



February 3, 2006  
Mr. Amir Gholami  
Alameda County Health Care Services Agency  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502-6577

**RECEIVED**

*By loprojectop at 11:03 am, Feb 03, 2006*

**Subject: Work Plan for Soil and Groundwater Investigation**  
Nat Piazza  
20957 Baker Road  
Castro Valley, California 94546  
Leak Case RO0002739  
AEI Project # 10509

Dear Mr. Gholami:

Attached is a copy of the work plan for the proposed investigation at the above referenced site. The Piazzas would like to move forward with the investigation as soon as possible.

If you have any questions or need additional information, I can be reached at (925) 944-2899 extension 122.

Sincerely,  
AEI Consultants

Robert F. Flory, P.G.  
Project Manager

cc: Nat & Darlene Piazza  
file

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*By loprojectop at 11:03 am, Feb 03, 2006*

January 30, 2006

**SOIL & GROUNDWATER  
INVESTIGATION REPORT**

20957 Baker Road  
Castro Valley, California

Project No. 10509

Prepared For

Nat Piazza  
7613 Peppertree Road  
Dublin, California 94568

Prepared By

**AEI Consultants**  
2500 Camino Diablo, Suite 100  
Walnut Creek, CA 94597  
(925) 944-2899



January 30, 2006

Darlene and Nat Piazza  
7613 Peppertree Road  
Dublin, California 94568-3343

**Re: Workplan for Soil and groundwater Investigation**

20957 Baker Road  
Castro Valley, California 94546  
Leak Case RO0002739  
AEI Project # 10509

Dear Mr. and Mrs. Piazza,

The following workplan has been prepared on behalf of Mr. And Mrs. Nat Piazza, owners of the above referenced property. AEI Consultants (AEI) has been retained by Mr. Nat Piazza to provide environmental engineering and consulting services associated with a previously removed underground storage tank (UST) on the property. This workplan has been prepared in response to a request from the Alameda County Health Care Services (ACHCSA) to prepare work plan for a soil and groundwater investigation to determine the horizontal and vertical extent of impacted groundwater resulting from the hydrocarbon release from the former USTs.

**SITE DESCRIPTION AND BACKGROUND**

The subject property (hereafter referred to as the “site” or “property”) is located at 20957 Baker Road in Castro Valley, California (Figure 1: Site Location Map). The site is located in a mixed residential and commercial/light-industrial area of Castro Valley. The site is approximately 160 feet by 300 feet in area and is currently undeveloped. The site is partially covered with asphalt surfacing and concrete slabs with the balance of the site graveled.

***Tank Removal***

On April 21, 2004, AEI removed two 1,000 gallon underground tanks from the site. The removal was performed under permit from the Alameda County Health Services Agency (ACHCSA). The tank removal was observed by Robert Weston, Inspector for the ACHCSA. Two soil samples were collected from underneath each UST and analyzed for Total Petroleum Hydrocarbons as gasoline (TPH-g), benzene, toluene, ethylbenzene, xylenes (BTEX) and Methyl ter- butyl ether (MTBE) by EPA Method 8021B/8015Cm. Fuel oxygenates and 1,2 Dibromoethane (EDB) and 1,2 Dichloroethane (1,2 DCA) were analyzed by EPA Method 8260. Total Petroleum Hydrocarbons as diesel (TPH-d) was analyzed by EPA Method 8015C and total lead by EPA method 7010.

Hydrocarbons were detected in all the soil samples, TPH-g at concentrations ranging from 160 mg/Kg (T1W-EB8') to 1,400 mg/Kg (T2W-EB8') and TPH-d at concentrations ranging from 1,400 mg/Kg (T2E-EB8') to 10,000 mg/Kg (T1E-EB8'). Total xylenes were reported in two samples at 8.4 mg/Kg (T2W-E8') and 0.25 mg/kg (T2E-EB8'). No fuel oxygenates, EDB, or DCA were detected in the samples. Total lead was reported at concentrations ranging from 6.1 mg/Kg to 24 mg/Kg (stockpile sample STKP1-4).

### ***Preliminary Site Assessment***

AEI performed the subsurface investigation at the property on May 18, 2005. Eight (8) soil borings (SB-1 through SB-8) were advanced to depths ranging from 14 ft. to 18 ft. below ground surface (bgs) using a Geoprobe® model 5410 direct-push drilling rig. The locations of the soil borings are shown on Figure 2.

No detectable concentrations of TPH-g, TPH-d, TPH-mo, MTBE or BTEX, were reported in any of the soil samples from depths of 7.5 to 11.0 feet bgs above detection limits of 1.0 mg/kg, 1.0 mg/kg, 5.0 mg/kg, 0.05 mg/kg and 0.005 mg/kg respectively.

TPH-g was reported at a concentration of 7,300 micrograms per liter ( $\mu\text{g/L}$ ) in SB-2 (SB2-W). No TPH-g was reported in groundwater samples from any other borings at or above a detection limit of 50  $\mu\text{g/L}$ .

The maximum concentration of TPH-d was reported in the groundwater sample from boring SB-2-W at a concentration of 23,000  $\mu\text{g/L}$ . LNAPL was observed in the field and reported by the laboratory in the groundwater sample from SB-2. TPH-d was reported in the other seven borings at concentrations ranging from ND<50  $\mu\text{g/L}$  (SB-7) to 670  $\mu\text{g/L}$  (SB-5).

TPH-mo was not reported in groundwater samples from borings SB-3, SB-4 and SB-7 at or above a detection limit of 250  $\mu\text{g/L}$ . TPH-mo was reported in groundwater samples from borings SB-1, SB-2, SB-5, SB-6 and SB-8 at concentrations ranging from 300  $\mu\text{g/L}$  (SB-6) to 1400  $\mu\text{g/L}$  (SB-1 and SB-5).

MTBE was not reported by EPA Method 8021B in groundwater samples from any of the eight soil borings at or above a detection limit of 0.05  $\mu\text{g/L}$ .

The results of the groundwater analyses are summarized in Table 2 (Groundwater Sample Analytical Data) and shown on Figures 3 through 6.

## **ENVIRONMENTAL SETTING**

The site is located at approximately 180 feet above mean sea level (msl). The site is relatively flat and the local topography slopes very gently to south-southwest toward the nearest stream (Figure 1).

The lithology observed in the borings drilled to date typically consists of 1 to 2 feet of gravelly clay – clayey gravel (Fill). The fill is underlain by silty clay which becomes clayey silt downward to a depth of 6 to 8 feet bgs. The silt and clay are underlain by silty and gravelly sands to the top of the bedrock at depth of 13 to 17 feet bgs (Figure 7). In several borings saprolitic clay is present between the sandy sediments and the siltstone bedrock. Groundwater, where present, was encountered at depths of 9 to 11 feet bgs. The relationships of the sediments which underlie the site are shown on cross sections A-A' and B-B' (Figure 8).

The nearest surface water body to the site is a small unnamed creek, located approximately 500 feet southwest of the site that drains into San Lorenzo Creek.

## SCOPE OF WORK

Based on the results of the soil and groundwater analyses from the UST removal, and the preliminary site investigation, the ACHCSA has requested a scope of work to define the extent of the dissolved phase plume.

AEI proposes to drill three (3) temporary soil borings (labeled SB-9 through SB-11), three (3) 2-inch diameter monitoring wells and one (1) 4-inch monitoring/extraction well, as shown on Figure 2. The locations of the borings and wells were chosen to further assess the extent of the impact to soil and groundwater in the area around the former tank hold. All proposed work will be done under the direct supervision of an AEI Professional Geologist.

A summary of the rationale for the proposed boring and monitoring well locations is presented below.

### *Proposed Boring Location Summary*

<i>Boring IDs</i>	<i>Rationale</i>
SB-9	20 feet west of SB-5, delineate western extent of groundwater plume.
SB-10	20 feet north of SB-5, delineate northwestern extent of groundwater plume.
SB-11	20 feet northeast of SB-2, delineate northeastern extent of groundwater plume.
MW-1	East end of former tank hold, twin to SB-2 which contained LNAPL, monitoring/extraction
MW-2	Up gradient of tank hold, clean up gradient background monitoring well
MW-3	Down gradient monitoring well
MW-4	Down gradient monitoring well

## **SOIL BORINGS**

The soil borings will be advanced by Greg Drilling, a California C57 licensed drilling contractor using a Rhino drilling rig. A drilling permit will be obtained from Alameda County Public Works Department (ACPWA). The borings will be advanced into groundwater or to a maximum depth of 20 feet bgs or refusal in each boring, as needed to collect groundwater samples from the water table aquifer. Soil samples will be collected from each boring at approximately 5 foot intervals, with at least one sample from the capillary fringe. Selected sample will be placed in a 1-quart zipper locking plastic bag and used for field screening. The samples will be screened using a Mini RAE Plus Classic (Model PGM-76IS) photo ionization detector (PID). The tip of the PID will be inserted into the sealed 1-quart bag through a small diameter hole poked into the bag. The PID readings will be recorded on the boring logs. Additional samples may be collected based on field observations and organic vapor measurements collected in the field. A minimum of one soil sample will be analyzed from each boring, typically from the capillary fringe.

Those borings to be completed as monitoring wells will be drilled out using nominal 8-inch or 10-inch augers depending on the diameter of well to be installed.

All samples selected for laboratory analysis will be analyzed for TPH-g, TPH-d, and TPH-mo (EPA method 8015M); benzene, toluene, ethyl-benzene, and xylenes (BTEX) and MTBE (EPA method 8021M).

The soil borings will be logged by an AEI geologist using the Unified Soil Classification System (USCS). Copies of the boring logs, including depth of samples collected are included in Appendix B.

Upon completing the three (3) temporary soil borings, ¾" slotted PVC casing will be installed to allow for groundwater recharge. Groundwater samples will be collected using a drop tube or mini bailer. Following collection of samples, all drilling equipment and temporary casing material will be removed from the boreholes and each boring will be backfilled with neat cement grout as per ACPWA guidelines.

Drill cuttings will be stored in 55-gallon drums, pending the results of sample analyses. On-site treatment or off-site disposal of cuttings is not included in this scope of work. Equipment rinse water and well purge water will be stored in 55-gallon drums.

## **MONITORING WELL COMPLETION**

The groundwater monitoring wells will be drilled to a depth of 20 feet bgs or refusal which ever is encountered first. Well MW-1, which is to be installed near boring SB-2 which contained LNAPL, will be drilled using nominal 10-inch augers and completed by installing 4-inch diameter schedule 40 PVC casing. Wells MW-2 through MW-4 will be drilled with nominal 8-

inch augers and completed with 2-inch diameter schedule 40 PVC casing. Both 4 and 2-inch wells will be completed with schedule 40 PVC casing with 0.010 slots. The slotted intervals will extend from total depth to approximately 7 feet bgs. A traffic-rated, flush-mounted well box will be installed at the surface.

The wells will be developed no sooner than 72 hours after seal placement by surging, bailing, and purging to remove accumulated fines from the casing and sand pack.

Each well will be surveyed relative to each other, mean sea level, and a known datum by a California licensed land surveyor. The survey and sample data will be uploaded to GeoTracker.

## **REPORTING**

The report will detail the methods and findings of the first phase of temporary borings and installation and sampling of the wells. Following receipt of all analytical and well survey data, a technical report will be prepared. The final report will include figures, data tables, logs of borings and well construction details, and interpretation of the contaminant distributions. Recommendations may be made for further assessment necessary for the preparation of a closure report or in anticipation of the corrective action planning. Quarterly monitoring reports will be submitted within approximately one month of monitoring and sample collection activities.

## **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, including an explanation of the hazards of the known or suspected chemicals of interest. All site personnel will be in Level D personal protection equipment, which is the anticipated maximum amount of protection needed. 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. A site safety plan conforming to Part 1910.120 (i) (2) of 29 CFR will be on site at all times during the project.

## **ESTIMATED SCHEDULE**

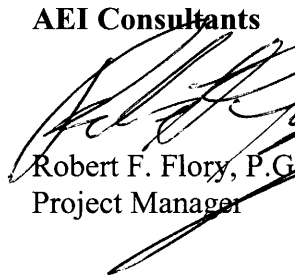
Once the scope of work has been agreed upon by the ACEHS, project permitting will begin. Drilling will be scheduled upon approval of permits. Reports will be available within approximately 1 month of receipt of all necessary data.

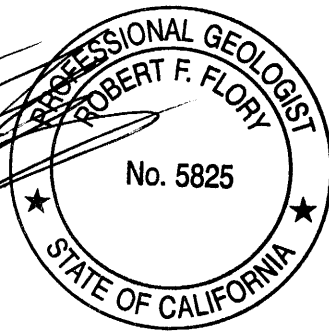
## REFERENCED REPORTS

1. *Geotechnical Exploration and Engineering Study, Proposed Baker Road Apartments*, December 3, 1986, prepared by JMK Environmental Solutions, Inc.
2. *Underground Storage Tank removal Final Report*, May 19, 2004, prepared by AEI Consultants
3. *Preliminary Site Investigation Report*, June 5, 2005, prepared by AEI Consultants

AEI requests your comments and approval to proceed with this project. Please contact me at (925) 944-2899, extension 122, if you have any questions or need any additional information.

Sincerely,  
AEI Consultants

  
Robert F. Flory, P.G.  
Project Manager



A circular professional seal for Robert F. Flory, a Professional Geologist in the State of California. The seal contains the text "PROFESSIONAL GEOLOGIST" at the top, "ROBERT F. FLORY" in the center, "No. 5825" below the name, and "STATE OF CALIFORNIA" at the bottom with two stars on either side.

