl ether	0.0250	0.0274	0.0280	110	112	67.2-131			2.08	20
Ethylbenzene	0.0250	0.0250	0.0253	100	101	78.6-124			1.07	20
Hexachloro-1,3-butadiene	0.0250	0.0295	0.0292	118	117	69.2-136			1.12	20
Isopropylbenzene	0.0250	0.0258	0.0265	103	106	79.4-126			2.85	20
p-Isopropyltoluene	0.0250	0.0271	0.0283	108	113	75.4-132			4.46	20
2-Butanone (MEK)	0.125	0.164	0.188	131	150	44.5-154			13.5	21.3
Methylene Chloride	0.0250	0.0240	0.0243	95.8	97.1	68.2-119			1.33	20
4-Methyl-2-pentanone (MIBK)	0.125	0.147	0.164	118	131	61.1-138			10.8	20
Methyl tert-butyl ether	0.0250	0.0253	0.0272	101	109	70.2-122			7.33	20
Naphthalene	0.0250	0.0280	0.0289	112	116	69.9-132			3.12	20
n-Propylbenzene	0.0250	0.0265	0.0273	106	109	80.2-124			2.94	20
Styrene	0.0250	0.0254	0.0257	102	103	79.4-124			1.33	20
1,1,1,2-Tetrachloroethane	0.0250	0.0267	0.0268	107	107	76.7-127			0.260	20
1,1,2,2-Tetrachloroethane	0.0250	0.0272	0.0297	109	119	78.8-124			8.60	20
Tetrachloroethene	0.0250	0.0259	0.0262	103	105	71.1-133			1.23	20
Toluene	0.0250	0.0240	0.0239	95.9	95.7	76.7-116			0.250	20
1,1,2-Trichlorotrifluoroethane	0.0250	0.0269	0.0270	108	108	62.6-138			0.320	20
1,2,3-Trichlorobenzene	0.0250	0.0280	0.0281	112	112	72.5-137			0.130	20
1,2,4-Trichlorobenzene	0.0250	0.0286	0.0288	114	115	74.0-137			0.540	20
1,1,1-Trichloroethane	0.0250	0.0261	0.0265	104	106	69.9-127			1.40	20
1,1,2-Trichloroethane	0.0250	0.0248	0.0260	99.2	104	81.9-119			4.68	20
Trichloroethene	0.0250	0.0257	0.0259	103	103	77.2-122			0.450	20
Trichlorofluoromethane	0.0250	0.0256	0.0256	102	103	51.5-151			0.160	20
1,2,3-Trichloropropane	0.0250	0.0278	0.0305	111	122	74.0-124			9.03	20
1,2,3-Trimethylbenzene	0.0250	0.0256	0.0265	103	106	79.4-118			3.17	20
1,2,4-Trimethylbenzene	0.0250	0.0254	0.0263	102	105	77.1-124			3.31	20
1,3,5-Trimethylbenzene	0.0250	0.0260	0.0268	104	107	79.0-125			2.92	20
Vinyl chloride	0.0250	0.0269	0.0270	108	108	58.4-134			0.530	20
Xylenes, Total	0.0750	0.0740	0.0749	98.6	99.9	78.1-123			1.31	20

L786793-09 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 09/10/15 11:22 • (MS) 09/10/15 11:42 • (MSD) 09/10/15 12:02

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %

L786793-09 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 09/10/15 11:22 • (MS) 09/10/15 11:42 • (MSD) 09/10/15 12:02

