Atlantic Richfield Company

Shannon Couch
Operations Project Manager

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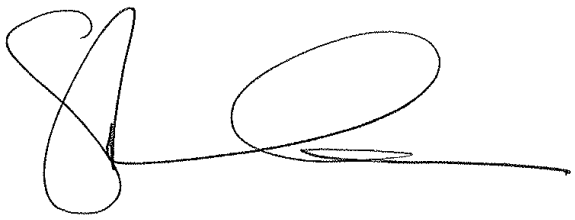
June 19, 2012

Re: Monitoring Well Installation Work Plan
Former Richfield Oil Company Station #402
1450 Fruitvale Avenue, Oakland, California
ACEH Case #RO0000307

I declare that to the best of my knowledge at the present time, that the information and/or recommendations contained in the attached document are true and correct.

Submitted by,



Shannon Couch
Operations Project Manager

Attachment

MONITORING WELL INSTALLATION WORK PLAN
Former Richfield Oil Company Station #402
1450 Fruitvale Avenue
Oakland, Alameda County, California
ACEH Case #RO0000307

Prepared for:

Ms. Shannon Couch
Atlantic Richfield Company
P.O. Box 1257
San Ramon, CA 94583

Prepared by:

Broadbent & Associates, Inc.
1324 Mangrove Avenue, Suite 212
Chico, California 95926
(530) 566-1400

June 19, 2012

No. 08-88-602

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June 19, 2012

Project No. 08-88-602

Atlantic Richfield Company
P.O. Box 1257
San Ramon, CA 94583
Submitted via ENFOS

Attn.: Ms. Shannon Couch

Re: Monitoring Well Installation Work Plan, Former Richfield Oil Company Station #402
1450 Fruitvale Avenue, Oakland, Alameda County, ACEH Case #RO0000307

Dear Ms. Couch:

Broadbent & Associates, Inc. (Broadbent) is pleased to submit this *Monitoring Well Installation Work Plan* (Work Plan) on behalf of Atlantic Richfield Company (a BP affiliated company), for Former Richfield Oil Company Station #402 located at 1450 Fruitvale Avenue, Oakland, Alameda County, California (Site). This Work Plan presents a description of proposed activities to install monitoring wells in order to evaluate residual onsite petroleum hydrocarbon contamination.

Please do not hesitate to contact us at (530) 566-1400 if you should have questions or require additional information.

Sincerely,
BROADBENT & ASSOCIATES, INC.

Thomas A. Venus, P.E.
Senior Engineer

REGISTERED PROFESSIONAL ENGINEER
THOMAS A. VENUS
No. 54698
Expires 12-31-13
CIVIL
STATE OF CALIFORNIA

cc: Ms. Dilan Roe, Alameda County Environmental Health (submitted via ACEH ftp site)
Electronic copy uploaded to GeoTracker

MONITORING WELL INSTALLATION WORK PLAN
Former Richfield Oil Company Station #402
1450 Fruitvale Avenue
Oakland, Alameda County, California

TABLE OF CONTENTS

No.	Section	Page
1.0	Introduction	1
2.0	Site Description and Background	1
3.0	Regional Geology and Hydrogeology	3
4.0	Proposed Monitoring Well Installation Activities	3
4.1	Preliminary Activities, Local Permitting and Notification	4
4.2	Soil Borings	4
4.3	Monitoring Well Construction	4
4.4	Monitoring Well Development, Sampling and Surveying	5
4.5	Investigation Reporting	5
5.0	Proposed Schedule	6
6.0	Closure	6
7.0	References	6

DRAWINGS

Drawing 1: Site Location Map
Drawing 2: Site Map with Historic Boring and Monitoring Well Locations
Drawing 3: Site Map with Proposed Monitoring Well Locations

APPENDICES

Appendix A: Historic Soil Data
Appendix B: Historic Groundwater Data
Appendix C: Soil Boring/Well Construction Logs and Geologic Cross-Section

MONITORING WELL INSTALLATION WORK PLAN
Former Richfield Oil Company Station #402
1450 Fruitvale Avenue
Oakland, Alameda County, California

1.0 INTRODUCTION

Broadbent & Associates, Inc. (Broadbent) has prepared this *Monitoring Well Installation Work Plan* (Work Plan) on behalf of the Atlantic Richfield Company (ARC) – a BP affiliated company, for Former Richfield Oil Company Station #402 located at 1450 Fruitvale Avenue in Oakland, Alameda County, California (Site). A Site Location Map has been provided as Drawing 1.