**Figure 1** – Site Location Map

**Figure 2** – Site Map

Distribution:

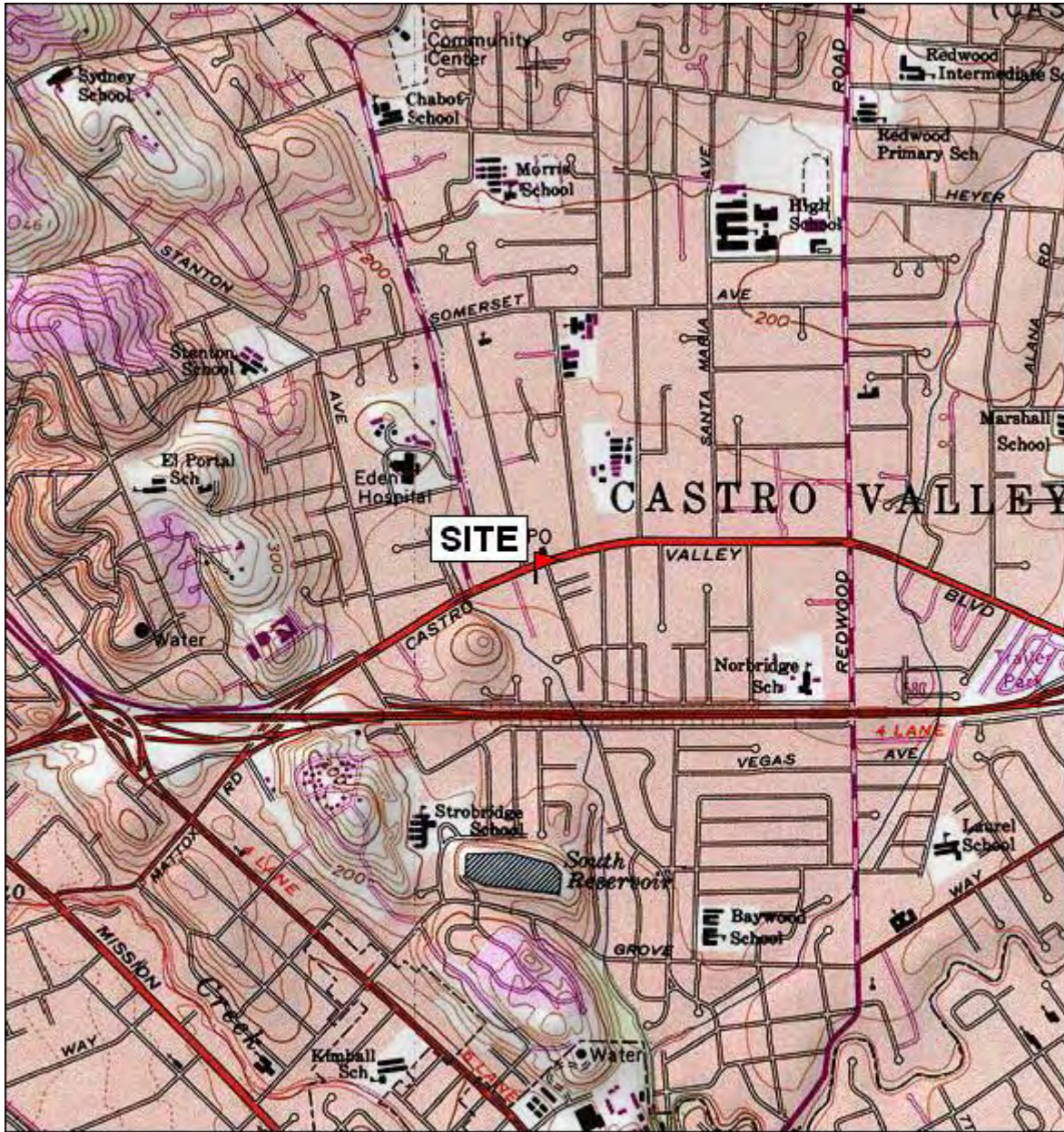
File

Nat Piazza, 7613 Pepper Tree Road, Dublin, California, 94568-3343 -2 copies

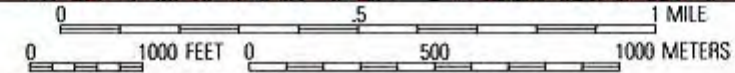
Amir Gohlami, Alameda County Environmental Health Care Services, 1131 Harbor Bay parkway, Suite 250,  
Alameda, California 94502-6577



## **FIGURES**



TN  $\nearrow$  MN  
15°

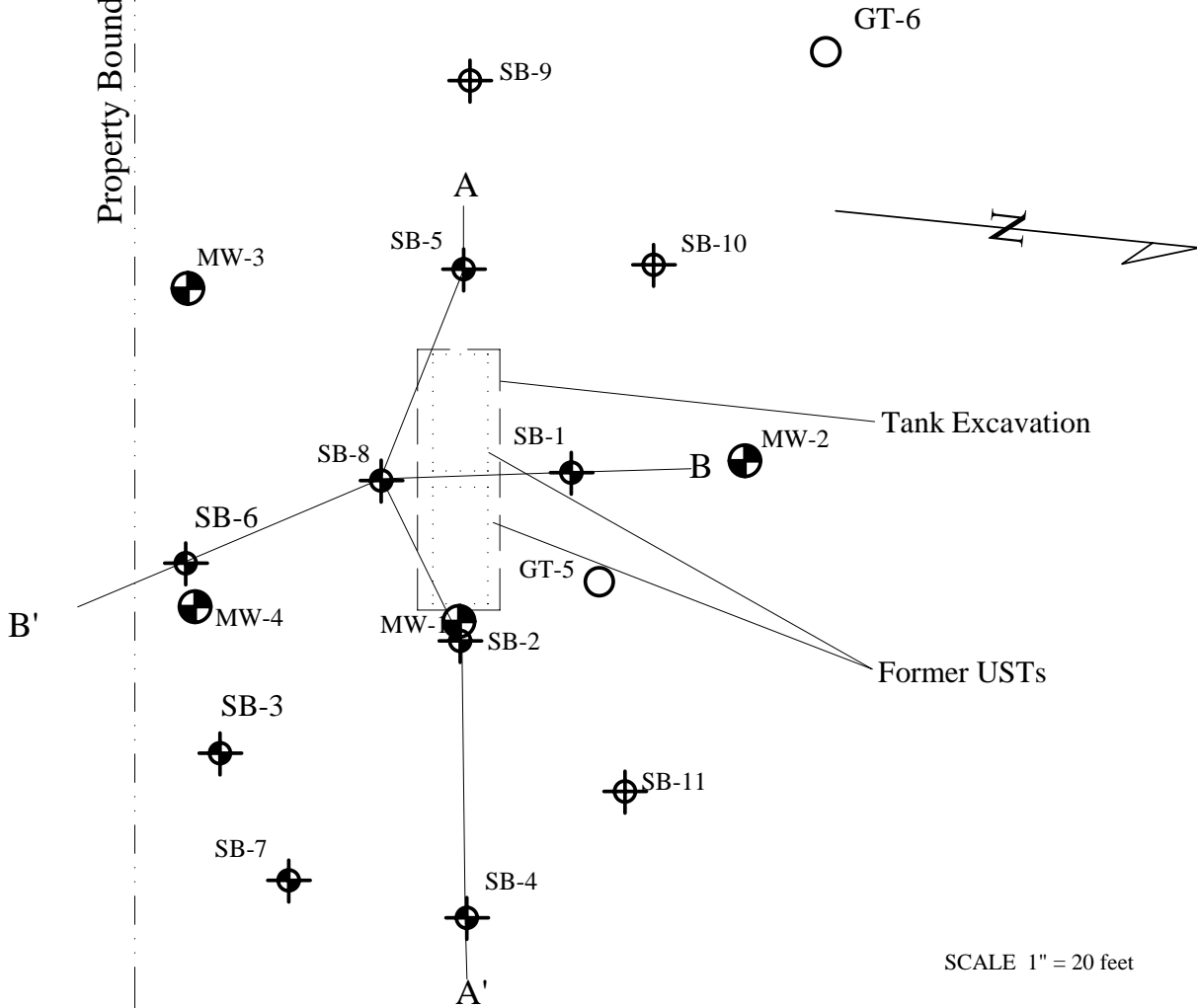


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<b>AEI CONSULTANTS</b>	
<b>SITE LOCATION MAP</b>	
20957 BAKER ROAD CASTRO VALLEY, CALIFORNIA	<b>FIGURE 1</b> PROJECT No. 10509

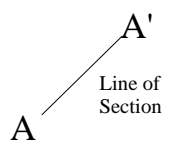
Rutledge Road

Property Boundary



SCALE 1" = 20 feet

- GT-1 Geotechnical Boring - 1986
- ⊕ SB-1 Soil Borings - 5/18/05
- ⊕ MW-1 Proposed Wells
- ⊕ SB-11 Proposed Soil Borings



**AEI CONSULTANTS**  
2500 CAMINO DIABLO, SUITE 100 WALNUT CREEK, CA

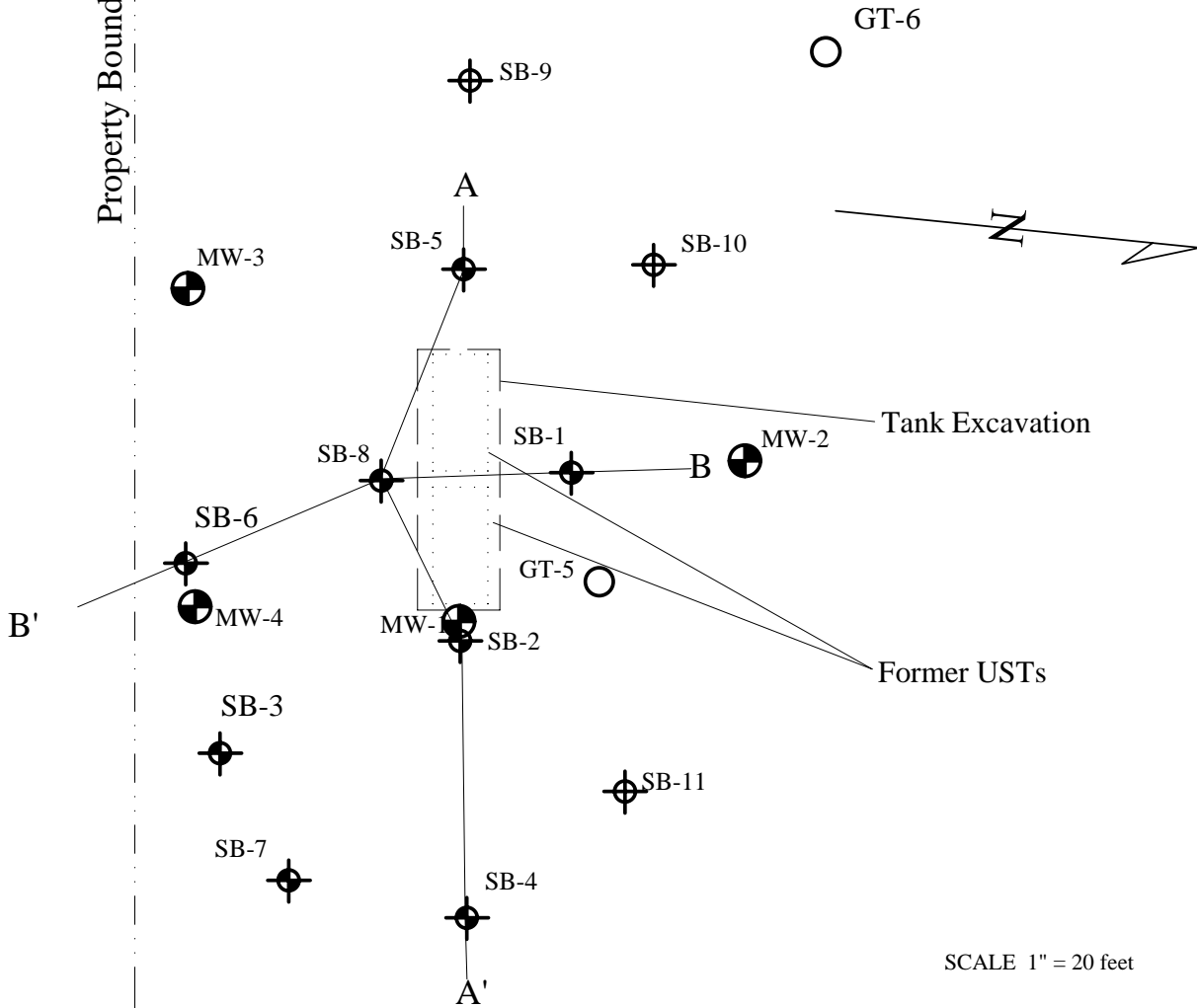
**DETAIL SITE PLAN**

20957 BAKER ROAD  
CASTRO VALLEY, CA

FIGURE 3  
Project No. 10509

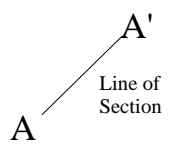
Rutledge Road

Property Boundary



SCALE 1" = 20 feet

- GT-1 Geotechnical Boring - 1986
- ⊕ SB-1 Soil Borings - 5/18/05
- ⊗ MW-1 Proposed Wells
- ⊕ SB-11 Proposed Soil Borings



