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June 6, 2016

Alameda County Department of
Environmental Health
1131 Harbor Bay Parkway, 2nd Floor
Alameda, CA 94502

Attention: Keith Nowell

Subject: Request for Closure
3924 Market Street, Oakland, California
ACEH RO# 0000490; Global ID: T0600101187

Ladies and Gentlemen:

Attached please find a copy of the *Request for Closure*, prepared by Gribi Associates. 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.

Very truly yours,



Scott Atthowe
Scott C. Atthowe Trust
3924 Market Street
Oakland, CA 94608



June 6, 2016

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Environmental Health
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Alameda, CA 94502

Attention: Keith Nowell

Subject: Request for Closure
3924 Market Street, Oakland, California
ACEH RO# 0000490; Global ID: T0600101187

Ladies and Gentlemen:

Gribi Associates is pleased to submit this letter on behalf of Mr. Scott Atthowe for the underground storage tank (UST) site located at 3924 Market Street, Oakland, California (Site) (see Figure 1 and Figure 2). This letter requests regulatory closure of the Site under the *Low-Threat Underground Storage Tank Case Closure Policy* (LTCP).

1.0 SITE CONCEPTUAL MODEL

A Site Conceptual Model, which incorporates results from previous investigations, was prepared for the Site. Some of the key elements of the SCM include the following (see Figure 3):

- **Contaminants of concern:** The contaminants of concern are primarily TPH-D and TPH-MO, with minor amounts of TPH-G and BTEX constituents.
- **Source of releases:** Based on the results from recent and past investigations, it is likely that the source of the heavy hydrocarbon releases was fuel oil leaks associated with bakery ovens previously located in the center of the Site building during bakery operations on the Site from the 1920s to the 1980s.
- **Soil hydrocarbon impacts:** Contaminant impacts in soil appear to be fairly low, with maximum TPH-G, TPH-D, and TPH-MO concentrations of 2.4 mg/kg, 740 mg/kg and 910 mg/kg, respectively. Soil samples from downgradient borings B-12 and B-13 showed no

significant hydrocarbon detections. Thus, soil hydrocarbon impacts have been defined laterally in the downgradient (southwest) direction.

- **Groundwater hydrocarbon impacts:** Contaminant impacts in groundwater are limited primarily to dark brown, viscous free product in the apparent source area and extending a short distance southwest. Dissolved phase groundwater contaminants are limited to this area also. Maximum TPH-G, TPH-D, and TPH-MO concentrations encountered in the apparent source area are 9,900 ug/L, 4,700 ug/L, and 5,100 ug/L, respectively. No BTEX was encountered in groundwater samples during recent sampling events.
- **Nature of residual free product:** The residual product in the three Site wells is not pumpable and does not partition readily to dissolved-phase groundwater TPH-D/MO.
- **Soil vapor impacts:** Two soil gas samples, SG-1 and SG-2, were collected adjacent to the Site building within the hydrocarbon plume area. These soil gas samples showed no significant hydrocarbon impacts. These results provide adequate indication that vapor intrusion is not a significant concern relative to this Site.
- **Sensitive Receptors:** DWR and ACDPW records indicate no water supply wells within a 1,000-foot radius from the Site. Potential human health receptors include future construction workers (direct exposure). Human exposure to volatile contaminant vapors is not a concern given the nonvolatile nature of the contaminants.

2.0 LOW-THREAT CLOSURE POLICY EVALUTION

Based on the results of previous Site investigations, it appears that this Site generally meets the general and media-specific criteria under the *Low-Threat Underground Storage Tank Case Closure Policy* (LTCP).

2.1 LTCP General Criteria

The Site meets all of the following LTCP general criteria:

- The Site is on a public water supply system; East Bay Municipal Utilities District.
- The release consists only of petroleum. COCs are primarily diesel/motor oil (fuel oil) range hydrocarbons.
- The major sources of contamination have been stopped. The bakery ovens and any appurtenances were removed, and there is no source present on the Site.
- A conceptual site model has been developed for this Site.