In a letter dated October 16, 2008 Alameda County Environmental Health (ACEH) requested the completion of a soil and groundwater investigation as previously approved in the ACEH letter dated June 22, 2006. The approved *Work Plan – Monitoring Well Installation, 1450 Fruitvale Avenue, Oakland, California* (AEI Consultants, Inc., 3/3/2005) for Fruitvale-Farnam Associates, LLC. ARC had repeatedly attempted without success to collectively implement the approved scope of work with the other co-Responsible Parties (RPs) listed in the ACEH letters. BP was recently able to negotiate a final property access agreement with Mr. Phua / Fruitvale-Farnam Associates, LLC, on April 11, 2012.

Broadbent has determined that the monitoring wells previously installed at the Former Station #402 site are no longer accessible. It appears that they were paved over or otherwise rendered inaccessible without the appropriate destruction/decommissioning permits or oversight from the Alameda County Public Works Agency (ACPWA). Accordingly, this Work Plan proposes the installation of four new onsite groundwater monitoring wells to provide sampling locations to assist with the evaluation of residual hydrocarbon contamination. This Work Plan provides a discussion of the Site Description and Background, Proposed Monitoring Well Installation Activities, and Proposed Schedule.

2.0 SITE DESCRIPTION AND BACKGROUND

The Site is currently occupied by the Fruitvale Commercial Center office building located on the northeast corner of Farnam Street and Fruitvale Avenue in Oakland, Alameda County, California (Drawing 2). A restaurant and large Laundromat occupy the first floor of this three-story building. A health & dental clinic occupy the second floor, while a tax preparation service and real estate mortgage company occupy the third floor of the building. The open space of the Site not occupied by the building footprint is covered by cement concrete with exception of thin landscape planters located along the western and southern property boundaries.

The Site was reportedly developed as a gas station in 1950 by Richfield Oil Company and operated until 1983 (Richfield Oil Company sold the property to Curtis & Joyce Thomas in 1976, however ACEH was not satisfied with the proof Broadbent provided that Mr. Thomas was the last operator of the USTs at the Site). Four underground storage tanks (USTs) were supposedly located along the southern boundary of the Site. The fuel dispenser island was located on the northern portion of the former parking lot. AEI Consultants (AEI) conducted

research at the City of Oakland Fire and Building Departments for records relating to the location of the USTs and associated piping. Although formal tank removal records were not available, it was determined that the former UST basin was along Farnam Street, as depicted in Drawing 2 (AEI, 10/11/1999).

Following an inconclusive geophysical survey, AEI conducted three excavations in May 1999 in order to confirm the presence or absence of USTs remaining onsite. The approximate locations of these excavations are depicted on Drawing 2. No tanks were found and soils removed from the larger excavation appeared to be consistent with imported fill material commonly used to backfill former tank basins. A total of six soil samples and one groundwater sample (labeled AEI GW 8') were collected from the larger excavation. The analytical results obtained from the collected samples indicated very low to non-detect concentrations of petroleum hydrocarbons. Laboratory analytical results from this investigation are summarized in Appendices A and B (AEI, 6/11/1999).

According to AEI, a previous subsurface investigation performed by Glenfos had revealed a release. However, AEI concluded that it was apparent that the USTs had been removed and that the release that had occurred did not take place in the former UST basin but rather within the vicinity of the product piping or dispenser island (AEI, 10/9/2002).

Between July 1998 and June 2002, a total of 22 soil borings (GP-1 through GP-8 and AEI-9 through AEI-22) were advanced, and three monitoring wells (MW-1 through MW-3) installed. A Site Map with Historic Boring and Monitoring Well Locations is provided as Drawing 2. Historic soil data are presented in Appendix A, historic groundwater data are provided in Appendix B, and soil boring/well construction logs and a geologic cross-section are provided in Appendix C.

On September 26, 2002, AEI advanced an additional three shallow soil borings (AEI-23 through AEI-25) with a hand auger in the former dispenser (AEI-23) and product piping (AEI-24) vicinities and beneath the proposed building (AEI-25). The purpose of these borings was to confirm the absence of hydrocarbon impacts within the shallow soil and to collect a soil sample for grain size analysis. Reportedly, soil sample analytical data did not reveal significant presence of source material remaining within the vadose zone (AEI, 10/9/2002).

Within the *Site Summary and Risk Evaluation Report* (AEI, 10/9/2002), AEI included an analysis of groundwater, soil, and vapor exposure pathways present at the Site and the results of a conduit survey. A comparative analysis of Site groundwater and soil analytical data with Regional Water Quality Control Board risk-based screening levels and City of Oakland screening levels was included within the report. Based on the results of this evaluation, AEI recommended formal case closure. The ACEH did not grant closure and requested that additional groundwater investigation activities be conducted following redevelopment of the property.

On March 7, 2005, AEI submitted a *Work Plan – Monitoring Well Installation*, proposing the installation of four additional monitoring wells to further assess the extent of the hydrocarbon contaminant plume. However, the work activities proposed within this Work Plan were not conducted.