**AEI CONSULTANTS**  
2500 CAMINO DIABLO, SUITE 100 WALNUT CREEK, CA

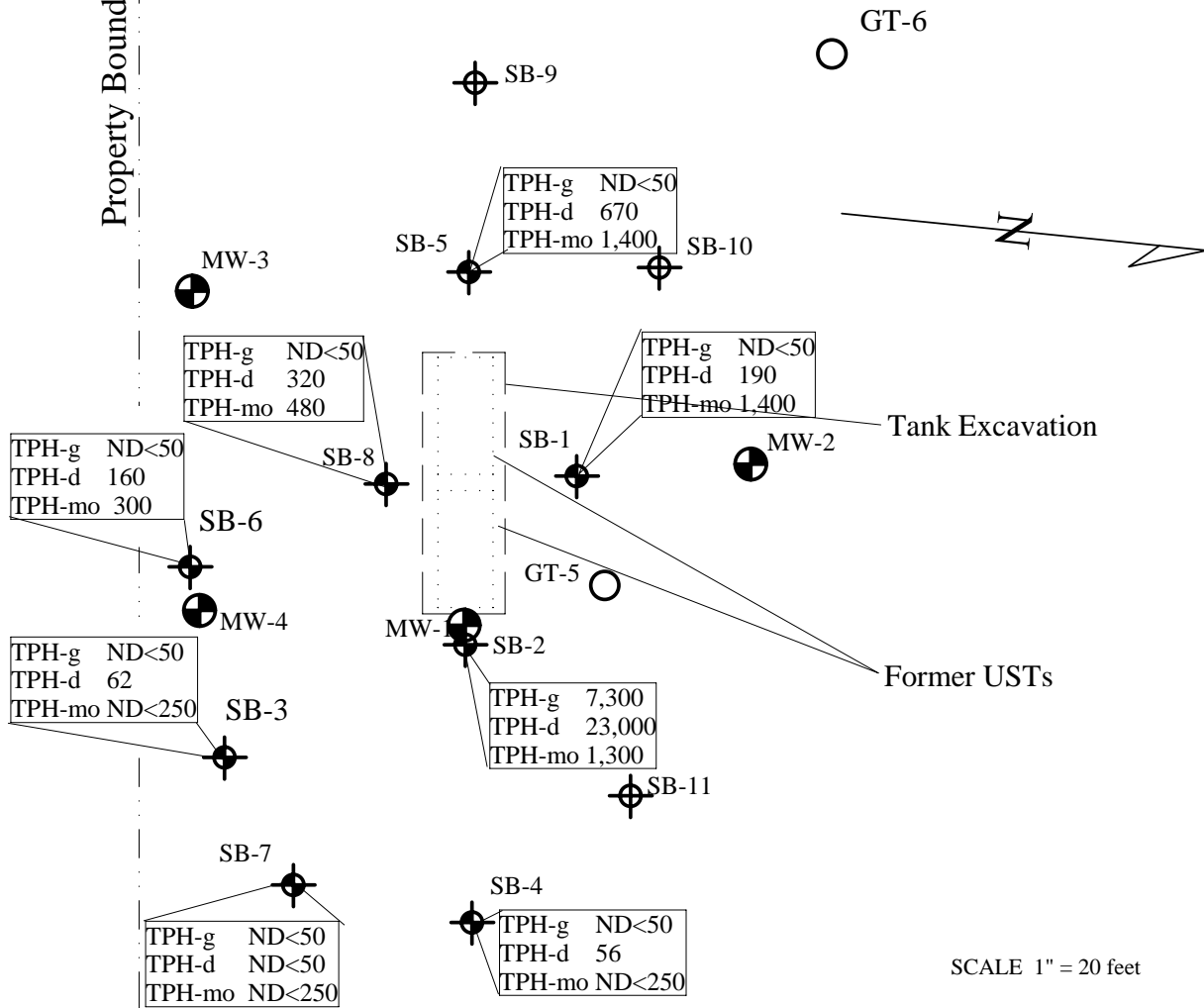
**DETAIL SITE PLAN**

20957 BAKER ROAD  
CASTRO VALLEY, CA

FIGURE 3  
Project No. 10509

Rutledge Road

Property Boundary



- GT-1 Geotechnical Boring - 1986
- ⊕ SB-1 Soil Borings - 5/18/05
- ⊙ MW-1 Proposed Wells
- ⊕ SB-11 Proposed Soil Borings

TPH-g 7,300  
 TPH-d 23,000  
 TPH-mo 1,300  
 Units µg/L

SCALE 1" = 20 feet

**AEI CONSULTANTS**  
 2500 CAMINO DIABLO, SUITE 100 WALNUT CREEK, CA

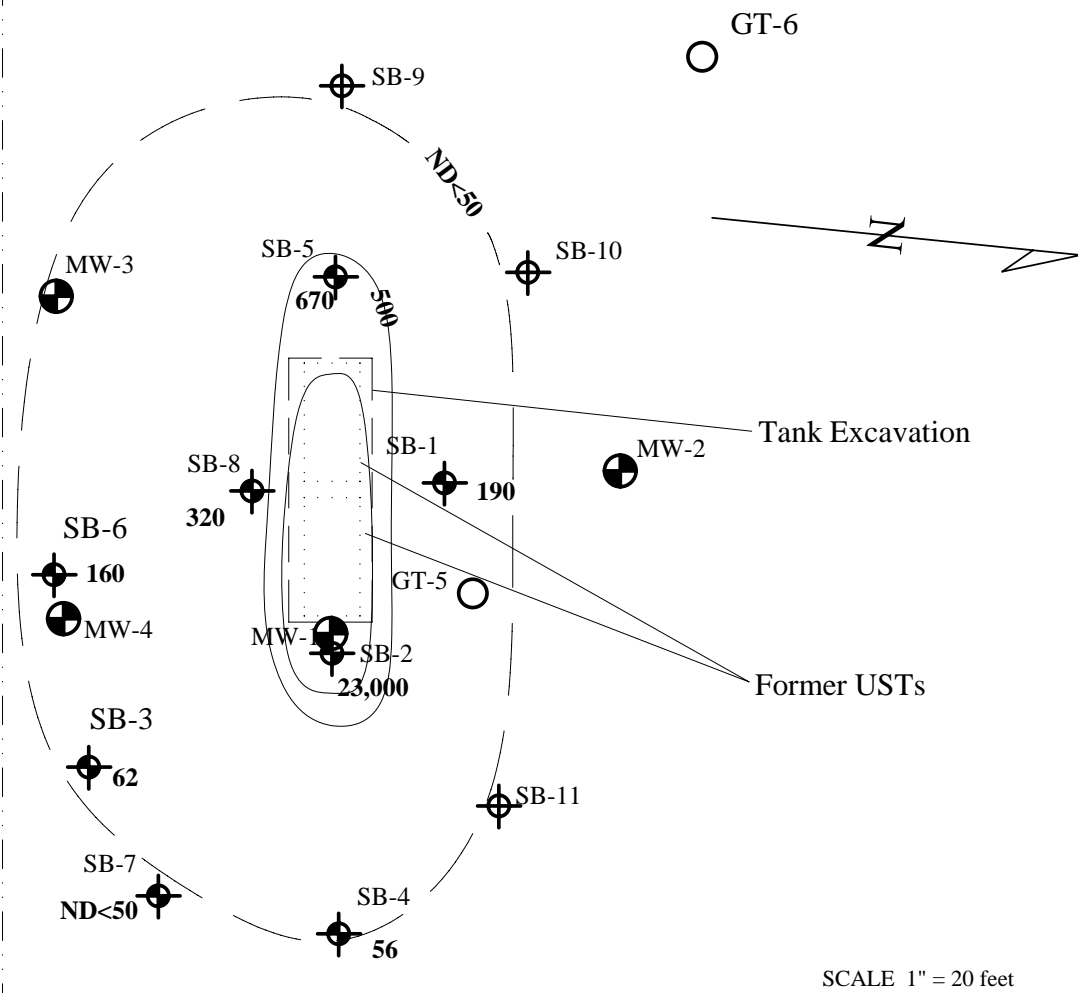
**GROUNDWATER ANALYTICAL RESULTS (5/18/05)**

20957 BAKER ROAD  
 CASTRO VALLEY, CA

**FIGURE 4**  
 Project No. 10509

Rutledge Road

Property Boundary



SCALE 1" = 20 feet

- GT-1 Geotechnical Boring - 1986
- 62 ⊕ SB-1 Soil Borings - 5/18/05 Units µg/L
- ⊕ MW-1 Proposed Wells
- ⊕ SB-11 Proposed Soil Borings

**AEI CONSULTANTS**  
2500 CAMINO DIABLO, SUITE 100 WALNUT CREEK, CA

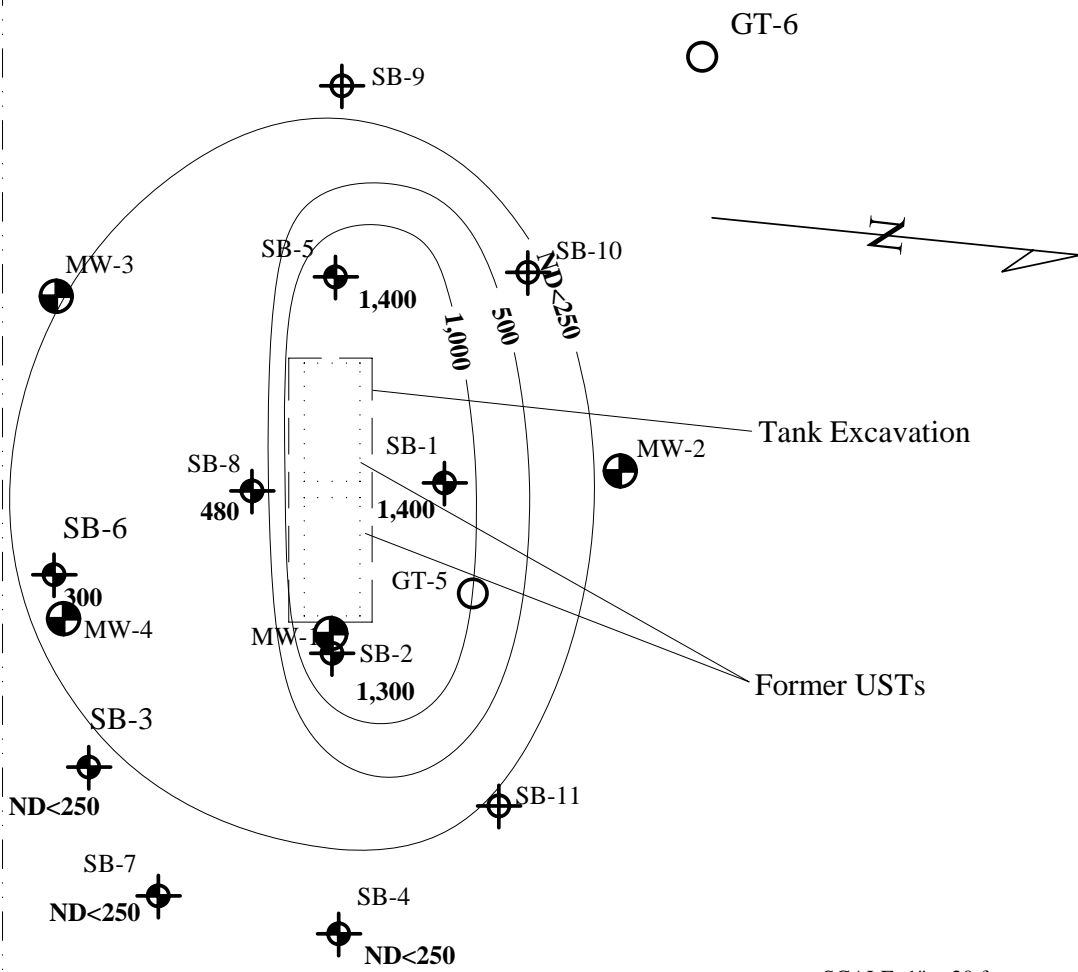
**TPH-d Isopleths**

20957 BAKER ROAD  
CASTRO VALLEY, CA

FIGURE 5  
Project No. 10509

Rutledge Road

Property Boundary



- GT-1 Geotechnical Boring - 1986
- ⊕ SB-1 Soil Borings - 5/18/05 Units µg/L
- MW-1 Proposed Wells
- ⊕ SB-11 Proposed Soil Borings

**AEI CONSULTANTS**  
2500 CAMINO DIABLO, SUITE 100 WALNUT CREEK, CA

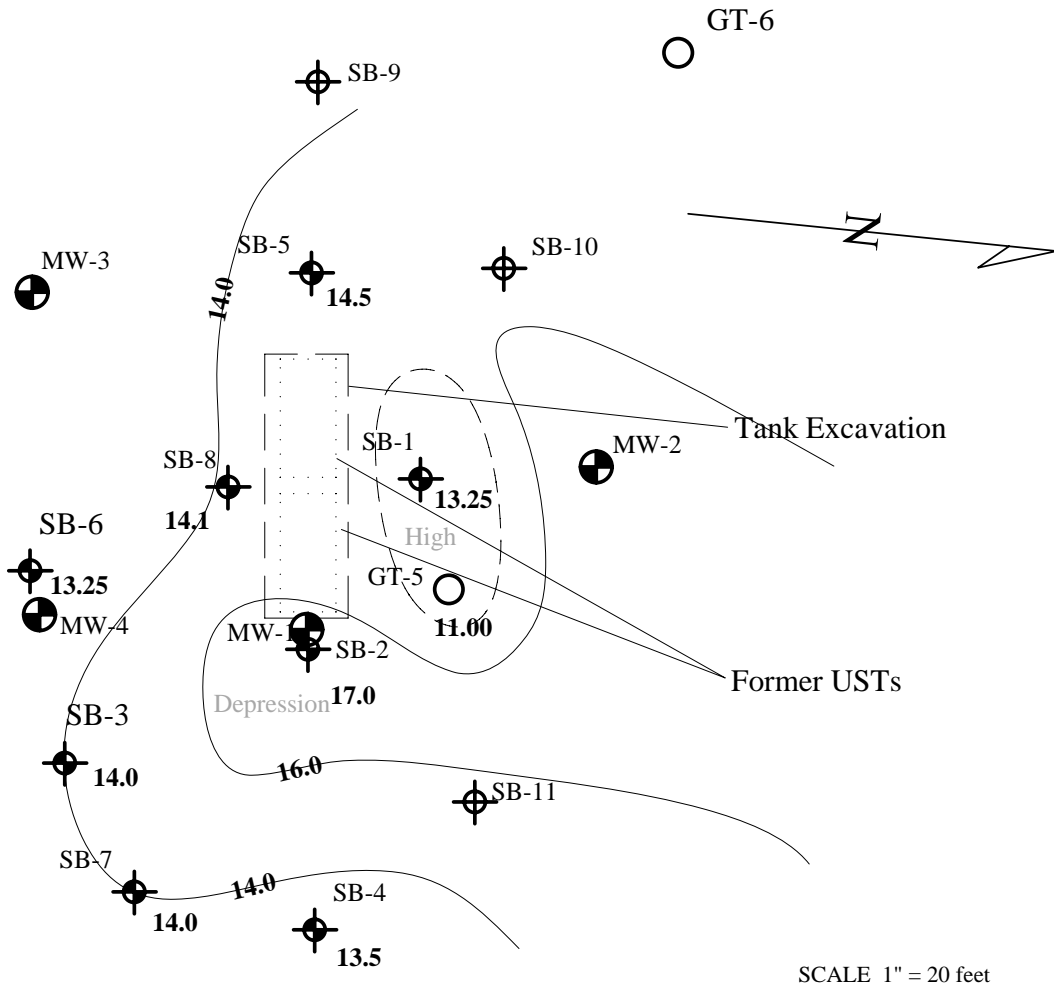
**TPH-mo Isopleths**

20957 BAKER ROAD  
CASTRO VALLEY, CA

**FIGURE 6**  
Project No. 10509

Rutledge Road

Property Boundary



- GT-1 Geotechnical Boring - 1986
- ⊕ SB-1 Soil Borings - 5/18/05
- ⊕ MW-1 Proposed Wells
- ⊕ SB-11 Proposed Soil Borings