- Secondary sources have been removed to the extent practicable.
- Soil and groundwater has been tested for MTBE and reported.
- Nuisance as defined by Water Code section 13050 does not exist at the Site.

At first appearance, the Site does not meet the following LTCP general criterion:

- There has been no free product encountered at the Site.

Residual product is present below 15 feet in depth at the Site; however, this product is viscous and, we believe, does not meet the definition of “free product” under the LTCP. The overall reason for this is that the residual product, which was likely released over 50 years ago, is very viscous, not pumpable, and not significantly impacting dissolved-phase groundwater hydrocarbon impacts.

The Low-Threat Underground Storage (UST) Case Closure Policy (“Policy”) requires that free product be removed to “the maximum extent practicable”¹. Further, the Policy states that “Abatement of free product migration shall be used as a minimum objective for the design of any free product removal system.”

Free product (or light non-aqueous phase liquid (LNAPL)) can exist as either residual (immobile) LNAPL, mobile LNAPL, or migrating LNAPL². The referenced State Water Quality Control Board guidance states that “the term free product is primarily equivalent to migrating LNAPL (a subset of mobile LNAPL)” and “LNAPL must be removed to the point that its migration is stopped and the LNAPL extent is stable.” The free product in Site wells is clearly immobile and stable³. Also, as evidenced by the very limited extent of dissolved-phase hydrocarbon impacts, the heavy residual product has not acted as a secondary source for dissolved-phase hydrocarbon impacts in groundwater beneath the Site or downgradient from the Site.

¹ Low-Threat Underground Storage Tank (UST) Case Closure Policy, State Water Resources Control Board, August 17, 2012.

² Technical Justification for Groundwater Media-Specific Criteria, State Water Resources Control Board, Final, 04-24-2012; supplement to Low-Threat Underground Storage Tank (UST) Case Closure Policy.

³ Additional anecdotal evidence of the product’s immobility is that, after installation of Site groundwater monitoring wells in 1995, it apparently took some four years for the product in Site wells to migrate laterally from annular native soils surrounding the wells, through the filter pack and into the wells themselves.

2.2 LTCP Media-Specific Criteria: Groundwater

The Site meets the following LTCP media-specific criteria for groundwater:

- The contaminant plume that exceeds groundwater quality objectives is less than 250 feet in length.
- There is no free product (based on LTCP definition for “free product”, as discussed in Section 2.1 of this report).
- The nearest existing water supply well and/or surface water body is greater than 1,000 feet from the defined plume boundary.
- The dissolved concentration of benzene is less than 3,000 micrograms per liter ($\mu\text{g/l}$), and the dissolved concentration of MTBE is less than 1,000 $\mu\text{g/l}$.
- An analysis of site-specific conditions determined that the site under current and reasonably anticipated near-term future scenarios poses a low-threat to human health and safety and to the environment, and water quality objectives will be achieved within a reasonable time frame.

2.3 LTCP Media-Specific Criteria: Vapor Intrusion to Indoor Air

The Site meets the following LTCP media-specific criteria for vapor intrusion to indoor air (Scenario 4 – Direct Measurement of Soil Gas Concentrations):

- There is a minimum of five vertical feet of soil between the depth of soil gas measurement and the building foundation. Soil gas samples were collected at 5.5 feet in depth; the concrete slab foundation is approximately 0.5 feet thick.
- Oxygen concentrations in soil gas are greater than 4 percent. The average soil gas oxygen concentration for the Site soil gas samples to date is 8.7 percent.
- Benzene concentrations in soil gas are less than 85,000 $\mu\text{g/m}^3$. The highest benzene concentration for all Site soil gas samples was 17 $\mu\text{g/m}^3$.

2.4 LTCP Media-Specific Criteria: Direct Contact and Outdoor Air Exposure

The Site meets the following LTCP media-specific criteria for direct contact and outdoor air exposure:

- Benzene concentrations in soil are below LTCP Table 1 respective 0-5 ft bgs and 5-10 ft bgs residential risk levels of 1.9 mg/kg and 2.8 mg/kg. Benzene concentrations in these depth intervals in Site soil borings are currently nondetect.
- Ethylbenzene concentrations in soil are below LTCP Table 1 respective 0-5 ft bgs and 5-10 ft bgs residential risk levels of 21 mg/kg and 32 mg/kg. The ethylbenzene

concentrations in the 0-5 ft bgs and 5-10 ft bgs depth intervals in Site borings are currently nondetect.