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Acetone	0.125	0.0237	0.159	0.178	109	123	1	10.0-130			11.1	31.5
Acrylonitrile	0.125	ND	0.118	0.128	94.4	102	1	39.3-152			8.16	27.2
Benzene	0.0250	0.00221	0.0241	0.0227	87.5	82.1	1	47.8-131			5.72	22.8
Bromobenzene	0.0250	ND	0.0232	0.0219	92.8	87.5	1	40.0-130			5.87	27.4
Bromodichloromethane	0.0250	ND	0.0237	0.0230	94.8	91.9	1	50.6-128			3.11	22.8
Bromoform	0.0250	ND	0.0234	0.0240	93.8	95.8	1	43.3-139			2.13	25.9
Bromomethane	0.0250	ND	0.0182	0.0189	72.8	75.5	1	5.00-189			3.66	26.7
n-Butylbenzene	0.0250	ND	0.0222	0.0209	88.7	83.8	1	23.6-146			5.72	39.2
sec-Butylbenzene	0.0250	ND	0.0223	0.0214	89.0	85.6	1	31.0-142			3.86	34.7
tert-Butylbenzene	0.0250	ND	0.0231	0.0224	92.4	89.6	1	36.9-142			3.08	31.7
Carbon tetrachloride	0.0250	ND	0.0253	0.0242	101	96.9	1	46.0-140			4.46	27.2
Chlorobenzene	0.0250	ND	0.0235	0.0221	93.9	88.4	1	44.1-134			6.01	25.7
Chlorodibromomethane	0.0250	ND	0.0243	0.0242	97.2	96.8	1	49.7-134			0.480	24
Chloroethane	0.0250	ND	0.0226	0.0225	90.5	90.1	1	5.00-164			0.430	28.4
2-Chloroethyl vinyl ether	0.125	ND	0.0791	0.0822	63.3	65.8	1	5.00-159			3.84	40
Chloroform	0.0250	ND	0.0244	0.0236	97.5	94.5	1	51.2-133			3.08	22.8
Chloromethane	0.0250	ND	0.0255	0.0252	102	101	1	31.4-141			0.920	24.6
2-Chlorotoluene	0.0250	ND	0.0218	0.0204	87.1	81.8	1	36.1-137			6.33	28.9
4-Chlorotoluene	0.0250	ND	0.0229	0.0216	91.5	86.6	1	35.4-137			5.53	29.8
1,2-Dibromo-3-Chloropropane	0.0250	ND	0.0217	0.0245	86.6	97.8	1	40.4-138			12.2	30.8
1,2-Dibromoethane	0.0250	ND	0.0235	0.0234	93.9	93.7	1	50.2-133			0.140	23.6
Dibromomethane	0.0250	ND	0.0241	0.0240	96.5	96.2	1	52.4-128			0.350	23
1,2-Dichlorobenzene	0.0250	ND	0.0236	0.0232	94.3	92.8	1	34.6-139			1.54	29.9
1,3-Dichlorobenzene	0.0250	ND	0.0224	0.0209	89.5	83.5	1	28.4-142			6.97	31.2
1,4-Dichlorobenzene	0.0250	ND	0.0229	0.0220	91.6	88.1	1	35.0-133			3.86	31.1
Dichlorodifluoromethane	0.0250	ND	0.0218	0.0218	87.1	87.2	1	31.2-144			0.120	30.2
1,1-Dichloroethane	0.0250	ND	0.0259	0.0250	104	99.8	1	49.1-136			3.87	22.9
1,2-Dichloroethane	0.0250	ND	0.0248	0.0244	99.2	97.4	1	47.1-129			1.83	22.7
1,1-Dichloroethene	0.0250	ND	0.0254	0.0244	102	97.6	1	36.1-142			4.14	25.6
cis-1,2-Dichloroethene	0.0250	ND	0.0239	0.0231	95.8	92.6	1	50.6-133			3.38	23
trans-1,2-Dichloroethene	0.0250	ND	0.0234	0.0229	93.7	91.5	1	43.8-135			2.36	24.8
1,2-Dichloropropane	0.0250	ND	0.0253	0.0246	101	98.4	1	50.3-134			2.64	22.7
1,1-Dichloropropene	0.0250	ND	0.0239	0.0227	95.8	91.0	1	43.0-137			5.11	26.4
1,3-Dichloropropane	0.0250	ND	0.0235	0.0238	93.9	95.1	1	51.4-127			1.34	23.1
cis-1,3-Dichloropropene	0.0250	ND	0.0242	0.0235	96.6	93.8	1	48.4-134			2.96	23.6
trans-1,3-Dichloropropene	0.0250	ND	0.0233	0.0230	93.1	92.1	1	46.6-135			1.05	25.3

L786793-09 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 09/10/15 11:22 • (MS) 09/10/15 11:42 • (MSD) 09/10/15 12:02