A total of eight groundwater monitoring/sampling events were conducted at the Site between October 2000 and September 2002 utilizing wells MW-1, MW-2, and MW-3. Based on a recent Site visit, these three wells appear to have been paved over with cement concrete or otherwise abandoned, although a record of proper destruction/decommissioning was not on file with the ACPWA.

3.0 REGIONAL GEOLOGY AND HYDROGEOLOGY

According to the East Bay Plain Groundwater Basin Beneficial Use Evaluation Report (California Regional Water Quality Control Board – San Francisco Bay Region/SFRWQCB, June 1999), the Site is located within the Oakland Sub-Area of the East Bay Plain of the San Francisco Basin. The Oakland Sub-Area contains a sequence of alluvial fans. The alluvial fill thickness ranges from 300 to 700 feet deep. There are no well-defined aquitards such as estuarine muds. The largest and deepest wells in this sub-area historically pumped one to two million gallons per day at depths greater than 200 feet. Overall, sustainable yields are low due in part to low recharge potential. The Merrit sand in West Oakland was an important part of the early water supply for the City of Oakland. It is shallow (up to 60 feet), but before the turn of the last century, septic systems contaminated the water supply wells.

Throughout most of the Alameda County portion of the East Bay Plain, from Hayward north to Albany, water level contours show that the general direction of groundwater flow is from east to west or from the Hayward Fault to the San Francisco Bay. Groundwater flow direction generally correlates to topography. Flow direction and velocity are also influenced by buried stream channels that typically are oriented in an east to west direction.

Based on the eight monitoring events, depth-to-water (DTW) measurements have ranged from approximately 8 to 18 feet below ground surface (bgs). The groundwater gradient direction associated with the Site has varied, but the predominant direction was to the southeast. Historic groundwater monitoring data including gradient magnitude and direction is provided in Appendix B.

Based on review of geologic boring logs, soil beneath the Site generally consists of mixed silty, sandy, and gravely clays, which have been encountered up to the maximum boring depth of 35 feet bgs. Soils observed between 10 and 12 feet bgs are predominantly clay while sand and gravel content increase with depth. Lenses of sand have been observed ranging from several inches to several feet thick in several borings in the 10 to 15 feet bgs range.

4.0 PROPOSED MONITORING WELL INSTALLATION ACTIVITIES

As previously mentioned, the historic wells onsite have been abandoned and/or paved over, thus warranting additional monitoring well installation activities onsite in order to properly assess current residual hydrocarbon impacts to soil and groundwater within the vicinity of the Site. Accordingly, Site evaluation activities will be facilitated through installation of four monitoring wells MW-4, MW-5, MW-6, and MW-7 on-Site (Drawing 3). The proposed monitoring well locations are tentative, and are subject to change due to access and utility clearance.

4.1 Preliminary Activities, Local Permitting, and Notification

Prior to initiating field activities, Broadbent will obtain the necessary well permits from ACPWA, prepare a site-specific Health and Safety Plan (HASP) for the proposed work, and clear the proposed boring locations of conflicts with subsurface utilities. The utility clearance will include notifying Underground Service Alert (USA) of the pending work a minimum of 48 hours prior to initiating the field investigation, and procuring the services of a private utility locating company to confirm the absence of underground utilities at each boring location. Boreholes will be physically cleared to 6.5 feet bgs using hand auger or air knife methods consistent with BP's Defined Practice for Ground Disturbance.

The Site-specific HASP will be prepared for use by field personnel implementing this Work Plan. The HASP will address hazards associated with drilling activities and potential exposure pathways and media which project personnel may encounter during proposed replacement well installation. A copy of the HASP will be available on-site during work. The subcontractor(s) performing field activities will be provided with a copy of the HASP prior to initiating work, and daily safety tailgate meetings will also be conducted to review hazards and drilling safety associated with execution of the work.

4.2 Soil Borings

The borings will be completed under the direct supervision of Broadbent field personnel. A California C-57 licensed drilling company will provide a hollow-stem auger rig for well installation. The borings will be advanced to an approximate total depth of 25 ft bgs. Each boring will be continuously cored to assist with detailed lithologic logging and identification of potential contamination. Select soil samples collected above groundwater will be submitted for laboratory analysis (4 ft bgs, 6 ft bgs, and 8 ft bgs). Soil cuttings will be classified according to the Unified Soil Classification System (USCS), and will be examined using visual and manual methods for parameters including odor, staining, color, grain size, and moisture content. Field screening for hydrocarbons will include visual and olfactory observations and portable photo-ionization detector (PID) measurements.

