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February 10, 2000

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Barney Chan  
Alameda County Health Care Services Agency  
Department of Environmental Health  
Alameda, CA 94502

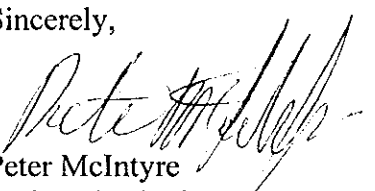
**Subject: Workplan**  
1200 East 12<sup>th</sup> Street  
Oakland, California  
AEI Project No. 3534

Dear Mr. Chan:

Enclosed is the workplan prepared for the installation of a single well at the above referenced site. AEI looks forward to moving forward with this project.

Please call me at (925) 283-6000 if you have any questions.

Sincerely,

  
Peter McIntyre  
Project Geologist

*Handwritten notes:*  
Peter McIntyre  
rosebank  
jrb

*Handwritten notes:*  
Missive files

February 10, 2000

Mr. Barney Chan  
Alameda County Health Care Services Agency  
Department of Environmental Health  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502

Re: 1200 East 12<sup>th</sup> Street  
Oakland, California  
Project No. 3534

Dear Mr. Chan:

AEI Consultants (AEI) is pleased to present this workplan for the installation of one groundwater monitoring well at the above referenced site (refer to Figure 1 for site location). This workplan was prepared at the request of your office to investigate the groundwater quality at the site. AEI is providing environmental engineering, consulting, and construction services to Mr. Robert Baston, the owner of the property, and is submitting this letter on his behalf.

### Site Description and Background

The subject property is located on the northeastern corner of East 12<sup>th</sup> Street and 12<sup>th</sup> Avenue. The subject property is approximately 7,500 square feet in size and is developed with a 9,000 square foot two-story brick building. The building occupies the entire area of the property and is currently vacant. The subject property was occupied by a gas station and auto parts store from 1927 to the mid 1960s. The subject property was utilized as a tire and auto supply company, as well as a truck and forklift maintenance facility from the mid 1960s to the late 1980s.

In 1996, two 500-gallon gasoline underground storage tanks were removed from the sidewalk along 12<sup>th</sup> Avenue at the subject property. Soil samples collected from beneath the tanks indicated elevated levels of total petroleum hydrocarbons (TPH) as gasoline at the western end of Tank 2. Further over-excavation was performed in this area and two soil samples were collected. TPH as gasoline was detected up to 210 mg/kg.

In September 1999, AEI performed a limited subsurface investigation at the site in accordance with the requirements of the Alameda County Health Care Services Agency (ACHCSA). Soil and groundwater samples were collected from two shallow soil borings shown in Figure 2. No significant concentrations of petroleum hydrocarbons were detected in the soil samples analyzed, however TPH as gasoline and benzene were detected in the groundwater up to 6,700 µg/L and 470 µg/L, respectively. Please refer to Tables 1 & 2 for the soil and groundwater sample analytical results from this

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Corporate Headquarters

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investigation. Based on the results of the groundwater sample analysis, the ACHCSA requested the installation of one groundwater monitoring well to assess the concentration and stability of the dissolved hydrocarbon plume over time.

### Geologic Setting

According to logs of the soil borings advanced by AEI, the near surface sediments beneath the site consist of silty and sandy to a depth of 16 feet below ground surface (bgs). Groundwater was encountered at 14 feet bgs. The water bearing deposits consist of clay with silt and fine sand.

The site is located 40 feet above mean sea level (MSL) and the topography of the area slopes gently to the southwest. AEI reviewed information obtained from a groundwater monitoring well network for a site located at 1199 East 12<sup>th</sup> Street, located across 12<sup>th</sup> Street and to the west of the subject site. Groundwater beneath this adjacent site was calculated to flow to the south/southwest, and based on the proximity of this adjacent site to former tank locations and the local topography, AEI assumes the groundwater at the subject site flows to the south/southwest.

### Scope of Work

AEI proposes to advance one soil boring south/southwest of the former tank locations. The boring will be converted to a 2-inch groundwater monitoring well. Please refer to Figure 2 for the proposed well location.

A Mobile B-57 or CME 75 hydraulic rotary drill with 6.25" I.D. by 10.5" O.D. hollow stem augers will be used to drill the boring. The boring will be drilled to first encountered groundwater plus at least 10 feet, corresponding to a maximum depth of approximately 25 feet bgs.