**AEI CONSULTANTS**  
2500 CAMINO DIABLO, SUITE 100 WALNUT CREEK, CA

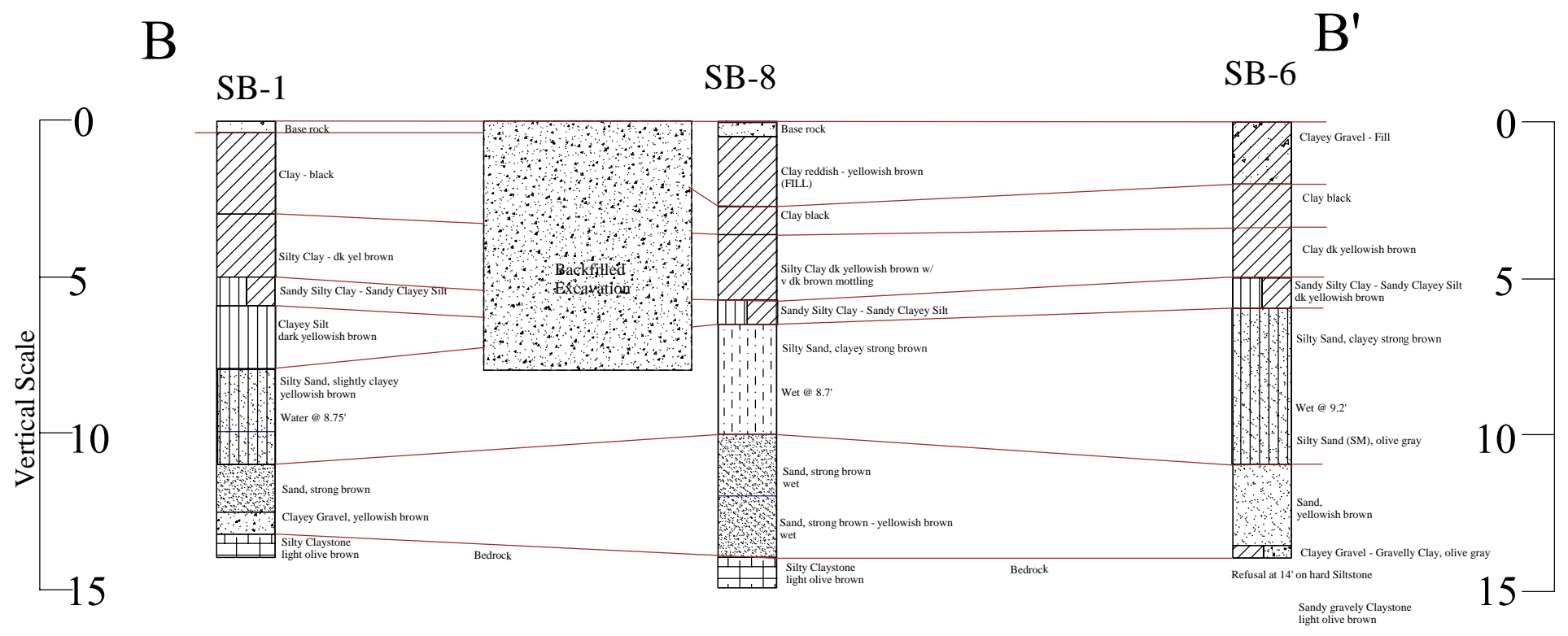
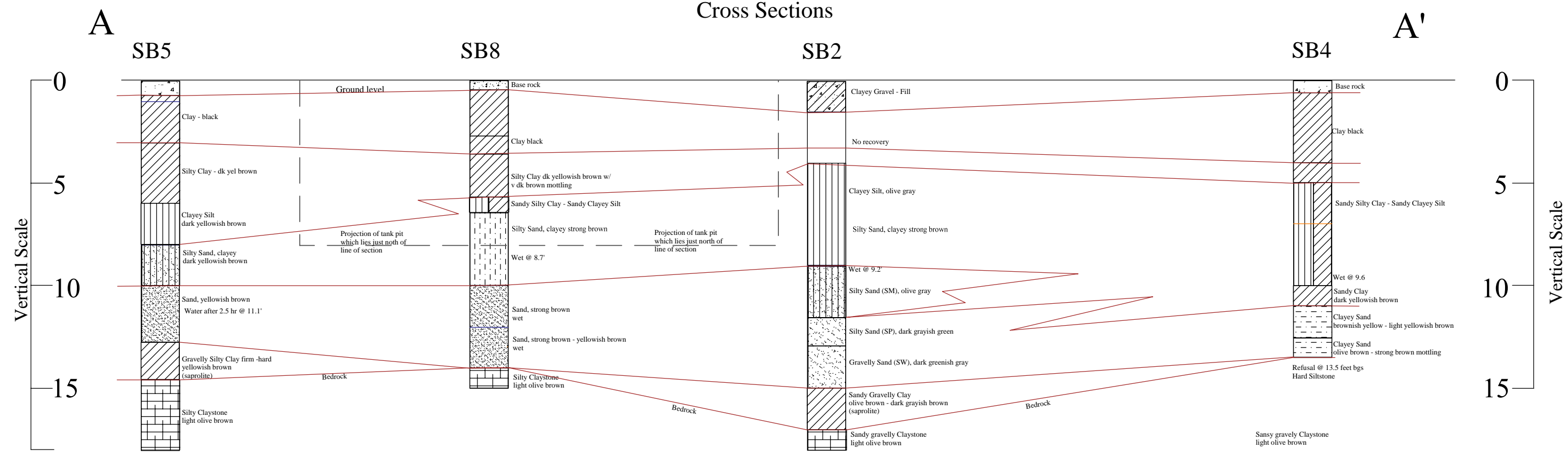
**Depth to Bedrock**

20957 BAKER ROAD  
CASTRO VALLEY, CA

FIGURE 7  
Project No. 10509



### Cross Sections



**KEY**

- Clay
- Sandy Clay
- Silt
- Silty Sand
- Clayey Sand
- Sand
- Gravel

Horizontal Scale  
Approximate

<p><b>AEI CONSULTANTS</b> 2500 CAMINO DIABLO, SUITE 100 WALNUT CREEK, CA</p>	
<p><b>Cross Section B - B'</b></p>	
<p>Piazza 20957 Baker Road Castro Valley, California</p>	<p>FIGURE 8 Project No. 10509</p>

Drafted 12/8/05 by RFF

## **TABLES**

**Table 1, Soil Sample Analytical Data, 20957 Baker Road, Castro Valley, California**

Sample ID	TPH-g	TPH-d	TPH-mo	MTBE	Benzene	Toluene	E'benzene	Xylenes
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
<i>EPA method 8015</i>			<i>EPA method 8021B</i>					
SB1-11.5	ND<1.0	ND<1.0	ND<5.0	ND<0.05	ND<0.005	ND<0.005	ND<0.005	ND<0.005
SB2-10	ND<1.0	ND<1.0	ND<5.0	ND<0.05	ND<0.005	ND<0.005	ND<0.005	ND<0.005
SB3-7.5	ND<1.0	ND<1.0	ND<5.0	ND<0.05	ND<0.005	ND<0.005	ND<0.005	ND<0.005
SB4-7.5	ND<1.0	ND<1.0	ND<5.0	ND<0.05	ND<0.005	ND<0.005	ND<0.005	ND<0.005
SB5-7.5	ND<1.0	ND<1.0	ND<5.0	ND<0.05	ND<0.005	ND<0.005	ND<0.005	ND<0.005
SB6-7.5	ND<1.0	ND<1.0	ND<5.0	ND<0.05	ND<0.005	ND<0.005	ND<0.005	ND<0.005
SB7-8	ND<1.0	ND<1.0	ND<5.0	ND<0.05	ND<0.005	ND<0.005	ND<0.005	ND<0.005
SB8-7.5	ND<1.0	ND<1.0	ND<5.0	ND<0.05	ND<0.005	ND<0.005	ND<0.005	ND<0.005

Notes

TPH-g = total petroleum hydrocarbons as gasoline

TPH-d = total petroleum hydrocarbons as diesel

TPH-mo = total petroleum hydrocarbons as motor oil

MTBE = methyl tert-butyl ether

mg/kg = micrograms per liter (parts per billion)

**Table 2, Groundwater Sample Analytical Data, 20957 Baker Road, Castro Valley, California**

Sample ID	TPH-g	TPH-d	TPH-mo	MTBE	Benzene	Toluene	E'benzene	Xylenes
	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
<i>EPA method 8015</i>			<i>EPA method 8021B</i>					
SB-1 W	ND<50	190 <sup>1,2</sup>	1400	ND<5.0	ND<0.5	ND<0.5	ND<0.5	ND<0.5
SB-2 W	7,300 <sup>3,4</sup>	23,000 <sup>1,2,4,5</sup>	1300	ND<50	ND<5.0	11	ND<5.0	27
SB3-W	ND<50	62	ND<250	ND<5.0	ND<0.5	ND<0.5	ND<0.5	ND<0.5
SB4-W	ND<50	56 <sup>2</sup>	ND<250	ND<5.0	ND<0.5	ND<0.5	ND<0.5	ND<0.5
SB5-W	ND<50	670 <sup>1,2</sup>	1400	ND<5.0	ND<0.5	ND<0.5	ND<0.5	ND<0.5
SB6-W	ND<50	160 <sup>1,2</sup>	300	ND<5.0	ND<0.5	ND<0.5	ND<0.5	ND<0.5
SB7-W	ND<50	ND<50	ND<250	ND<5.0	ND<0.5	ND<0.5	ND<0.5	ND<0.5
SB8-W	ND<50	320 <sup>1,2</sup>	480	ND<5.0	ND<0.5	ND<0.5	ND<0.5	ND<0.5

Notes

- 1 - oil range compounds are significant
- 2 = diesel range compounds are significant, no recognizable pattern
- 3 = no recognizable pattern
- 4 = lighter than water immiscible sheen/product is present
- 5 = gasoline range compounds are significant

- TPH-g = total petroleum hydrocarbons as gasoline
- TPH-d = total petroleum hydrocarbons as diesel
- TPH-mo = total petroleum hydrocarbons as motor oil
- MTBE = methyl tert-butyl ether
- µg/l = micrograms per liter (parts per billion)

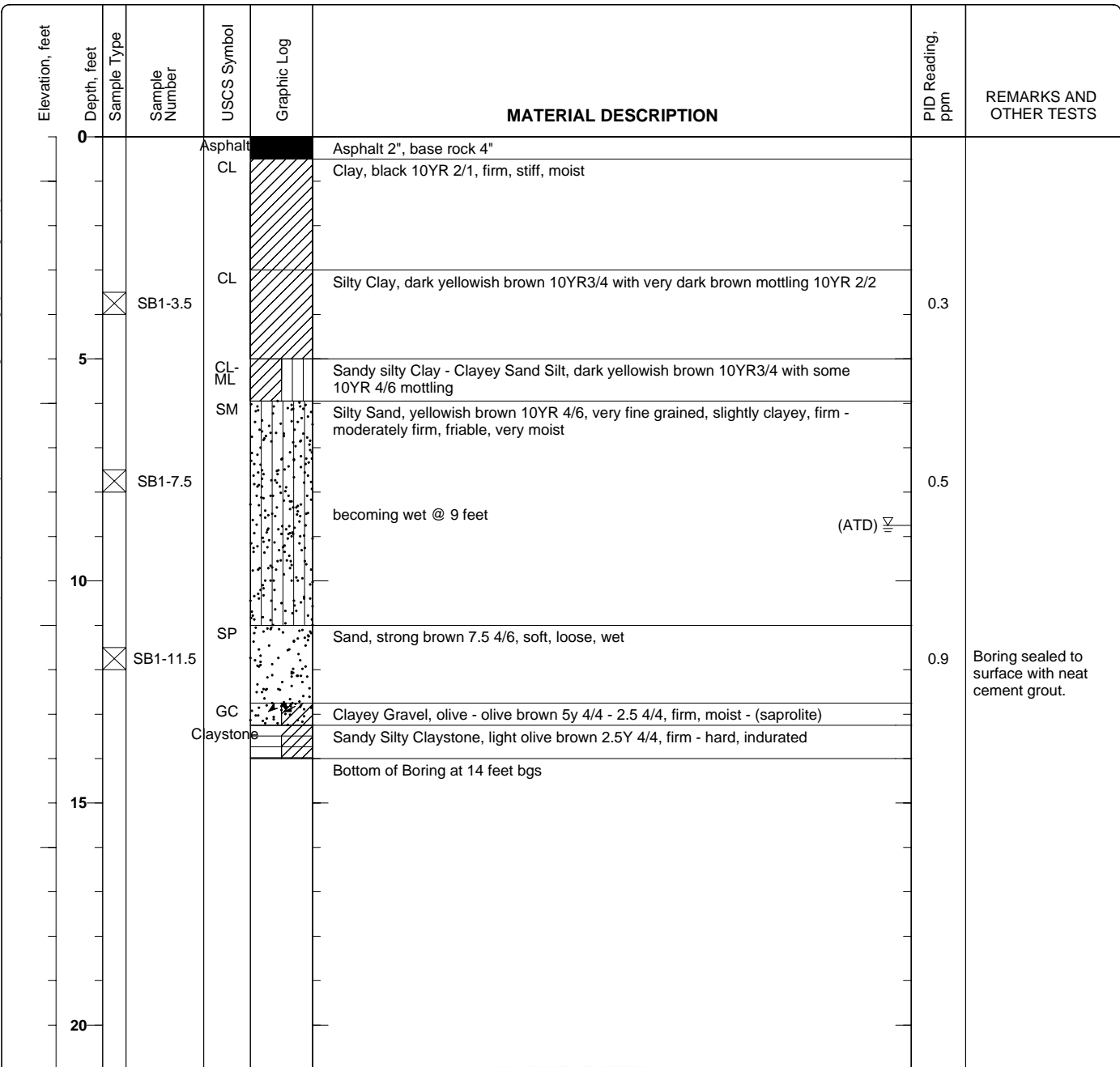
## **APPENDIX A**

### **Boring Logs**

**Project: Piazza**  
**Project Location: 20957 Baker Road, Castro Valley, CA**  
**Project Number: 10509**

**Log of Boring SB-1**  
 Sheet 1 of 1

Date(s) Drilled <b>May 18, 2005</b>	Logged By <b>Robert F. Flory</b>	Checked By <b>Adrian Angel</b>
Drilling Method <b>Geoprobe</b>	Drill Bit Size/Type	Total Depth of Borehole <b>14 feet bgs</b>
Drill Rig Type <b>Geoprobe 5410</b>	Drilling Contractor <b>EnProb</b>	Approximate Surface Elevation
Groundwater Level and Date Measured <b>8.75 feet ATD</b>	Sampling Method(s) <b>Tube</b>	Permit #
Borehole Backfill <b>Cement Slurry</b>	Location	