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
2,2-Dichloropropane	0.0250	ND	0.0248	0.0238	99.2	95.1	1	45.2-141			4.22	26.6
Di-isopropyl ether	0.0250	ND	0.0266	0.0260	107	104	1	46.7-140			2.47	23.5
Ethylbenzene	0.0250	0.000990	0.0230	0.0215	88.0	81.9	1	44.8-135			6.84	26.9
Hexachloro-1,3-butadiene	0.0250	ND	0.0186	0.0181	74.5	72.4	1	10.0-149			2.85	40
Isopropylbenzene	0.0250	ND	0.0232	0.0220	93.0	88.2	1	41.9-139			5.28	29.3
p-Isopropyltoluene	0.0250	ND	0.0222	0.0213	88.9	85.1	1	27.3-146			4.40	35.1
2-Butanone (MEK)	0.125	0.00521	0.136	0.152	104	118	1	23.9-170			11.6	28.3
Methylene Chloride	0.0250	ND	0.0229	0.0224	91.5	89.4	1	46.7-125			2.24	22.2
4-Methyl-2-pentanone (MIBK)	0.125	ND	0.120	0.133	95.9	107	1	42.4-146			10.7	26.7
Methyl tert-butyl ether	0.0250	ND	0.0237	0.0247	94.7	98.7	1	50.4-131			4.18	24.8
Naphthalene	0.0250	0.000452	0.0195	0.0210	76.1	82.2	1	18.4-145			7.57	34
n-Propylbenzene	0.0250	ND	0.0228	0.0216	91.4	86.5	1	35.2-139			5.52	31.9
Styrene	0.0250	ND	0.0229	0.0218	91.7	87.1	1	39.7-137			5.08	28.2
1,1,1,2-Tetrachloroethane	0.0250	ND	0.0247	0.0241	99.0	96.4	1	48.8-136			2.64	25.5
1,1,2,2-Tetrachloroethane	0.0250	ND	0.0231	0.0240	92.3	96.1	1	45.7-140			3.97	26.4
Tetrachloroethene	0.0250	ND	0.0231	0.0216	92.3	86.3	1	37.7-140			6.74	29.2
Toluene	0.0250	0.00368	0.0221	0.0210	73.5	69.2	1	47.8-127			5.04	24.3
1,1,2-Trichlorotrifluoroethane	0.0250	ND	0.0240	0.0229	96.0	91.5	1	35.7-146			4.82	28.8
1,2,3-Trichlorobenzene	0.0250	ND	0.0182	0.0186	72.7	74.4	1	10.0-150			2.41	38.5
1,2,4-Trichlorobenzene	0.0250	ND	0.0191	0.0189	76.2	75.4	1	10.0-153			1.09	39.3
1,1,1-Trichloroethane	0.0250	ND	0.0249	0.0242	99.8	96.8	1	49.0-138			3.05	25.3
1,1,2-Trichloroethane	0.0250	ND	0.0229	0.0229	91.7	91.5	1	52.3-132			0.240	23.4
Trichloroethene	0.0250	ND	0.0238	0.0228	95.3	91.3	1	48.0-132			4.29	24.8
Trichlorofluoromethane	0.0250	ND	0.0229	0.0226	91.4	90.4	1	12.8-169			1.14	29.7
1,2,3-Trichloropropane	0.0250	ND	0.0238	0.0254	95.1	101	1	44.4-138			6.52	26.3
1,2,3-Trimethylbenzene	0.0250	0.000400	0.0232	0.0229	91.4	89.9	1	41.0-133			1.63	27.6
1,2,4-Trimethylbenzene	0.0250	0.000835	0.0220	0.0212	84.6	81.4	1	32.9-139			3.73	30.6
1,3,5-Trimethylbenzene	0.0250	ND	0.0227	0.0216	91.0	86.5	1	37.1-138			5.06	30.6
Vinyl chloride	0.0250	ND	0.0243	0.0241	97.2	96.6	1	32.0-146			0.600	26.3
Xylenes, Total	0.0750	0.00234	0.0670	0.0637	86.2	81.8	1	42.7-135			5.07	26.6

Method Blank (MB)

(MB) 09/03/15 10:24

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
C12-C22 Hydrocarbons	U		0.0330	0.100
(S) o-Terphenyl	*109*			*50.0-150*