Collected soil samples will be sealed with Teflon sheets, capped and placed in a chilled cooler. Samples will be then be submitted to a state-certified analytical laboratory under standard chain-of-custody protocol. Soil samples will be analyzed for Gasoline-Range Organics (GRO, C6-C12) by EPA Method 8015M and for Benzene, Toluene, Ethylbenzene, Total Xylenes (BTEX) and Methyl Tertiary Butyl Ether (MTBE) by EPA Method 8260.

Investigation-derived residuals will be temporarily stored on-site in 55-gallon drums, pending characterization for proper disposal. Broadbent will coordinate the transportation and disposal of surplus soils and liquids to the appropriate California-regulated facilities.

4.3 Groundwater Monitoring Well Construction

New onsite monitoring wells MW-4 through MW-7 will be constructed of four-inch diameter, Schedule 40 poly-vinyl chloride (PVC) threaded casing. The screened intervals will consist of 0.010-inch machine-cut slots extending from approximately five feet bgs to

approximately 25 feet bgs (total depth drilled). This screen interval should span the water table that has historically fluctuated between 8 to 18 ft bgs. A filter pack consisting of No.2/12 sand will be installed in the annular space from total depth drilled to one foot above the casing screen interval. A one-foot bentonite seal will be placed above the filter pack with neat cement grout completing the seal. The well will be completed with a traffic-rated locking vault which will be set in cement concrete to protect the well head.

4.4 Groundwater Monitoring Well Development, Sampling, and Surveying

The wells will be developed no sooner than 48 hours after installation. The well development process will consist of surging and bailing each well to remove fine-grained sediments from the well and sand filter pack. A minimum of three and a maximum of ten wetted casing volumes of groundwater will be removed until water quality parameters have stabilized. Periodic measurements of the water quality parameters pH, temperature, and conductivity will be recorded during the development to establish baseline values for groundwater. Purge water generated during development activities will be temporarily stored on-site in 55-gallon drums, pending characterization for proper disposal. Broadbent will coordinate the transportation and disposal of purge water to the appropriate California-regulated facilities.

The wells will be sampled no sooner than 48 hours after well development. Groundwater samples will be submitted to a state-certified analytical laboratory under standard chain-of-custody protocol. Groundwater samples will be analyzed for GRO (hydrocarbon chain lengths between C6-C12) by EPA Method 8015B and for BTEX and MTBE by EPA Method 8260B.

After installation, the monitoring wells will be surveyed in accordance with State Water Resource Control Board's standards for the GeoTracker database. Consistent with California Department of Water Resources (DWR) and ACPWA requirements, the licensed C-57 well driller will prepare a Well Completion Report (DWR Form 188) for each new monitoring well. The completed well reports shall be submitted to the DWR, ACPWA, and the ACEH (within the resultant investigation report).

4.5 Investigation Reporting

Upon completion of field activities described above and compilation of field data, a Monitoring Well Installation Report will be prepared and submitted to ACEH, and the State GeoTracker database (including the required individual GeoTracker upload files). The report will document fieldwork and analytical data and will include the following information:

- Scope of Work
- Lithologic boring/well construction logs (GEO_BORE)
- Site map showing well locations (GEO_MAP, GEO_XY, GEO_Z)
- Text and tabulated investigation results (GEO_WELL)
- Laboratory reports and chain of custody records (EDF)
- Significance of detected petroleum hydrocarbons
- Recommendations for future activities, if warranted

5.0 PROPOSED SCHEDULE

The proposed schedule for the work described above shall proceed as follows:

- Monitoring Well Installation – Monitoring well installation activities will begin immediately and are anticipated to be completed within 90 days following approval of this work plan.
- Monitoring Well Installation Report – A summary report of well installation activities is proposed to be submitted within 60 days following completion of the well installation activities, above (i.e. within 150 days of work plan approval).

6.0 CLOSURE

Broadbent will do its best to alert the client of matters which, in the opinion of Broadbent, require immediate attention to protect public health, safety, and the environment. Broadbent will make every effort to advise the client of matters which should be reported to government regulatory agencies. However, the client is solely responsible for reporting such matters, and Broadbent shall not be held liable in the event that the proper agency is not notified. Our services will be performed in accordance with generally accepted practice at the time work commences. Results and recommendations will be based on review of available documentation and written or verbal correspondence with appropriate regulatory agencies, laboratory results, observations of field personnel, and the points investigated. No warranty is expressed or implied.

7.0 REFERENCES

ACEH, June 22, 2006. *Fuel Leak Case No. RO0000307, ARCO #402/Parking Lot, 1450 Fruitvale Avenue, Oakland, CA.* Letter from Mr. Steven Plunkett (ACEH) to Mr. Bill Puha (Fruitvale-Farnam Associates, LLC), Mr. Ken Phares (Jay Phares Corporation), and Mr. Paul Supple (BP West Coast Products, LLC).