- Naphthalene concentrations in soil are below LTCP Table 1 respective 0-5 ft bgs and 5-10 ft bgs residential risk levels of 9.7 mg/kg and 9.7 mg/kg. The naphthalene concentrations in the 0-5 ft bgs and 5-10 ft bgs depth intervals in Site borings are currently nondetect.

Since the Site meets both the general and media-specific criteria, regulatory closure should be granted for this site.

3.0 SUMMARY

We believe that there is sufficient Site data to warrant regulatory closure of this Site under the LTCP. While a data gap exists relative to the exact source of the heavy hydrocarbon COCs, we believe that the existing data relative to the plume configuration and the limited mobility of the COCs is sufficient to rule out other potential sources. In addition, the heavy residual product present beneath the Site does not contain sufficient concentrations of specific risk-based contaminants and, thus, does not pose a risk to current and future Site or offsite receptors.

We appreciate this opportunity to provide this letter for your review. Please contact us if there are questions or if additional information is required.

Very truly yours,



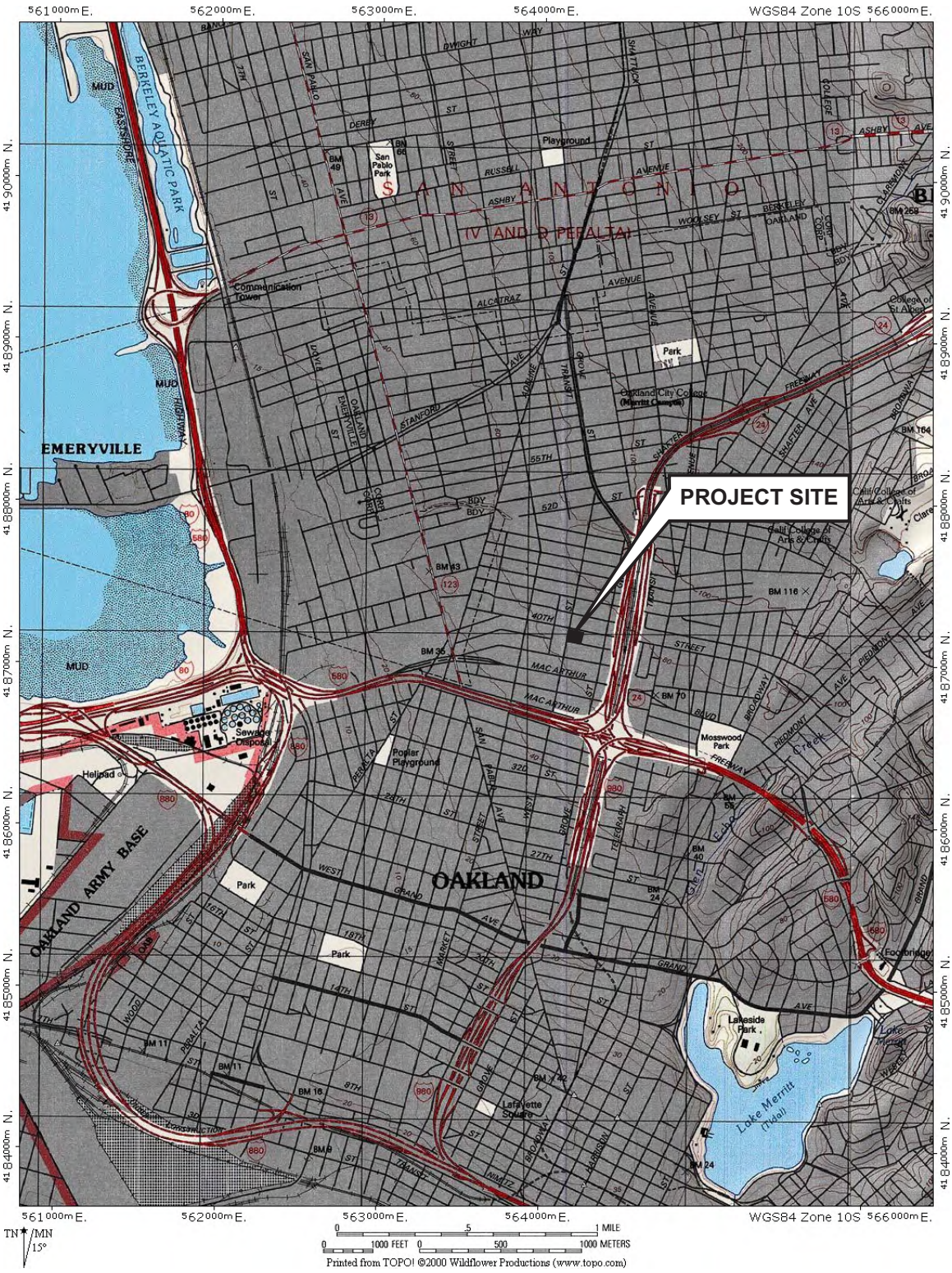
James E. Gribi
Professional Geologist
California No. 5843