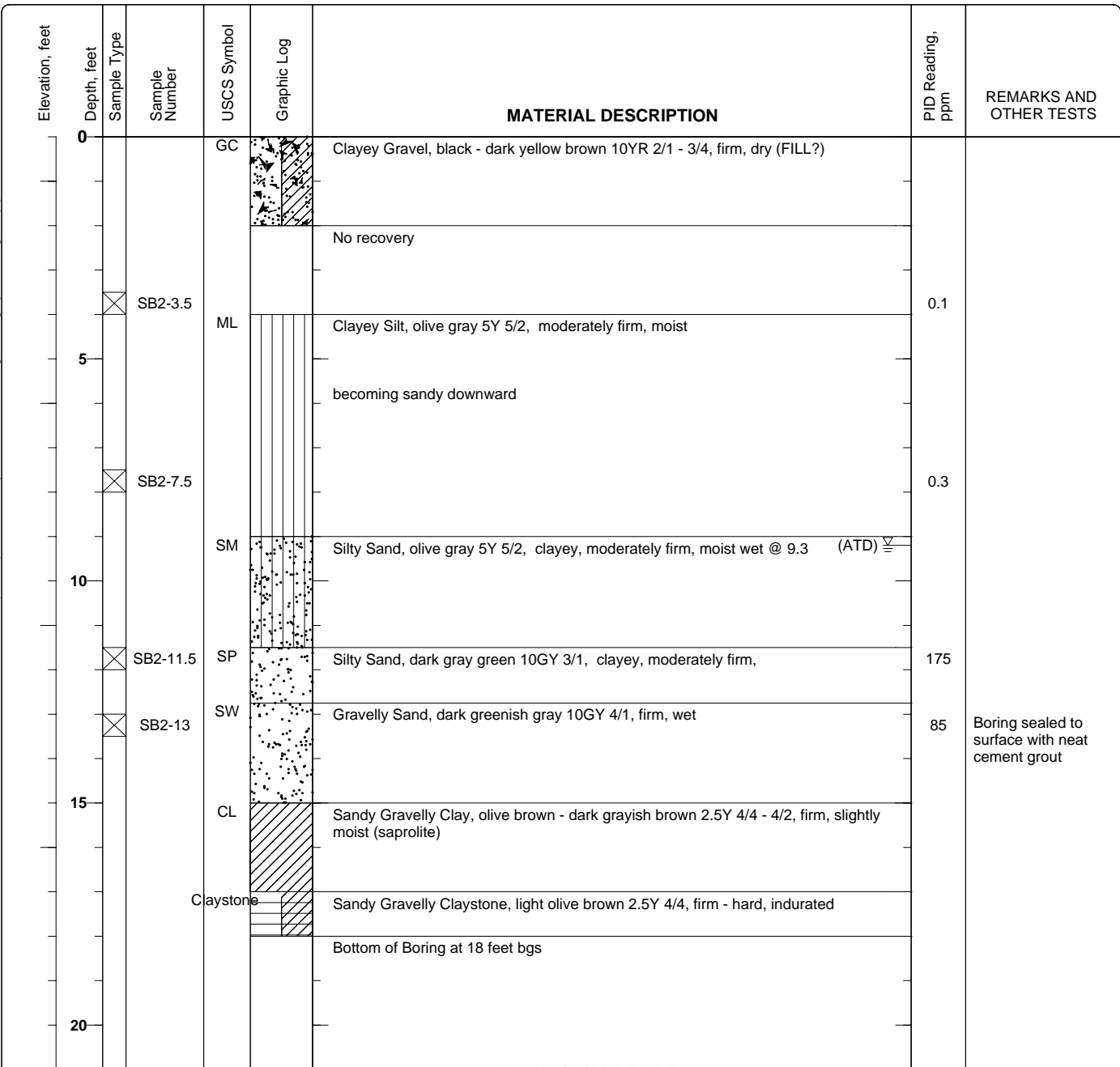
Figure

X:\PROJECTS\CHARACTERIZATION & REMEDIATION\CHARACTERIZATION\10509 PH II (Piazza) Castro Valley\Work Plan 2\Borings +8.bgs [DP Boring 20.tpl]

**Project: Piazza**  
**Project Location: 20957 Baker Road, Castro Valley, CA**  
**Project Number: 10509**

**Log of Boring SB-2**  
 Sheet 1 of 1

Date(s) Drilled <b>May 18, 2005</b>	Logged By <b>Robert F. Flory</b>	Checked By <b>Adrian Angel</b>
Drilling Method <b>Geoprobe</b>	Drill Bit Size/Type <b>2 inch</b>	Total Depth of Borehole <b>18 feet bgs</b>
Drill Rig Type <b>Geoprobe 5410</b>	Drilling Contractor <b>EnProb</b>	Approximate Surface Elevation
Groundwater Level and Date Measured <b>9.2 feet ATD</b>	Sampling Method(s) <b>Tube</b>	Permit #
Borehole Backfill <b>Cement Slurry</b>	Location	



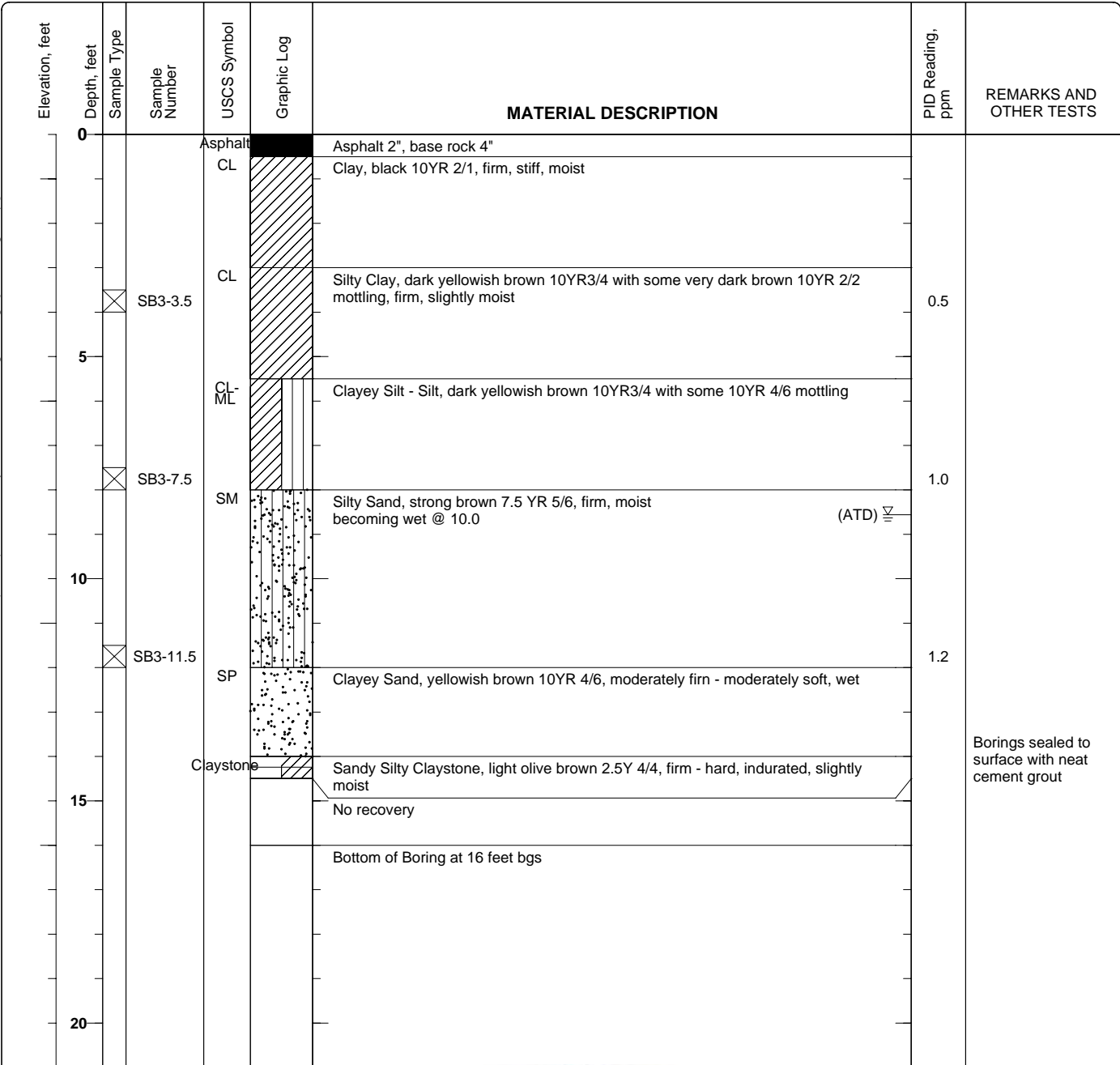
Figure

X:\PROJECTS\CHARACTERIZATION & REMEDIATION\CHARACTERIZATION\10509 PH II (Piazza) Castro Valley\Work Plan 2\Borings 1-8.bgs [DP Boring 20.tpl]

**Project: Piazza**  
**Project Location: 20957 Baker Road, Castro Valley, CA**  
**Project Number: 10509**

**Log of Boring SB-3**  
 Sheet 1 of 1

Date(s) Drilled <b>May 18, 2005</b>	Logged By <b>Robert F. Flory</b>	Checked By <b>Adrian Angel</b>
Drilling Method <b>Geoprobe</b>	Drill Bit Size/Type <b>2 inch</b>	Total Depth of Borehole <b>16 feet bgs</b>
Drill Rig Type <b>Geoprobe 5410</b>	Drilling Contractor <b>EnProb</b>	Approximate Surface Elevation
Groundwater Level and Date Measured <b>8.56 feet ATD</b>	Sampling Method(s) <b>Tube</b>	Permit #
Borehole Backfill <b>Cement Slurry</b>	Location	



Figure

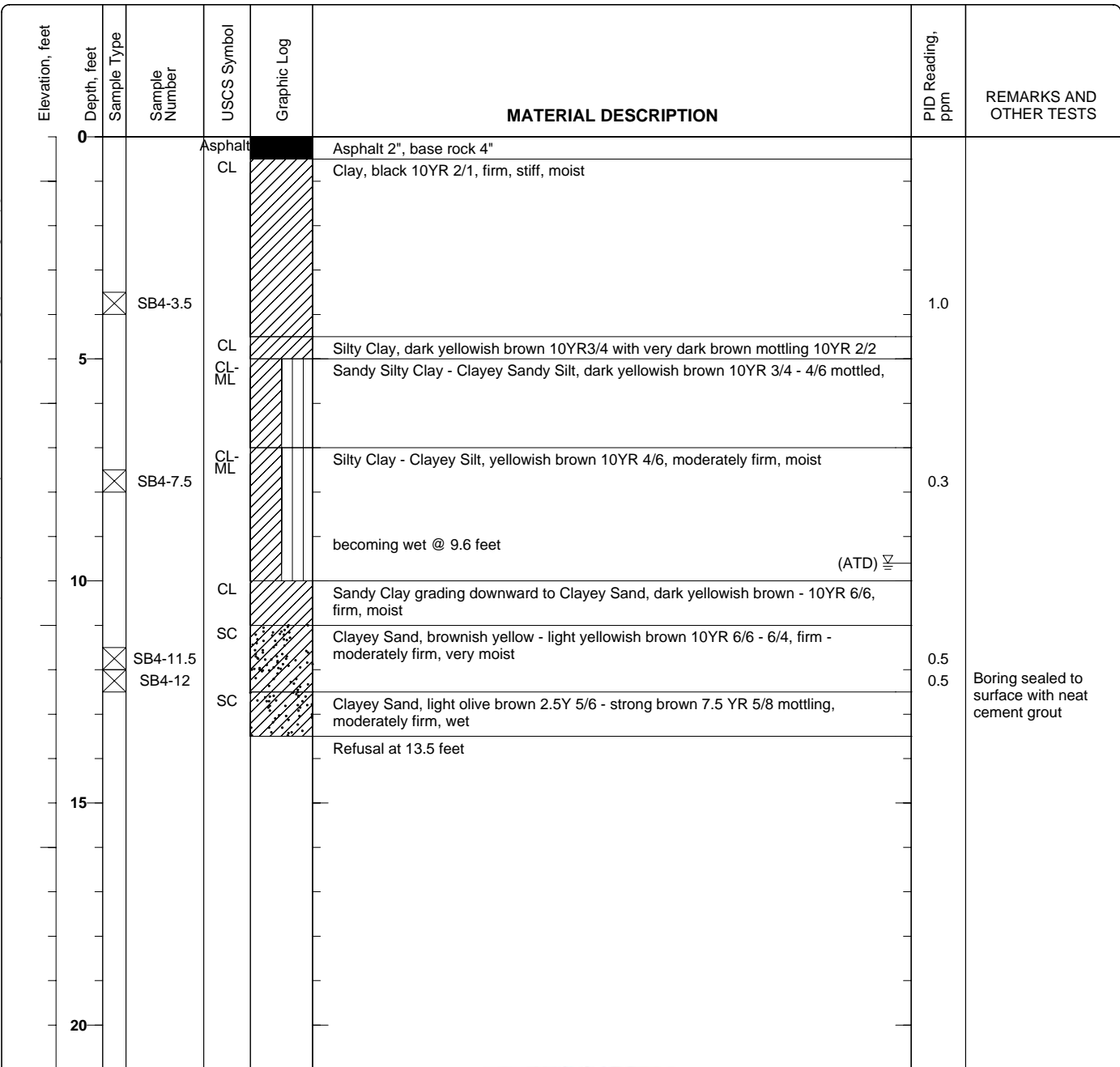
X:\PROJECTS\CHARACTERIZATION & REMEDIATION\CHARACTERIZATION\10509 PH II (Piazza) Castro Valley\Work Plan 2\Borings 1-8.bgs [DP Boring 20.tpl]