ACEH, December 20, 2006. *Fuel Leak Case No. RO0000307, ARCO #402/Parking Lot, 1450 Fruitvale Avenue, Oakland, CA – Work Plan Approval*. Letter from Mr. Steven Plunkett (ACEH) to Mr. Bill Puha (Fruitvale-Farnam Associates, LLC), Mr. Ken Phares (Jay Phares Corporation).

ACEH, October 16, 2008. *Fuel Leak Case No. RO0000307 and Geotracker Global ID T06019734265, ARCO #0402, 1450 Fruitvale Avenue, Oakland, CA 94601*. Letter from Mr. Paresh Khatri (ACEH) to Bill Puha (Fruitvale-Farnam Associates, LLC), Curtis & Joyce Thomas, Ken Phares (c/o Jay Phares Corporation), and Paul Supple (Atlantic Richfield Company).

AEI Consultants, Inc., June 11, 1999. *Subsurface Investigation*, 1450 Fruitvale Avenue, Oakland, California. Prepared for Jay-Phares Corporation.

AEI Consultants, Inc., October 11, 1999. *Phase II Subsurface Investigation,* 1450 Fruitvale Avenue, Oakland, California. Prepared for Jay-Phares Corporation, and forwarded to ACEH.

AEI Consultants, Inc., November 22, 2000. *Monitoring Well Installation and Sampling Report,* 1450 Fruitvale Avenue, Oakland, California. Prepared for Jay-Phares Corporation, and forwarded to ACEH.

AEI Consultants, Inc., April 5, 2002. *Quarterly Groundwater Monitoring Report,* 1450 Fruitvale Avenue, Oakland, California.

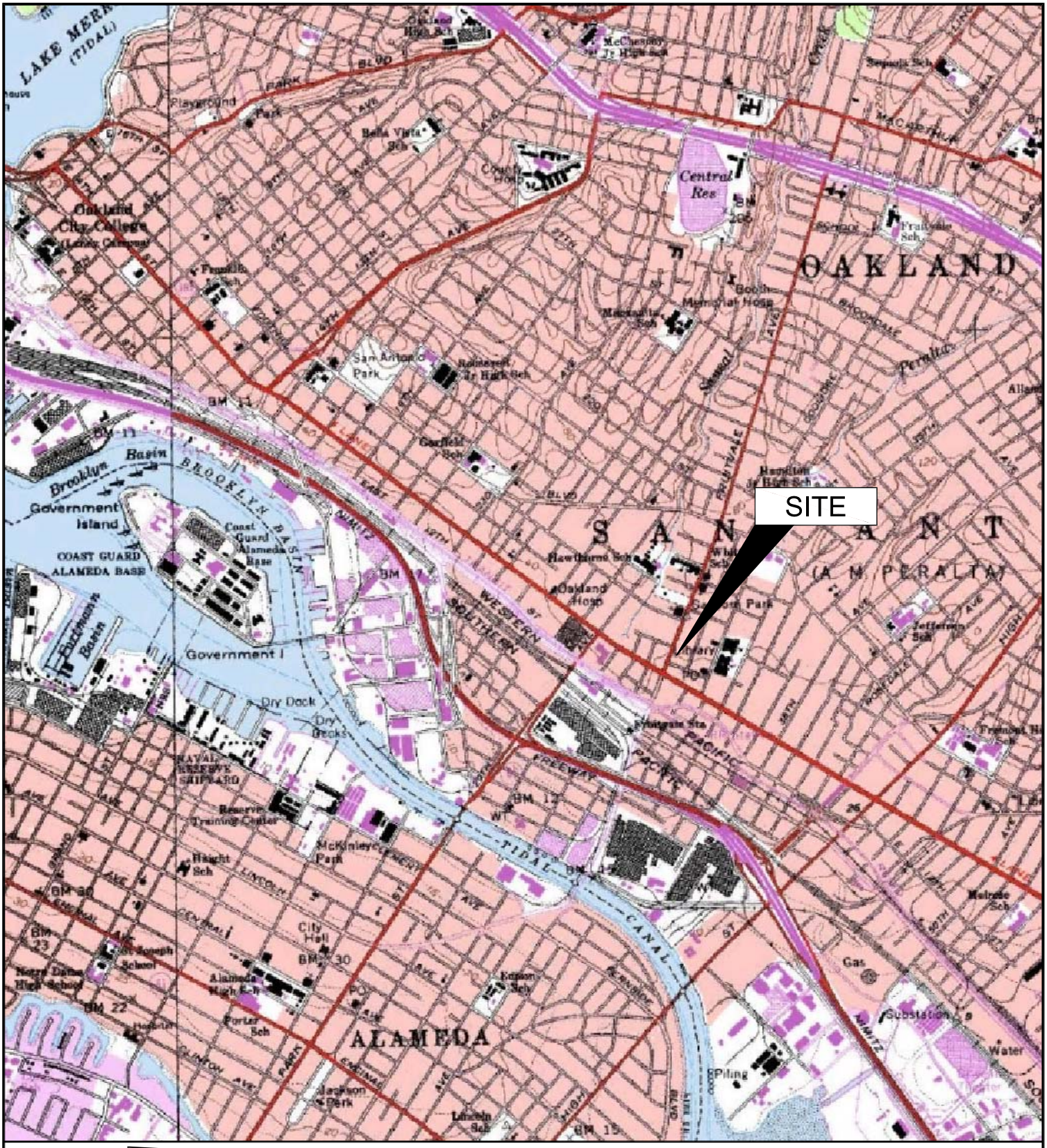
AEI Consultants, Inc., July 5, 2002. *Groundwater Investigation Report,* 1450 Fruitvale Avenue, Oakland, California. Prepared for Fruitvale-Farnam Associates, LLP, and forwarded to ACEH and Mr. Bill Phua care of Jay-Phares Corporation.