Enclosure

C Scott Atthowe, Atthowe Fine Arts

FIGURES



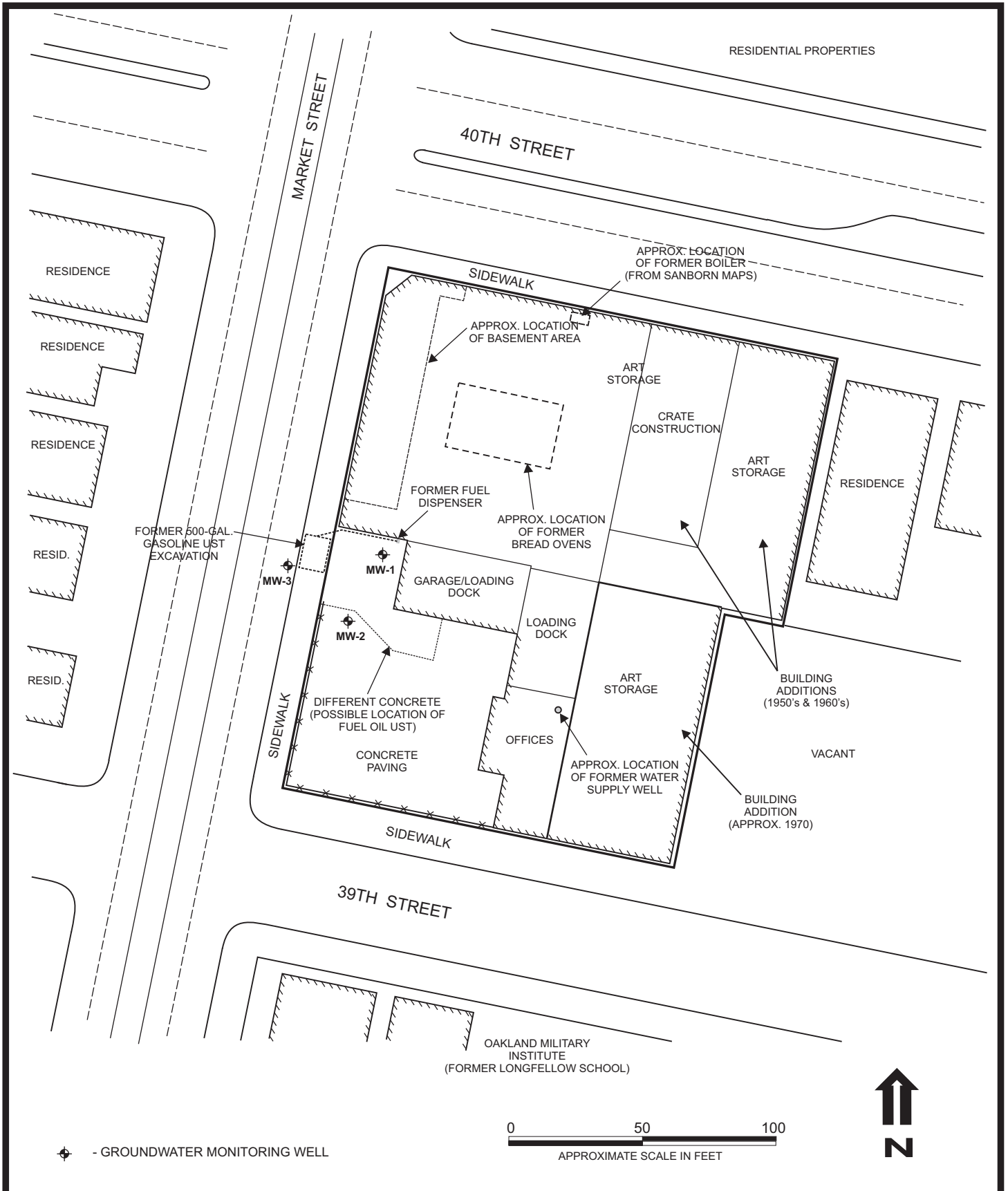
DESIGNED BY:	CHECKED BY: JEG
DRAWN BY: JEG	SCALE:
PROJECT NO:	