**Project: Piazza**  
**Project Location: 20957 Baker Road, Castro Valley, CA**  
**Project Number: 10509**

**Log of Boring SB-4**  
 Sheet 1 of 1

Date(s) Drilled <b>May 18, 2005</b>	Logged By <b>Robert F. Flory</b>	Checked By <b>Adrian Angel</b>
Drilling Method <b>Geoprobe</b>	Drill Bit Size/Type <b>2 inch</b>	Total Depth of Borehole <b>13.5 feet bgs</b>
Drill Rig Type <b>Geoprobe 5410</b>	Drilling Contractor <b>EnProb</b>	Approximate Surface Elevation
Groundwater Level and Date Measured <b>9.6 feet ATD</b>	Sampling Method(s) <b>Tube</b>	Permit #
Borehole Backfill <b>Cement Slurry</b>	Location	



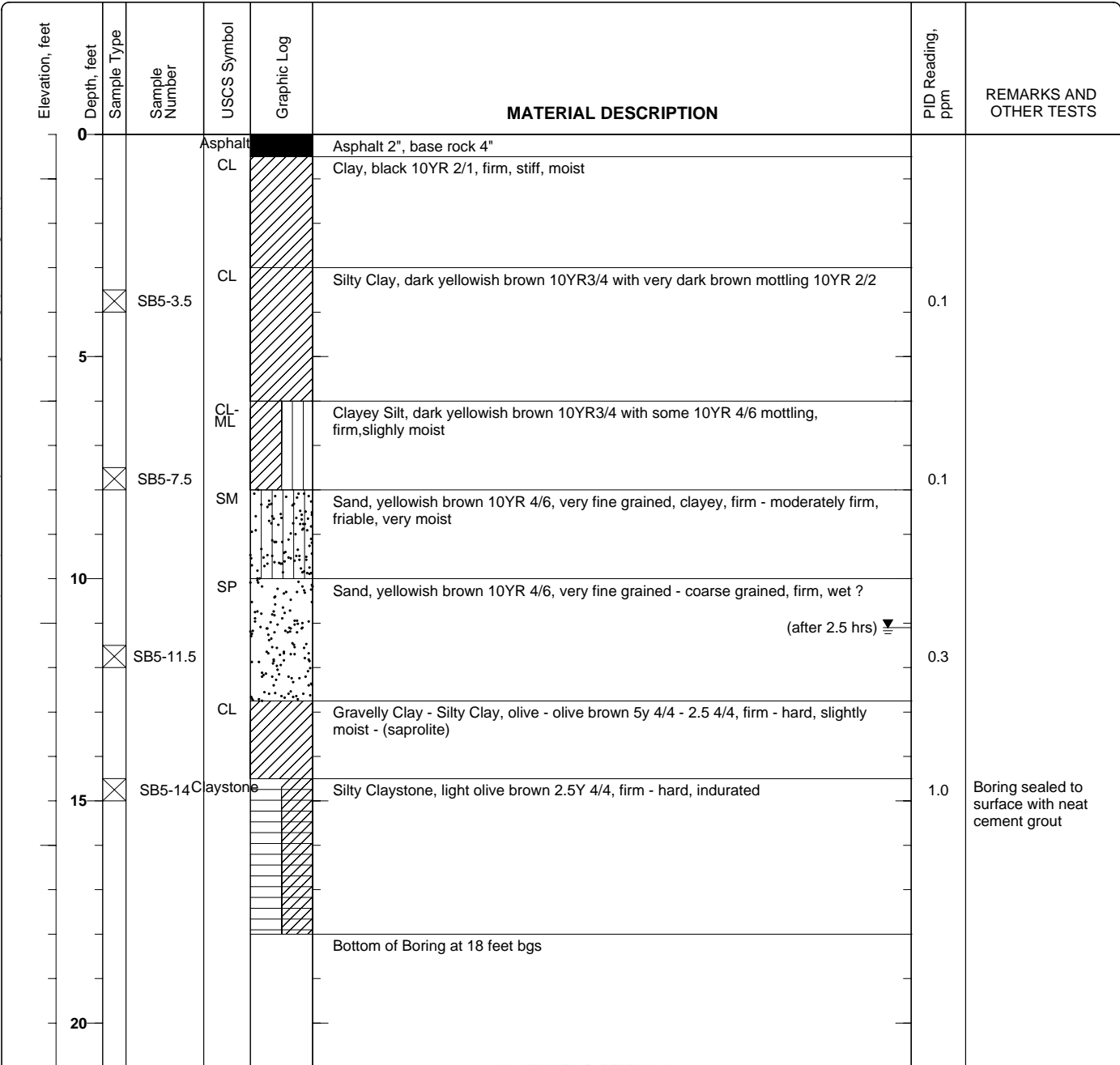
Figure

X:\PROJECTS\CHARACTERIZATION & REMEDIATION\CHARACTERIZATION\10509 PH II (Piazza) Castro Valley\Work Plan 2\Borings +8.bgs [DP Boring 20.tpl]

**Project: Piazza**  
**Project Location: 20957 Baker Road, Castro Valley, CA**  
**Project Number: 10509**

**Log of Boring SB-5**  
 Sheet 1 of 1

Date(s) Drilled <b>May 18, 2005</b>	Logged By <b>Robert F. Flory</b>	Checked By <b>Adrian Angel</b>
Drilling Method <b>Geoprobe</b>	Drill Bit Size/Type <b>2 inch</b>	Total Depth of Borehole <b>18 feet bgs</b>
Drill Rig Type <b>Geoprobe 5410</b>	Drilling Contractor <b>EnProb</b>	Approximate Surface Elevation
Groundwater Level and Date Measured <b>Dry feet ATD, 11.1 feet after 2.5 hrs</b>	Sampling Method(s) <b>Tube</b>	Permit #
Borehole Backfill <b>Cement Slurry</b>	Location	



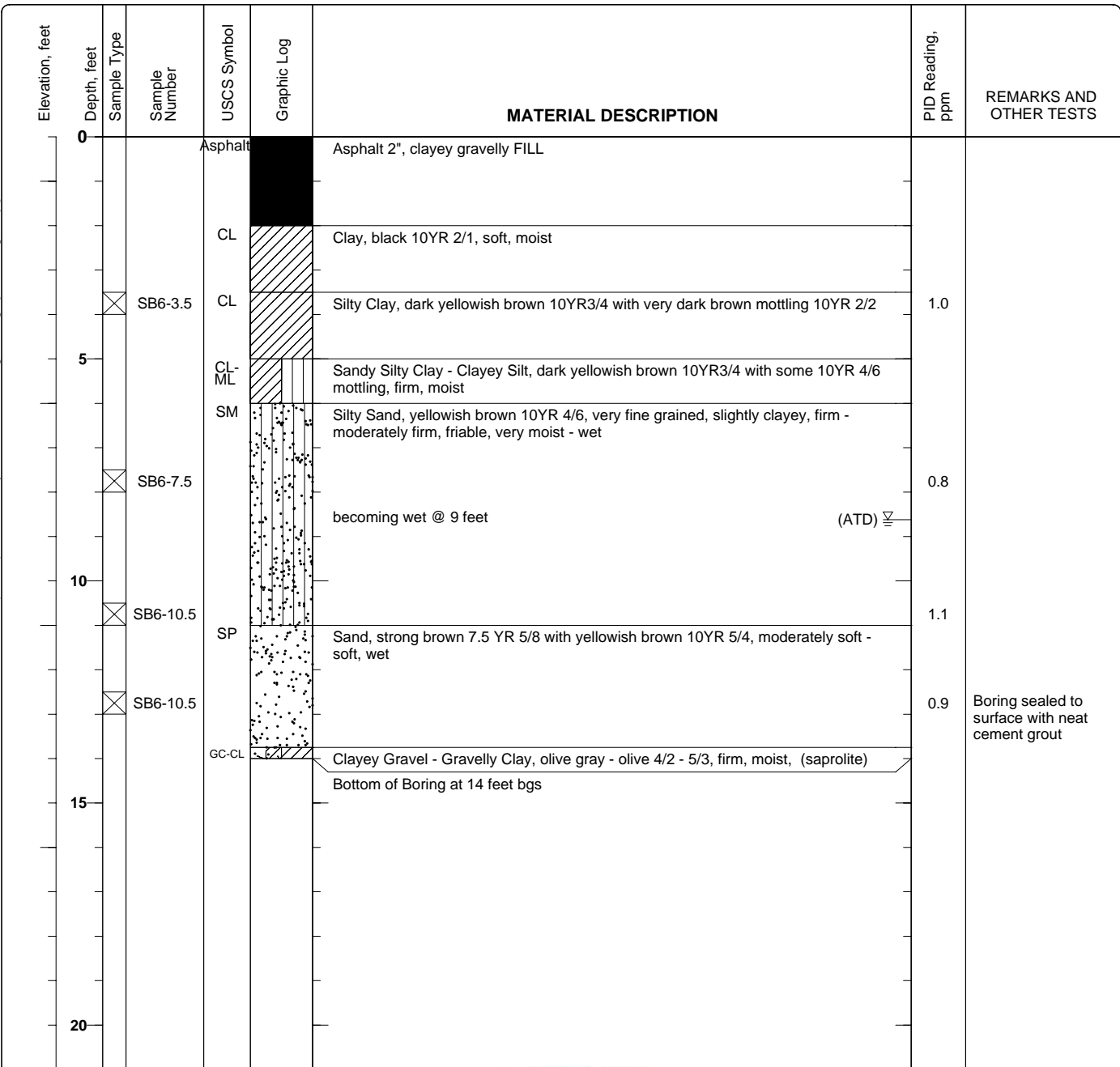
Figure

X:\PROJECTS\CHARACTERIZATION & REMEDIATION\CHARACTERIZATION\10509 PH II (Piazza) Castro Valley\Work Plan 2\Borings +8.bgs [DP Boring 20.tpl]

**Project: Piazza**  
**Project Location: 20957 Baker Road, Castro Valley, CA**  
**Project Number: 10509**

**Log of Boring SB-6**  
 Sheet 1 of 1

Date(s) Drilled <b>May 18, 2005</b>	Logged By <b>Robert F. Flory</b>	Checked By <b>Adrian Angel</b>
Drilling Method <b>Geoprobe</b>	Drill Bit Size/Type <b>2 inch</b>	Total Depth of Borehole <b>14 feet bgs</b>
Drill Rig Type <b>Geoprobe 5410</b>	Drilling Contractor <b>EnProb</b>	Approximate Surface Elevation
Groundwater Level and Date Measured <b>8.62 feet ATD</b>	Sampling Method(s) <b>Tube</b>	Permit #
Borehole Backfill <b>Cement Slurry</b>	Location	