AEI Consultants, Inc., October 9, 2002. *Site Summary and Risk Evaluation Report,* 1450 Fruitvale Avenue, Oakland, California. Prepared for Fruitvale-Farnam Associates, LLP, and forwarded to ACEH.

AEI Consultants, Inc., March 3, 2005. *Work Plan – Monitoring Well Installation,* 1450 Fruitvale Avenue, Oakland, California. Prepared for Fruitvale-Farnam Associates, LLP, and forwarded to ACEH on March 7, 2005.

Glenfos, Inc., July 27, 1998. *Limited Phase I and Phase II Environmental Site Assessment, 1450 Fruitvale Avenue, Oakland, California*. Prepared for Glendale Federal Bank.

DRAWINGS

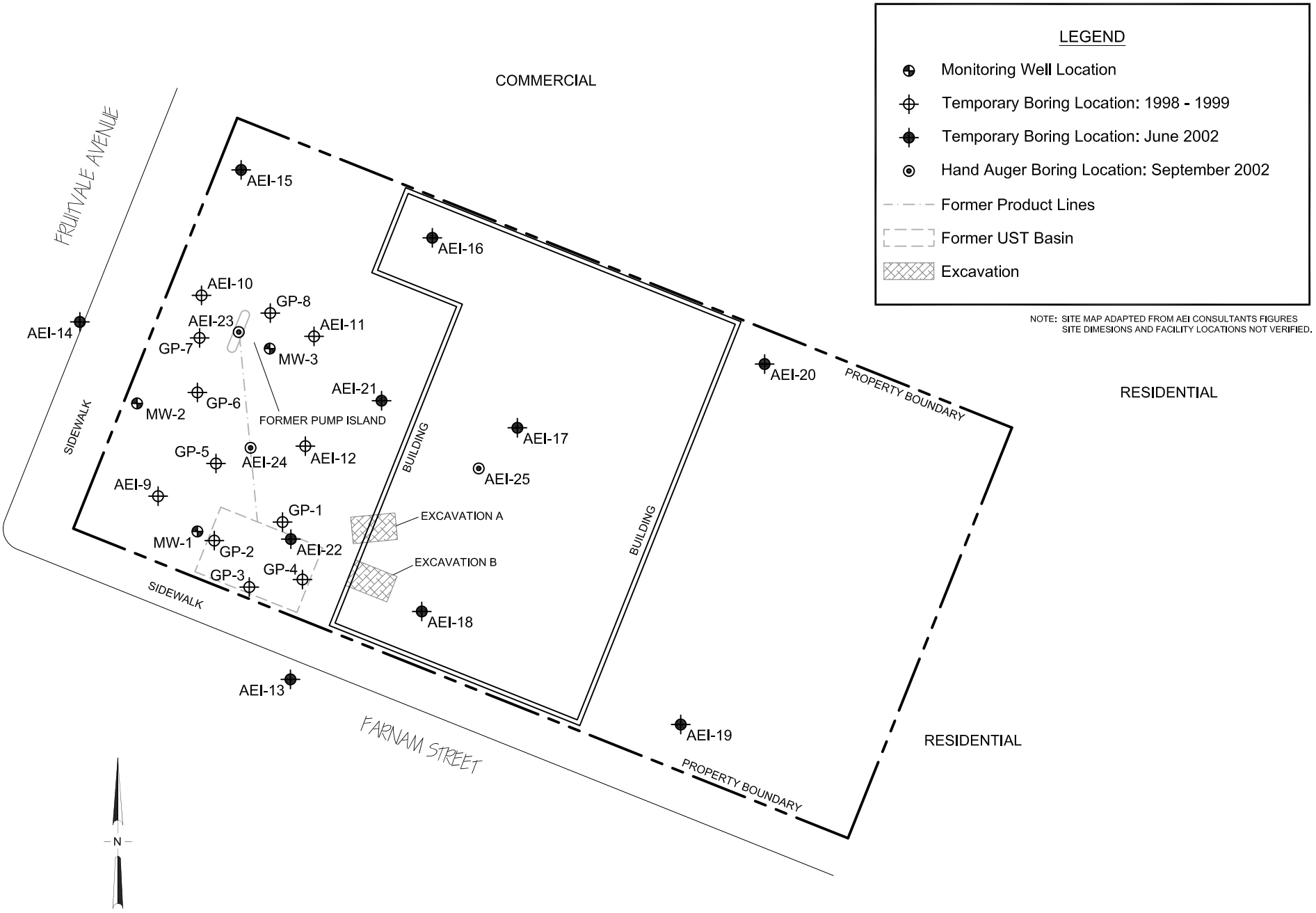


0 2000 4000

APPROXIMATE SCALE (ft)

IMAGE SOURCE: USGS

BROADBENT & ASSOCIATES, INC. ENGINEERING, WATER RESOURCES & ENVIRONMENTAL 1324 Mangrove Ave. Suite 212, Chico, CA 95926 Project No.: 08-88-602 Date: 10/9/09	Station #402 1450 Fruitvale Avenue Oakland, California	Site Location Map	Drawing 1



0 30 60

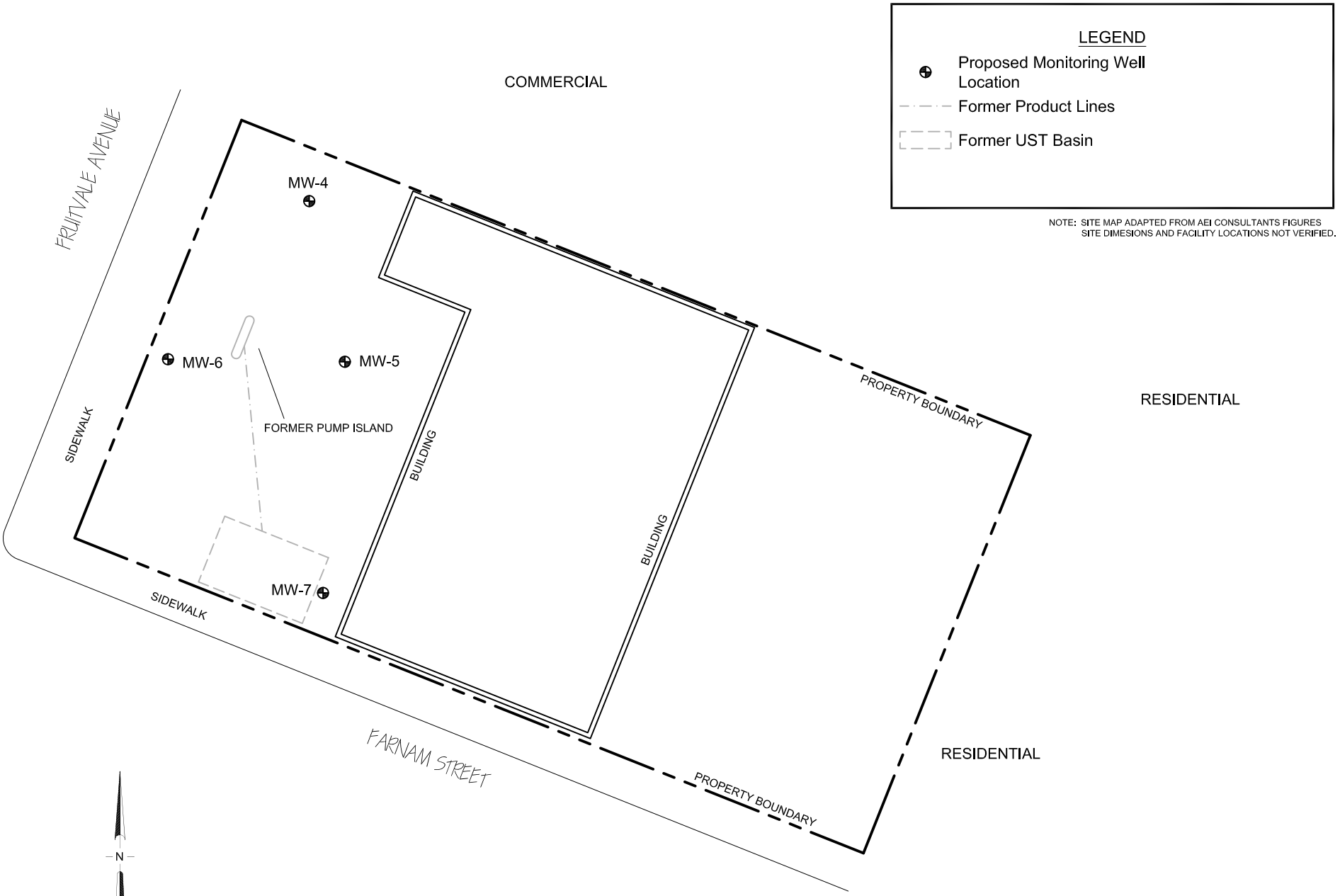
SCALE (ft)