The soil borings will be logged on-site by an AEI geologist using the Unified Soil Classification System. Undisturbed soil samples will be collected at 5-foot intervals, beginning at five feet bgs for visual classification and chemical analysis. Soil samples obtained during drilling will be screened in the field using a portable organic vapor meter. If deemed necessary based on field observations, up to two soil samples from the boring will be analyzed at a state certified laboratory as determined by the on-site geologist. The soil samples will be sealed with teflon tape and caps.

req. a min.  
of 1 spl. for  
chem. analysis

All samples will be put on ice and transported, under chain of custody procedures to McCampbell Analytical, Inc. of Pacheco, California. Selected soil samples will be analyzed for TPH as gasoline (EPA method 5030/8015), benzene, toluene, ethylbenzene

and xylenes (BTEX) and methyl tertiary butyl ether (MTBE) (EPA method 5030/8020). The remaining soil samples will be placed on hold at the laboratory.

All sampling equipment will be cleaned in buckets with brushes with a TSP or Alconox solution, then rinsed twice with tap water. The drilling augers will be steam cleaned prior to drilling. Rinsate will be contained on-site in sealed, labeled drums.

Cuttings generated during drilling will be stored on-site in 55 gallon drums. The soil will be sampled, analyzed and disposed of in a local landfill unless deemed suitable for re-use on-site.

The monitoring well will be constructed of 2" flush threaded Schedule 40 PVC casing, with approximately 15 feet of .01" or .02" factory-slotted well screen. The top of the well screen will extend 5 feet above the encountered groundwater level to account for seasonal fluctuations. The well casing will be inserted through the augers to a point a few inches above the borehole terminus where it will be suspended until the well is secured within the sand pack. Sand (#2 or #3) will be poured through the augers in one- to two-foot lifts up to two feet above the top of the perforated casing. Two feet of bentonite pellets will be placed above the sand and activated with tap water. The seal will be finished up to the surface with cement/bentonite grout. A locking top cap and a flush-mounted watertight well cover will be installed.

The well will be developed by bailing water into a DOT 17H drum until the water appears to be reasonably clear with a minimum of 10 well volumes removed. Well development will take place no less than 72 hours after installation of the wells.

Prior to obtaining water samples from the well, no less than 3 well volumes of water will be bailed from the wells. Groundwater will be checked for sheen and free product prior to purging and sampling. Samples will be obtained in a clean disposable bailer, secured in 40 milliliter volatile organic analysis (VOA) vials, placed in a cooler with wet ice and transported, under chain of custody procedures, to the laboratory. Water samples will be analyzed for TPH as gasoline, BTEX and MTBE. The well will be sampled four times over a period of one year following the installation of the well.

### **Site Safety**

Prior to commencement of field activities, a site safety meeting will be held at a designated command post near the working area. Emergency procedures will be outlined at this meeting. Also, the hazards of the known or suspected chemicals of interest will be explained. Level D personal protection equipment is the anticipated maximum amount of protection needed. A site safety plan conforming to Part 1910.120 (i) (2) of 29 CFR will be on site at all times during the project.

A working area will be established with barricades and warning tape to delineate the zone where hard hats and steel-toed shoes must be worn, and where unauthorized personnel will not be allowed. If, during drilling, fuel product odors are deemed to be substantial, half-face respirators with organic vapor cartridges will be worn.

A nearby hospital will be designated in the site safety plan as the emergency medical facility of first choice. A map with a course plotted to the hospital will be on-site.

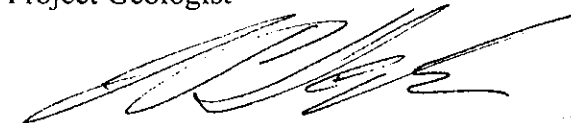
### Estimated Schedule

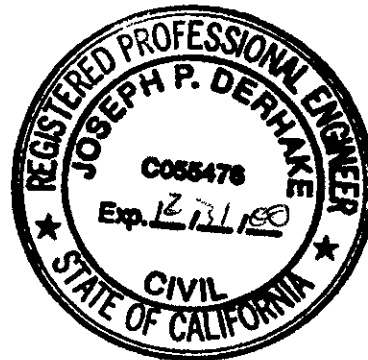
AEI will commence the well installation permitting process immediately after approval of this workplan is granted by the ACHCSA. The ACHCSA will be given adequate notification of the scheduled day of drilling so they can schedule field inspectors if desired. Laboratory analytical results will be obtained within two weeks of collection. The final report will be prepared promptly, and copies will be delivered to the ACHCSA.

AEI requests your approval to proceed with this project. AEI is eager to complete this work as soon as possible. Please contact me at (925) 283-6000 if you need additional information or have any questions.