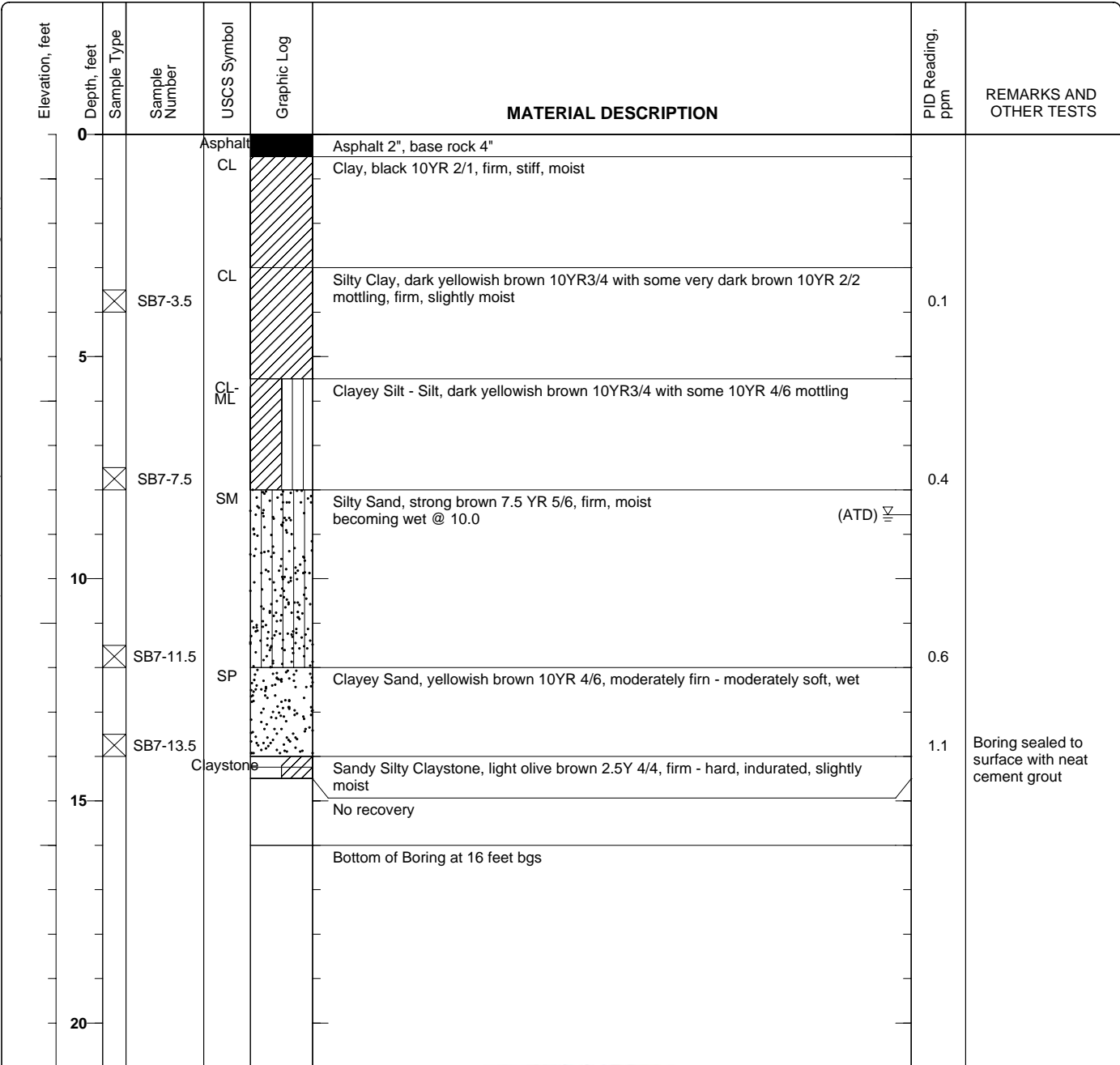
Figure

X:\PROJECTS\CHARACTERIZATION & REMEDIATION\CHARACTERIZATION\10509 PH II (Piazza) Castro Valley\Work Plan 2\Borings +8.bgs [DP Boring 20.tpl]

**Project: Piazza**  
**Project Location: 20957 Baker Road, Castro Valley, CA**  
**Project Number: 10509**

**Log of Boring SB-7**  
 Sheet 1 of 1

Date(s) Drilled <b>May 18, 2005</b>	Logged By <b>Robert F. Flory</b>	Checked By <b>Adrian Angel</b>
Drilling Method <b>Geoprobe</b>	Drill Bit Size/Type <b>2 inch</b>	Total Depth of Borehole <b>16 feet bgs</b>
Drill Rig Type <b>Geoprobe 5410</b>	Drilling Contractor <b>EnProb</b>	Approximate Surface Elevation
Groundwater Level and Date Measured <b>8.56 feet ATD</b>	Sampling Method(s) <b>Tube</b>	Permit #
Borehole Backfill <b>Cement Slurry</b>	Location	



Figure

X:\PROJECTS\CHARACTERIZATION & REMEDIATION\CHARACTERIZATION\10509 PH II (Piazza) Castro Valley\Work Plan 2\Borings +8.bgs [DP Boring 20.tpl]

**Project: Piazza**  
**Project Location: 20957 Baker Road, Castro Valley, CA**  
**Project Number: 10509**

**Log of Boring SB-8**  
 Sheet 1 of 1

Date(s) Drilled <b>May 18, 2005</b>	Logged By <b>Robert F. Flory</b>	Checked By <b>Adrian Angel</b>
Drilling Method <b>Geoprobe</b>	Drill Bit Size/Type <b>2 inch</b>	Total Depth of Borehole <b>15 feet bgs</b>
Drill Rig Type <b>Geoprobe 5410</b>	Drilling Contractor <b>EnProb</b>	Approximate Surface Elevation
Groundwater Level and Date Measured <b>8.7 feet ATD</b>	Sampling Method(s) <b>Tube</b>	Permit #
Borehole Backfill <b>Cement Slurry</b>	Location	

Elevation, feet	Depth, feet	Sample Type	Sample Number	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	PID Reading, ppm	REMARKS AND OTHER TESTS
0				GC		Base rock		
				CL		Sandy Silty Clay, reddish brown 5YR 5/4 - yellowish brown 10YR 5/6, mottled, firm slightly moist		
				CL		Clay, black 10YR 2/1, firm, moderately firm, moist		
			SB8-3.5	CL		Silty Clay, dark yellowish brown 10YR3/4 with very dark brown mottling 10YR 2/2	0.2	
5				CL-ML		Sandy silty Clay - Clayey Sand Silt, dark yellowish brown 10YR3/4 with some 10YR 4/6 mottling		
			SB8-7.5	SP		Silty Sand, yellowish brown 10YR 4/6, very fine grained, slightly clayey, firm - moderately firm, friable, very moist	1.1	
						Moisture content increasing downward		
						becoming wet @ 9 feet		(ATD) $\nabla$
10				SP		Sand, strong brown 7.5 4/6, soft - moderately soft, wet		
			SB8-11.5				0.1	
				SP		Sand, strong brown 7.5 4/6 - yellowish brown 10YR 5/6 mottled, locally clayey, moderately soft - moderately firm, wet		
			SB8-13				2.3	Boring sealed with neat cement grout
15				Claystone		Sandy Silty Claystone, light olive brown 2.5Y 4/4, firm - hard, indurated		
						Bottom of Boring at 15 feet bgs		
20								



Figure

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## **APPENDIX B**

### **Laboratory Analyses With Chain of Custody Documentation**



**McC Campbell Analytical, Inc.**

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560  
Telephone : 925-798-1620 Fax : 925-798-1622  
Website: www.mcccampbell.com E-mail: main@mcccampbell.com

AEI Consultants 2500 Camino Diablo, Ste. #200 Walnut Creek, CA 94597	Client Project ID: #10509; Piazza	Date Sampled: 05/18/05
		Date Received: 05/19/05
	Client Contact: Robert Flory	Date Reported: 05/24/05
	Client P.O.:	Date Completed: 05/24/05

**WorkOrder: 0505282**

May 24, 2005

Dear Robert:

Enclosed are:

- 1). the results of 9 analyzed samples from your #10509; Piazza project,
- 2). a QC report for the above samples
- 3). a copy of the chain of custody, and
- 4). a bill for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions please contact me. McC Campbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yours truly,

Angela Rydelius, Lab Manager



892

**AEI Consultants**  
 2500 Camino Diablo, Suite 100  
 Walnut Creek, CA 9459  
 Telephone: (925) 944-2899 Fax: (925) 944-2895

**CHAIN OF CUSTODY RECORD**  
**TURN AROUND TIME**       
 RUSH 24 HR 48 HR 72 HR 5 DAY  
 EDF Required? Coelt (Normal) No Write On (DW) No

Report To: Robert Flory Bill To:  
 Company: AEI Consultants AEI Consultants  
 2500 Camino Diablo, Suite 100  
 Walnut Creek, CA 94597 E-Mail: rflory@aeiconsultants.com  
 Tele: (925) 944-2899 ext. 122 Fax: (925) 944-2895  
 Project #: 10509 Project Name: Piazza  
 Project Location: Castro Valley  
 Sampler Signature:

Analysis Request Other Comments

SAMPLE ID (Field Point Name)	LOCATION	SAMPLING		# Containers	Type Containers	MATRIX					METHOD PRESERVED									
		Date	Time			Water	Soil	Air	Sludge	Other	Ice	HCl	HNO <sub>3</sub>	Other						
SB1-3.5		6-18-05	0800																	
SB1-7.5			0802																	
SB1-11.5			0805																	
SB2-7.5			0900																	
SB2-10			0905																	
SB2-13			0910																	
SB3-7.5			0930																	
SB3-11.5			0956																	
SB4-3.5			1045																	
SB4-7.5			1050																	
SB4-11.5			1054																	
SB4-12			1105																	

BTEX & TPH as Gas (602/8020 + 8015)/MTBE	TPH Multi-range diesel/motor oil (8015)	Total Petroleum Oil & Grease (5520 E&F/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 601 / 8010 (basic list)	BTEX ONLY (By EPA 602 / 8020)	EPA 8010 - basic list (by 8260)	EPA 608 / 8010 PCB's ONLY	EPA 624 / 8240 / 8260	EPA 625 / 8270	PAH's / PNA's by EPA 625 / 8270 / 8310	CAM-17 Metals	LUFT 5 Metals	Lead (7240/7421/239.2/6010) Total lead	RCI	TPH multi-range EPA 8015	LEAD - Total	LEAD - STLC	
						X	X											
						X	X											
						X	X											
						X	X											

PDF

Relinquished By: Date: 5/19/05 Time: 1110 Received By:

Relinquished By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Received By: \_\_\_\_\_

Relinquished By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Received By: \_\_\_\_\_

ICE/t°       
 GOOD CONDITION       
 HEAD SPACE ABSENT       
 DECHLORINATED IN LAB       
 PRESERVATION APPROPRIATE       
 CONTAINERS       
 PERSERVED IN LAB       
 VOAS O&G METALS OTHER



aei 0505282

2/2

<b>AEI Consultants</b> 2500 Camino Diablo, Suite 100 Walnut Creek, CA 9459 Telephone: (925) 944-2899 Fax: (925) 944-2895	<b>CHAIN OF CUSTODY RECORD</b> <b>TURN AROUND TIME</b>
	<input type="checkbox"/> RUSH <input type="checkbox"/> 24 HR <input type="checkbox"/> 48 HR <input type="checkbox"/> 72 HR <input checked="" type="checkbox"/> 5 DAY
	EDF Required? Coelt (Normal)    No    Write On (DW)    No

<b>Report To:</b> Robert Flory	<b>Bill To:</b>
<b>Company:</b> AEI Consultants	AEI Consultants
2500 Camino Diablo, Suite 100	
Walnut Creek, CA 94597	
<b>Tele:</b> (925) 944-2899 ext. 122	<b>E-Mail:</b> rflory@aeiconsultants.com
<b>Project #:</b> 10509	<b>Project Name:</b> Piazza
<b>Project Location:</b> Castro Valley	
<b>Sampler Signature:</b> <i>[Signature]</i>	

											Analysis Request													Other		Comments																	
SAMPLE ID (Field Point Name)	LOCATION	SAMPLING		# Containers	Type Containers	MATRIX					METHOD PRESERVED																	LEAD - Total	LEAD - STLC														
		Date	Time			Water	Soil	Air	Sludge	Other	Ice	HCl	HNO <sub>3</sub>	Other	BTEX & TPH as Gas (602/8020 + 8015)/MTBE	TPH Multi-range diesel/motor oil (8015)	Total Petroleum Oil & Grease (5520 E&F/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 601 / 8010 (basic list)	BTEX ONLY (By EPA 602 / 8020)	EPA 8010 - basic list (by 8260)	EPA 608 / 8010 PCB's ONLY	EPA 624 / 8240 / 8260	EPA 625 / 8270	PAH's / PNA's by EPA 625 / 8270 / 8310	CAM-17 Metals	LUFT 5 Metals				Lead (7240/7421/239.2/6010) Total lead	RCI	TPH multi-range EPA 8015										
585-7.5		5-16-05	1130	1	2x7												X	X																									
585-11.5			1130																																								
786-7.5			1220														X	X																									
986-10.5			1230																																								
587-8			1315														X	X																									
587-11.5			1320																																								
588-7.5			1410														X	X																									
588-10.5			1410																																								

PDF

<b>Relinquished By:</b> <i>[Signature]</i>	<b>Date:</b> 5-16-05	<b>Time:</b> 1110	<b>Received By:</b> <i>[Signature]</i>
<b>Relinquished By:</b> <i>[Signature]</i>	<b>Date:</b>	<b>Time:</b>	<b>Received By:</b>
<b>Relinquished By:</b>	<b>Date:</b>	<b>Time:</b>	<b>Received By:</b>

<b>ICE/°</b> <input checked="" type="checkbox"/>	<b>VOAS</b>	<b>O&amp;G</b>	<b>METALS</b>	<b>OTHER</b>
<b>GOOD CONDITION</b> <input checked="" type="checkbox"/>	<b>PRESERVATION APPROPRIATE</b> <input checked="" type="checkbox"/>			
<b>HEAD SPACE ABSENT</b> <input checked="" type="checkbox"/>	<b>CONTAINERS</b> <input checked="" type="checkbox"/>			
<b>DECHLORINATED IN LAB</b> <input type="checkbox"/>	<b>PERSERVED IN LAB</b> <input type="checkbox"/>			

**McC Campbell Analytical, Inc.**



110 Second Avenue South, #D7  
 Pacheco, CA 94553-5560  
 (925) 798-1620

**CHAIN-OF-CUSTODY RECORD**

**WorkOrder: 0505282**

**ClientID: AEL**

**Report to:**

Robert Flory  
 AEI Consultants  
 2500 Camino Diablo, Ste. #200  
 Walnut Creek, CA 94597

TEL: (925) 283-6000  
 FAX: (925) 283-6121  
 ProjectNo: #10509; Piazza  
 PO:

**Bill to:**

Diane  
 All Environmental, Inc.  
 2500 Camino Diablo, Ste. #200  
 Walnut Creek, CA 94597

**Requested TAT: 5 days**

**Date Received: 05/19/2005**

**Date Printed: 06/03/2005**

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests (See legend below)															
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
0505282-001	SB1-3.5	Soil	05/18/2005	<input type="checkbox"/>		A														
0505282-003	SB1-11.5	Soil	05/18/2005	<input type="checkbox"/>	A		A													
0505282-005	SB2-10	Soil	05/18/2005	<input type="checkbox"/>	A		A													
0505282-007	SB3-7.5	Soil	05/18/2005	<input type="checkbox"/>	A		A													
0505282-010	SB4-7.5	Soil	05/18/2005	<input type="checkbox"/>	A		A													
0505282-013	SB5-7.5	Soil	05/18/2005	<input type="checkbox"/>	A		A													
0505282-015	SB6-7.5	Soil	05/18/2005	<input type="checkbox"/>	A		A													
0505282-017	SB7-8	Soil	05/18/2005	<input type="checkbox"/>	A		A													
0505282-019	SB8-7.5	Soil	05/18/2005	<input type="checkbox"/>	A		A													

**Test Legend:**

1	G-MBTX_S	2	PREDF REPORT	3	TPH(DMO)_S	4		5	
6		7		8		9		10	
11		12		13		14		15	

**Prepared by: Melissa Valles**

**Comments:**

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.