Method Blank (MB)

(MB) 09/19/15 05:09

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
C22-C32 Hydrocarbons	U		0.0330	0.100
C32-C40 Hydrocarbons	U		0.0330	0.100

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 09/03/15 10:44 • (LCSD) 09/03/15 11:04

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
C12-C22 Hydrocarbons	1.50	1.68	1.66	112	111	50.0-150			1.18	20
(S) o-Terphenyl				*109*	*107*	*50.0-150*				

Method Blank (MB)

(MB) 08/31/15 23:34

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C12-C22 Hydrocarbons	U		0.733	4.00
C22-C32 Hydrocarbons	U		1.33	4.00
C32-C40 Hydrocarbons	U		1.33	4.00
(S) o-Terphenyl	*75.3*			*50.0-150*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 08/31/15 23:59 • (LCSD) 09/01/15 00:24

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
C12-C22 Hydrocarbons	50.0	40.9	41.4	81.9	82.9	50.0-150			1.26	20
(S) o-Terphenyl				*81.8*	*80.9*	*50.0-150*				

Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND,U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Rec.	Recovery.
SDL	Sample Detection Limit.
MQL	Method Quantitation Limit.
Unadj. MQL	Unadjusted Method Quantitation Limit.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.

ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE.**

State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Conneticut	PH-0197	North Carolina [1]	DW21704
Florida	E87487	North Carolina [2]	41
Georgia	NELAP	North Dakota	R-140
Georgia [1]	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky [1]	90010	South Dakota	n/a
Kentucky [2]	16	Tennessee [1 4]	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

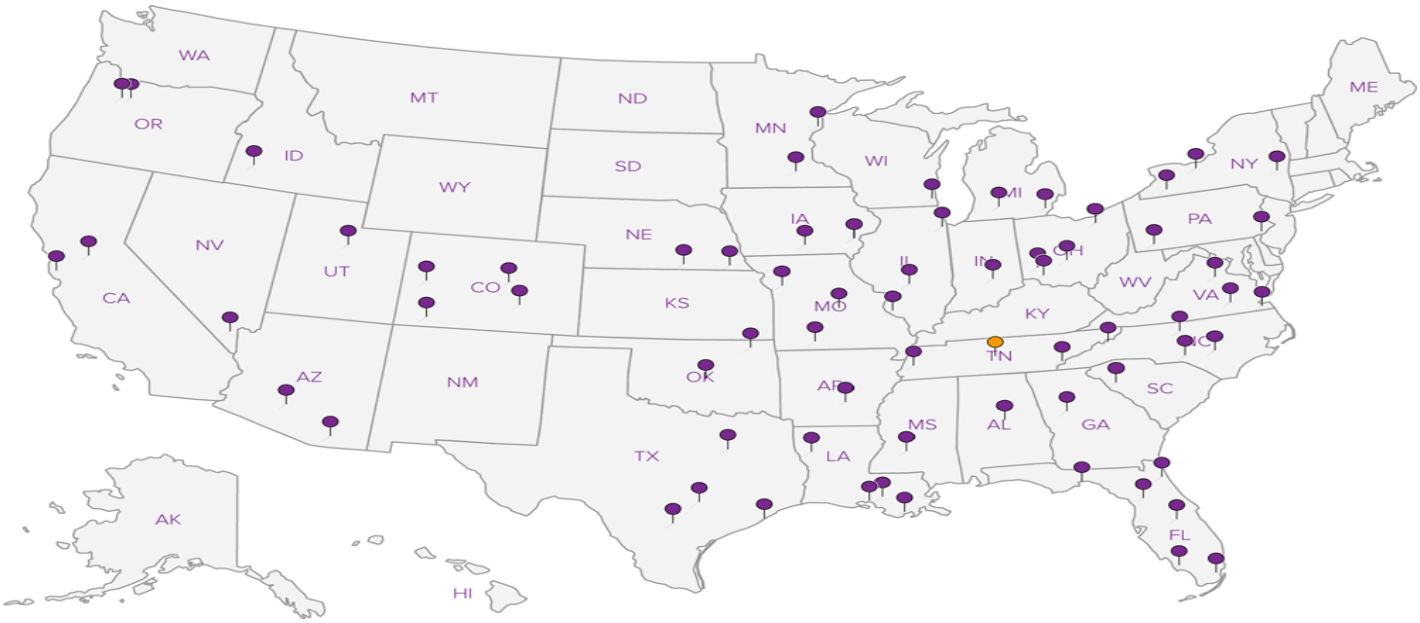
[1.] Drinking Water [2.] Underground Storage Tanks [3.] Aquatic Toxicity [4.] Chemical/Microbiological [5.] Mold [n/a] Accreditation not applicable

Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA	100789
Canada	1461.01	DOD	1461.01
EPA–Crypto	TN00003	USDA	S-67674

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. **ESC Lab Sciences performs all testing at our central laboratory.**



Trinity Source Group - Santa Cruz, CA

119 Encinal Street
Santa Cruz, CA 95060

Billing Information:
Accounts Payable- Mindi Lawrence
119 Encinal Street
Santa Cruz, CA 95060

Report to: David Reisma
Email To: labstrinity@gmail.com

Project Description: ABF Freight - 154
City/State Collected: Oakland, CA.

Phone: 831-426-5600
Fax: 831-426-5602
Client Project # 154.009.004
Lab Project #

Collected by (print): Spencer Davis
Site/Facility ID #
P.O. # ~~154.009.004~~

Collected by (signature):
Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day 200%
___ Next Day 100%
___ Two Day 50%
___ Three Day 25%

Date Results Needed
Email? ___No X Yes
FAX? ___No ___Yes

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs
SB-7 ~~3.0~~		SS	3.0'	8/27/15	9:50	1
SB-7 ~~5.5~~			5.5'		12:30	1
SB-7 ~~10.5~~			10.5'		12:50	1
SB-8 ~~6~~			6.0'		12:55	1
SB-8 ~~3.0~~			3.0'		13:15	1
SB-8 ~~9~~		↓	9.5'	↓	13:40	1
SB-7 - GW	Grab	GW			10:45	6
SB-8 - GW	Grab	GW		↓	11:28	6

Analysis / Container / Preservative

	TPHd w/ Silica Gel Cleanup	8260: TPHg + BTEX, MTBE, Naph+Index	HVOCs 8260	Rem./Contaminant	Sample # (lab only)
SB-7 ~~3.0~~	X	X	X		-01
SB-7 ~~5.5~~	↓	↓	↓		-02
SB-7 ~~10.5~~					-03
SB-8 ~~6~~					-04
SB-8 ~~3.0~~					-05
SB-8 ~~9~~					-06
SB-7 - GW					-07
SB-8 - GW	↓	↓	↓		-08

Chain of Custody Page ___ of ___

ESC LAB SCIENCES
YOUR LAB OF CHOICE
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L# L786006
F183
Acctnum: TRINITYSCCA
Template:
Prelogin:
TSR: 358 - Jarred Willis
PB:
Shipped Via:

5547 0234 5466

* Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other ___

Remarks: Please Make EDF. Global ID: T10000005825

pH ___ Temp ___
Flow ___ Other ___

Hold #

Condition: (lab use only) OK MH

COC Seal Intact: ___Y ___N ___NA

pH Checked: NCF:

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	8.28.15	15:30	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)

Samples returned via: ☐ UPS ☐ FedEx ☐ Courier ☐ ___
Temp: 3.1 °C Bottles Received: 16
Date: 8.29.15 Time: 0900

STATE WATER RESOURCES CONTROL BOARD

GEOTRACKER ESI

UPLOADING A EDF FILE

SUCCESS

Processing is complete. No errors were found!
Your file has been successfully submitted!

Submittal Type:	**EDF**
Report Title:	**Data Gap Investigation Report**
Report Type:	**Site Investigation**
Facility Global ID:	**T10000005825**
Facility Name:	**ABF FREIGHT MAINTENANCE SHOP**
File Name:	**L786006_EDF.zip**
Organization Name:	**Trinity Source Group, Inc.**
Username:	**TRINITY SOURCE GROUP**
IP Address:	**63.249.96.11**
Submittal Date/Time:	**9/22/2015 1:43:09 PM**
Confirmation Number:	**4222548067**

VIEW QC REPORT

VIEW DETECTIONS REPORT