Sincerely,

 X(4)  
Peter McIntyre  
Project Geologist

  
Joseph P. Derhake, PE  
Principal



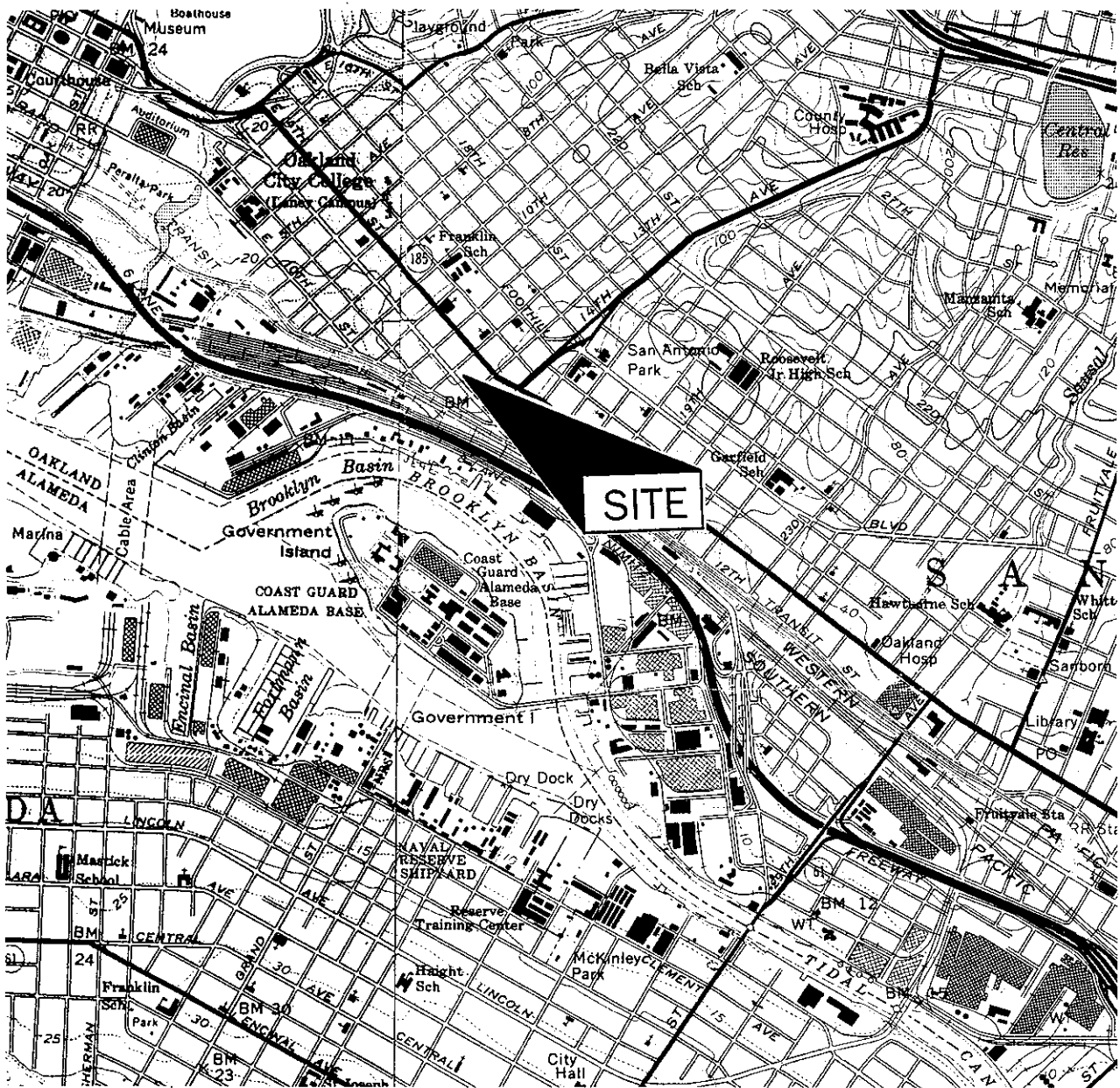
cc: Mr. Robert Baston  
61 Skyway Lane  
Oakland, CA 94619