SITE VICINITY MAP

3924 MARKET STREET
OAKLAND, CALIFORNIA

DATE: 06/06/2016 FIGURE: 1





DESIGNED BY:	CHECKED BY: JEG	SITE PLAN	DATE: 06/06/2016	FIGURE: 2
DRAWN BY: JEG	SCALE:		GRIBI	
		3924 MARKET STREET OAKLAND, CALIFORNIA		

SOIL (MG/KG)		GW (UG/L)	
Depth	8.0'	12.0'	16.0' (15.0')
TPH-D:	<10	<10	<10
TPH-MO:	<10	<10	<10
TPH-G:	<0.50	<0.50	<0.50
B:	<0.005	<0.005	<0.005
T:	<0.005	<0.005	<0.005
E:	<0.005	<0.005	<0.005
X:	<0.010	<0.010	<0.010

SOIL (MG/KG)		GW (UG/L)	
Depth	8.0'	12.0'	15.0' (15.5')
TPH-D:	<10	11	490
TPH-MO:	<10	<10	570
TPH-G:	<0.50	<0.50	1.1
B:	<0.005	<0.005	<0.005
T:	<0.005	<0.005	<0.005
E:	<0.005	<0.005	<0.005
X:	<0.010	<0.010	<0.010

SOIL (MG/KG)		GW (UG/L)	
Depth	9.0'	11.0'	13.0' 15.0' 17.0' (15.5')
TPH-D:	<10	73	130
TPH-MO:	<10	32	86
TPH-G:	<0.50	<0.50	<0.50
B:	<0.005	<0.005	<0.005
T:	<0.005	<0.005	<0.005
E:	<0.005	<0.005	<0.005
X:	<0.010	<0.010	<0.010

SOIL (MG/KG)		GW (UG/L)	
Depth	8.0'	12.0'	16.0' (15.0')
TPH-D:	<10	<10	<10
TPH-MO:	<10	<10	<10
TPH-G:	<0.50	<0.50	<0.50
B:	<0.005	<0.005	<0.005
T:	<0.005	<0.005	<0.005
E:	<0.005	<0.005	<0.005
X:	<0.010	<0.010	<0.010

SOIL (MG/KG)		GW (UG/L)	
Depth	2.0'	4.0'	6.0' 8.0' 10.0' 12.0' 15.0' 18.0' 19.5' 21.0' (15.5')
TPH-D:	<10	<10	<10
TPH-MO:	<10	<10	<10
TPH-G:	<0.50	<0.50	<0.50
B:	<0.005	<0.005	<0.005
T:	<0.005	<0.005	<0.005
E:	<0.005	<0.005	<0.005
X:	<0.010	<0.010	<0.010