**McC Campbell Analytical, Inc.**

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560  
 Telephone : 925-798-1620 Fax : 925-798-1622  
 Website: www.mccampbell.com E-mail: main@mccampbell.com

AEI Consultants  2500 Camino Diablo, Ste. #200  Walnut Creek, CA 94597	Client Project ID: #10509; Piazza	Date Sampled: 05/18/05
		Date Received: 05/19/05
	Client Contact: Robert Flory	Date Extracted: 05/19/05
	Client P.O.:	Date Analyzed: 05/20/05

**Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE\***

Extraction method: SW5030B

Analytical methods: SW8021B/8015Cm

Work Order: 0505282

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
003A	SB1-11.5	S	ND	ND	ND	ND	ND	ND	1	94
005A	SB2-10	S	ND	ND	ND	ND	ND	ND	1	99
007A	SB3-7.5	S	ND	ND	ND	ND	ND	ND	1	92
010A	SB4-7.5	S	ND	ND	ND	ND	ND	ND	1	90
013A	SB5-7.5	S	ND	ND	ND	ND	ND	ND	1	95
015A	SB6-7.5	S	ND	ND	ND	ND	ND	ND	1	100
017A	SB7-8	S	ND	ND	ND	ND	ND	ND	1	105
019A	SB8-7.5	S	ND	ND	ND	ND	ND	ND	1	99

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	NA	NA	NA	NA	NA	NA	NA	1	µg/L
	S	1.0	0.05	0.005	0.005	0.005	0.005	0.005	1	mg/Kg

\* water and vapor samples and all TCLP & SPLP extracts are reported in µg/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples in mg/L.

# cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McC Campbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern; n) TPH(g) range non-target isolated peaks subtracted out of the TPH(g) concentration at the client's request.





# McC Campbell Analytical, Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560  
 Telephone : 925-798-1620 Fax : 925-798-1622  
 Website: www.mcccampbell.com E-mail: main@mcccampbell.com

AEI Consultants  2500 Camino Diablo, Ste. #200  Walnut Creek, CA 94597	Client Project ID: #10509; Piazza	Date Sampled: 05/18/05
	Client Contact: Robert Flory	Date Received: 05/19/05
	Client P.O.:	Date Extracted: 05/19/05
		Date Analyzed: 05/20/05

### Diesel (C10-23) and Oil (C18+) Range Extractable Hydrocarbons as Diesel and Motor Oil\*

Extraction method: SW3550C

Analytical methods: SW8015C

Work Order: 0505282

Lab ID	Client ID	Matrix	TPH(d)	TPH(mo)	DF	% SS
0505282-003A	SB1-11.5	S	ND	ND	1	116
0505282-005A	SB2-10	S	ND	ND	1	110
0505282-007A	SB3-7.5	S	ND	ND	1	102
0505282-010A	SB4-7.5	S	ND	ND	1	113
0505282-013A	SB5-7.5	S	ND	ND	1	106
0505282-015A	SB6-7.5	S	ND	ND	1	94
0505282-017A	SB7-8	S	ND	ND	1	110
0505282-019A	SB8-7.5	S	ND	ND	1	106

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	NA	NA	ug/L
	S	1.0	5.0	mg/Kg

\* water samples are reported in µg/L, wipe samples in µg/wipe, soil/solid/sludge samples in mg/kg, product/oil/non-aqueous liquid samples in mg/L, and all DISTLC / STLC / SPLP / TCLP extracts are reported in µg/L.

# cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract.

+The following descriptions of the TPH chromatogram are cursory in nature and McC Campbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) aged diesel? is significant; d) gasoline range compounds are significant; e) unknown medium boiling point pattern that does not appear to be derived from diesel (asphalt?); f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; k) kerosene/kerosene range; l) bunker oil; m) fuel oil; n) stoddard solvent/mineral spirit.



### QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Soil

QC Matrix: Soil

WorkOrder: 0505282

EPA Method: SW8021B/8015Cm		Extraction: SW5030B			BatchID: 16289			Spiked Sample ID: 0505280-034A		
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
TPH(btex) <sup>£</sup>	ND	0.60	95.9	93.2	2.82	98.6	92.2	6.76	70 - 130	70 - 130
MTBE	ND	0.10	93.3	87.3	6.66	91.3	94.8	3.74	70 - 130	70 - 130
Benzene	ND	0.10	106	102	3.48	103	110	5.98	70 - 130	70 - 130
Toluene	ND	0.10	83.7	84.4	0.844	85.7	88.9	3.69	70 - 130	70 - 130
Ethylbenzene	ND	0.10	100	98.7	1.74	102	106	3.67	70 - 130	70 - 130
Xylenes	ND	0.30	90.7	87	4.13	91.7	91	0.730	70 - 130	70 - 130
%SS:	109	0.10	108	112	3.64	105	108	2.82	70 - 130	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:  
NONE

#### BATCH 16289 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0505282-003A	5/18/05 8:05 AM	5/19/05	5/20/05 8:49 AM	0505282-005A	5/18/05 9:05 AM	5/19/05	5/20/05 9:19 AM
0505282-007A	5/18/05 9:50 AM	5/19/05	5/20/05 10:19 AM	0505282-010A	5/18/05 10:50 AM	5/19/05	5/20/05 10:48 AM
0505282-013A	5/18/05 11:30 AM	5/19/05	5/20/05 11:18 AM	0505282-015A	5/18/05 12:20 PM	5/19/05	5/20/05 11:48 AM
0505282-017A	5/18/05 1:15 PM	5/19/05	5/20/05 7:19 AM	0505282-019A	5/18/05 2:10 PM	5/19/05	5/20/05 7:52 AM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 \* (MS-Sample) / (Amount Spiked); RPD = 100 \* (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

£ TPH(btex) = sum of BTEX areas from the FID.

# cluttered chromatogram; sample peak coelutes with surrogate peak.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.



### QC SUMMARY REPORT FOR SW8015C

W.O. Sample Matrix: Soil

QC Matrix: Soil

WorkOrder: 0505282

EPA Method: SW8015C		Extraction: SW3550C			BatchID: 16282			Spiked Sample ID: 0505282-019A		
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
TPH(d)	ND	20	81.1	81.8	0.826	98.8	100	1.18	70 - 130	70 - 130
%SS:	106	50	89	91	1.19	106	107	1.32	70 - 130	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:  
NONE

#### BATCH 16282 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0505282-003A	5/18/05 8:05 AM	5/19/05	5/20/05 2:50 PM	0505282-005A	5/18/05 9:05 AM	5/19/05	5/20/05 2:50 PM
0505282-007A	5/18/05 9:50 AM	5/19/05	5/20/05 8:42 PM	0505282-010A	5/18/05 10:50 AM	5/19/05	5/20/05 7:36 PM
0505282-013A	5/18/05 11:30 AM	5/19/05	5/20/05 5:24 PM	0505282-015A	5/18/05 12:20 PM	5/19/05	5/20/05 6:30 PM
0505282-017A	5/18/05 1:15 PM	5/19/05	5/20/05 4:13 PM	0505282-019A	5/18/05 2:10 PM	5/19/05	5/20/05 4:13 PM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 \* (MS-Sample) / (Amount Spiked); RPD = 100 \* (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.



**McC Campbell Analytical, Inc.**

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560  
Telephone : 925-798-1620 Fax : 925-798-1622  
Website: www.mccampbell.com E-mail: main@mccampbell.com

AEI Consultants 2500 Camino Diablo, Ste. #200 Walnut Creek, CA 94597	Client Project ID: #10509; Piazza	Date Sampled: 05/18/05
		Date Received: 05/19/05
	Client Contact: Robert Flory	Date Reported: 05/26/05
	Client P.O.:	Date Completed: 05/26/05

**WorkOrder: 0505283**

May 26, 2005

Dear Robert:

Enclosed are:

- 1). the results of **8** analyzed samples from your **#10509; Piazza project**,
- 2). a QC report for the above samples
- 3). a copy of the chain of custody, and
- 4). a bill for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions please contact me. McC Campbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yours truly,

Angela Rydelius, Lab Manager









QC SUMMARY REPORT FOR SW8015C

W.O. Sample Matrix: Water

QC Matrix: Water

WorkOrder: 0505283

EPA Method: SW8015C		Extraction: SW3510C			BatchID: 16279			Spiked Sample ID: N/A		
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
TPH(d)	N/A	1000	N/A	N/A	N/A	99.4	98.9	0.467	N/A	70 - 130
%SS:	N/A	2500	N/A	N/A	N/A	108	107	0.752	N/A	70 - 130
All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions: NONE										

BATCH 16279 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0505283-001B	5/18/05 8:30 AM	5/19/05	5/24/05 12:41 AM	0505283-002B	5/18/05 9:30 AM	5/19/05	5/23/05 10:20 PM
0505283-003B	5/18/05 10:20 AM	5/19/05	5/24/05 9:55 AM	0505283-004B	5/18/05 11:00 AM	5/19/05	5/23/05 11:31 PM
0505283-005B	5/18/05 3:00 PM	5/19/05	5/24/05 7:35 AM	0505283-006B	5/18/05 12:50 PM	5/19/05	5/20/05 1:44 PM
0505283-007B	5/18/05 1:45 PM	5/19/05	5/24/05 12:30 PM	0505283-008B	5/18/05 2:30 PM	5/19/05	5/24/05 6:26 AM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.  
 % Recovery = 100 \* (MS - Sample) / (Amount Spiked); RPD = 100 \* (MS - MSD) / ((MS + MSD) / 2).  
 MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.  
 N/A = not enough sample to perform matrix spike and matrix spike duplicate.  
 NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.



QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Water

QC Matrix: Water

WorkOrder: 0505283

EPA Method: SW8021B/8015Cm		Extraction: SW5030B			BatchID: 16281			Spiked Sample ID: 0505283-006A		
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
TPH(btex) <sup>£</sup>	ND	60	92.3	93.9	1.70	94.4	93.3	1.21	70 - 130	70 - 130
MTBE	ND	10	82	82.4	0.505	91	88.7	2.60	70 - 130	70 - 130
Benzene	ND	10	103	105	1.62	93.2	98.2	5.16	70 - 130	70 - 130
Toluene	ND	10	104	110	5.50	101	102	1.11	70 - 130	70 - 130
Ethylbenzene	ND	10	105	102	2.77	99	101	1.67	70 - 130	70 - 130
Xylenes	ND	30	91.3	90.7	0.733	86.3	90.3	4.53	70 - 130	70 - 130
%SS:	100	10	109	112	2.42	100	103	2.46	70 - 130	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:  
NONE

BATCH 16281 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0505283-001A	5/18/05 8:30 AM	5/20/05	5/20/05 1:48 AM	0505283-002A	5/18/05 9:30 AM	5/20/05	5/20/05 10:06 PM
0505283-003A	5/18/05 10:20 AM	5/20/05	5/20/05 3:59 AM	0505283-004A	5/18/05 11:00 AM	5/20/05	5/20/05 7:14 AM
0505283-005A	5/18/05 3:00 PM	5/20/05	5/20/05 9:24 AM	0505283-006A	5/18/05 12:50 PM	5/20/05	5/20/05 7:46 AM
0505283-007A	5/18/05 1:45 PM	5/20/05	5/20/05 8:51 AM	0505283-008A	5/18/05 2:30 PM	5/20/05	5/20/05 9:57 AM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 \* (MS-Sample) / (Amount Spiked); RPD = 100 \* (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

£ TPH(btex) = sum of BTEX areas from the FID.

# cluttered chromatogram; sample peak coelutes with surrogate peak.

N/A = not applicable or not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.



# McC Campbell Analytical, Inc.



110 Second Avenue South, #D7  
 Pacheco, CA 94553-5560  
 (925) 798-1620

# CHAIN-OF-CUSTODY RECORD

WorkOrder: 0505283

ClientID: AEL

**Report to:**

Robert Flory  
 AEI Consultants  
 2500 Camino Diablo, Ste. #200  
 Walnut Creek, CA 94597

TEL: (925) 283-6000  
 FAX: (925) 283-6121  
 ProjectNo: #10509; Piazza  
 PO:

**Bill to:**

Diane  
 All Environmental, Inc.  
 2500 Camino Diablo, Ste. #200  
 Walnut Creek, CA 94597

Requested TAT:

5 days

*Date Received:* 05/19/2005

*Date Printed:* 05/19/2005

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests (See legend below)														
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
0505283-001	SB1-W	Water	5/18/05 8:30:00 AM	<input type="checkbox"/>	A	A	B												
0505283-002	SB2-W	Water	5/18/05 9:30:00 AM	<input type="checkbox"/>	A		B												
0505283-003	SB3-W	Water	5/18/05 10:20:00	<input type="checkbox"/>	A		B												
0505283-004	SB4-W	Water	5/18/05 11:00:00	<input type="checkbox"/>	A		B												
0505283-005	SB5-W	Water	5/18/05 3:00:00 PM	<input type="checkbox"/>	A		B												
0505283-006	SB6-W	Water	5/18/05 12:50:00	<input type="checkbox"/>	A		B												
0505283-007	SB7-W	Water	5/18/05 1:45:00 PM	<input type="checkbox"/>	A		B												
0505283-008	SB8-W	Water	5/18/05 2:30:00 PM	<input type="checkbox"/>	A		B												

**Test Legend:**

1	G-MBTX_W	2	PREF REPORT	3	TPH(DMO)_W	4		5	
6		7		8		9		10	
11		12		13		14		15	

Prepared by: Melissa Valles

**Comments:**

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.