**Figure 1** Site Location Map

**Figure 2** Site Plan

**Table 1** Previous Soil Sample Analytical

**Table 2** Previous Groundwater Sample Analytical



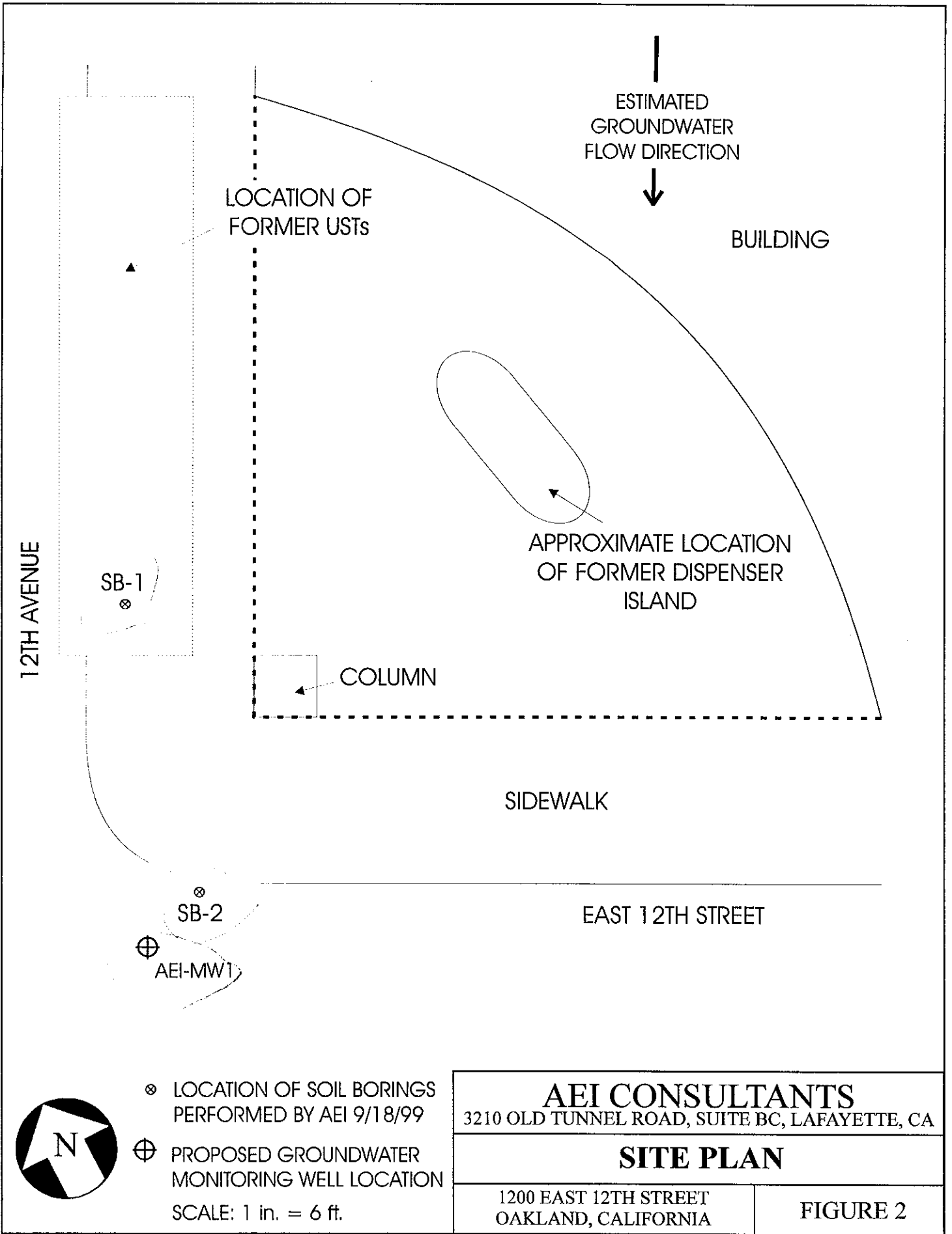
SOURCE:  
 USGS OAKLAND EAST QUADRANGLE  
 SCALE: 1: 24,000

AEI CONSULTANTS  
 3210 OLD TUNNEL ROAD, SUITE B, LAFAYETTE, CA

**SITE LOCATION MAP**

1200 EAST 12<sup>th</sup> STREET  
 OAKLAND, CALIFORNIA

FIGURE 1  
 PROJECT NO. 3534



⊗ LOCATION OF SOIL BORINGS PERFORMED BY AEI 9/18/99

⊕ PROPOSED GROUNDWATER MONITORING WELL LOCATION

SCALE: 1 in. = 6 ft.

<b>AEI CONSULTANTS</b> 3210 OLD TUNNEL ROAD, SUITE BC, LAFAYETTE, CA	
<b>SITE PLAN</b>	
1200 EAST 12TH STREET OAKLAND, CALIFORNIA	<b>FIGURE 2</b>

**Table 1:  
Soil Sample Analytical Results**

Sample ID	TPH as gasoline mg/kg	MTBE mg/kg	Benzene mg/kg	Toluene mg/kg	Ethylbenzen mg/kg	Xylenes mg/kg
SB-1 14'	ND	ND	ND	ND	ND	ND
SB-2 14'	2.2	ND	0.13	ND	0.07	0.021
MDL	1.0	0.05	0.005	0.005	0.005	0.005

**Table 2:  
Groundwater Sample Analytical Results**

Sample ID	TPH as gasoline µg/L	MTBE µg/L	Benzene µg/L	Toluene µg/L	Ethylbenzen µg/L	Xylenes µg/L
SB-1 W	6,700	ND	26	6.1	22	130
SB-2 W	3,900	ND	470	9.5	160	57
MDL	50.0	5	0.5	0.5	0.5	0.5

MDL = Method Detection Limit

ND = Not detected above Method Detection Limit

mg/kg = milligrams per kilogram

µg/kg = micrograms per kilogram