SOIL (MG/KG)		GW (UG/L)	
Depth	8.0'	12.0'	15.0' (16.5')
TPH-D:	<10	43	280
TPH-MO:	<10	<10	290
TPH-G:	<0.50	<0.50	1.2
B:	<0.005	<0.005	<0.005
T:	<0.005	<0.005	<0.005
E:	<0.005	<0.005	<0.005
X:	<0.010	<0.010	<0.010

SOIL (MG/KG)		GW (UG/L)	
Depth	7.0'	12.0'	15.0' (16.5')
TPH-D:	70	18	11
TPH-MO:	<10	<10	<10
TPH-G:	0.69	0.58	1.6
B:	<0.005	<0.005	<0.005
T:	<0.005	<0.005	<0.005
E:	<0.005	<0.005	<0.005
X:	<0.010	<0.010	<0.010

SOIL (MG/KG)		GW (UG/L)	
Depth	9.0'	12.0'	15.0' (15.5')
TPH-D:	290	43	<10
TPH-MO:	280	<10	<10
TPH-G:	1.2	0.59	0.84
B:	<0.005	<0.005	<0.005
T:	<0.005	<0.005	0.0069
E:	<0.005	<0.005	<0.005
X:	<0.010	<0.010	<0.010

SOIL (MG/KG)		GW (UG/L)	
Depth	8.0'	12.0'	16.0' (16.5')
TPH-D:	<10	<10	190
TPH-MO:	<10	<10	250
TPH-G:	<0.50	<0.50	0.73
B:	<0.005	<0.005	<0.005
T:	<0.005	<0.005	<0.005
E:	<0.005	<0.005	<0.005
X:	<0.010	<0.010	<0.010

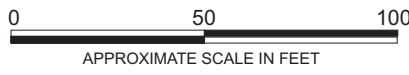
SOIL (MG/KG)		GW (UG/L)	
Depth	7.5'	11.5'	15.5' 19.0' (18.0')
TPH-D:	<10	<10	<10
TPH-MO:	<10	<10	<10
TPH-G:	<0.50	<0.50	<0.50
B:	<0.005	<0.005	<0.005
T:	<0.005	<0.005	<0.005
E:	<0.005	<0.005	<0.005
X:	<0.010	<0.010	<0.010

SOIL (MG/KG)		GW (UG/L)	
Depth	7.5'	11.5'	15.5' 19.0' 24.0' (18.5')
TPH-D:	<10	<10	<10
TPH-MO:	<10	<10	<10
TPH-G:	<0.50	<0.50	<0.50
B:	<0.005	<0.005	<0.005
T:	<0.005	<0.005	<0.005
E:	<0.005	<0.005	<0.005
X:	<0.010	<0.010	<0.010

SOIL (MG/KG)		GW (UG/L)	
Depth	8.0'	12.0'	15.0' (14.0')
TPH-D:	<10	10	740
TPH-MO:	<10	<10	910
TPH-G:	<0.50	<0.50	2.4
B:	<0.005	<0.005	<0.005
T:	<0.005	<0.005	<0.005
E:	<0.005	<0.005	<0.005
X:	<0.010	<0.010	<0.010

SOIL (MG/KG)		GW (UG/L)	
Depth	8.0'	12.0'	15.0' (15.5')
TPH-D:	<10	<10	<10
TPH-MO:	<10	<10	<10
TPH-G:	<0.50	<0.50	<0.50
B:	<0.005	<0.005	<0.005
T:	<0.005	<0.005	<0.005
E:	<0.005	<0.005	<0.005
X:	<0.010	<0.010	<0.010

- ▲ - SOIL GAS SAMPLE LOCATION (GRIBI, 07/2015)
- - SOIL BORING LOCATION (GRIBI, 07-11/2015)
- - SOIL BORING LOCATION (GRIBI, 11/2013)
- ⊕ - GROUNDWATER MONITORING WELL



DESIGNED BY: _____
 CHECKED BY: JEG
 DRAWN BY: JEG
 SCALE: _____

**SOIL & GRAB GROUNDWATER
 HYDROCARBON RESULTS**

DATE: 06/06/2016 FIGURE: 3

3924 MARKET STREET
 OAKLAND, CALIFORNIA