BROADBENT & ASSOCIATES, INC.
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL
1324 Mangrove Ave. Suite 212, Chico, California 95926
Project No.: 08-88-602 Date: 6/14/2012

Former Station #402
1450 Fruitvale Avenue
Oakland, California

Site Map with Historic Boring and Monitoring Well Locations

Drawing
2



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SCALE (ft)

BROADBENT & ASSOCIATES, INC.
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL
1324 Mangrove Ave. Suite 212, Chico, California 95926
Project No.: 08-88-602 Date: 6/14/2012

Former Station #402
1450 Fruitvale Avenue
Oakland, California

Site Map with Proposed Monitoring Well Locations

Drawing
3

APPENDIX A

Historic Soil Data

Table 1 - Soil Sample Analytical Data
1450 Fruitvale Avenue, Oakland, CA - AEI Project # 10460

Sample ID	Consul-tant	Sample Date	TPH-g mg/kg	MTBE mg/kg	Benzene mg/kg	Toluene mg/kg	Ethyl Benzene mg/kg	Xylenes mg/kg	Total Lead mg/kg
GP-1 10'	Glenfos	7/9/1998	10	-	<0.005	0.022	0.015	<0.01	-
GP-2 10'	Glenfos	7/9/1998	1.5	-	0.017	<0.005	<0.005	<0.01	-
GP-2 15'	Glenfos	7/9/1998	27	-	0.017	0.056	0.052	0.51	-
GP-2 30'	Glenfos	7/9/1998	2.5	-	<0.005	<0.005	<0.005	<0.01	-
GP-3 10'	Glenfos	7/9/1998	95	-	0.59	0.42	1.1	1.5	7.3
GP-3 15'	Glenfos	7/9/1998	2.5	-	0.055	0.018	0.055	0.26	-
GP-3 20'	Glenfos	7/9/1998	1.6	-	0.02	<0.005	0.02	0.032	-
GP-3 25'	Glenfos	7/9/1998	<1	-	<0.005	<0.005	<0.005	<0.01	-
GP-4 10'	Glenfos	7/9/1998	2.5	-	0.017	<0.005	0.003	0.021	4.1
GP-5 10'	Glenfos	7/9/1998	6.5	-	<0.005	0.022	0.018	0.041	-
GP-5 15'	Glenfos	7/9/1998	19	-	0.077	0.016	0.43	0.49	-
GP-5 20'	Glenfos	7/9/1998	<1	-	<0.005	<0.005	<0.005	<0.01	-
GP-6 5'	Glenfos	7/9/1998	<1	-	<0.005	<0.005	<0.005	<0.01	-
GP-6 10'	Glenfos	7/9/1998	7.7	-	0.008	0.015	0.012	0.047	6.2
GP-6 15'	Glenfos	7/9/1998	190	-	0.34	0.53	2.3	4.7	-
GP-6 20'	Glenfos	7/9/1998	28	-	0.083	0.081	0.052	0.19	-
GP-7 10'	Glenfos	7/9/1998	86	-	<0.005	0.088	0.09	0.5	-
GP-7 15'	Glenfos	7/9/1998	2.7	-	0.008	0.012	<0.005	0.031	-
GP-8 10'	Glenfos	7/9/1998	24	-	0.022	0.061	0.071	0.45	-
GP-8 15'	Glenfos	7/9/1998	5.8	-	0.021	0.014	0.022	0.06	-
GP-8 20'	Glenfos	8/23/1999	<1	-	<0.005	<0.005	<0.005	<0.01	-
AEI-9 10'	AEI	8/23/1999	<1	<0.05	<0.005	<0.005	<0.005	<0.005	-
AEI-9 20'	AEI	8/23/1999	<1	<0.05	<0.005	<0.005	<0.005	<0.005	-
AEI-10 10'	AEI	8/23/1999	77	<0.05	<0.005	<0.005	0.078	<0.005	-
AEI-10 15'	AEI	8/23/1999	69	0.071	0.1	0.21	0.23	<0.005	-
AEI-11 10'	AEI	8/23/1999	<1	<0.05	<0.005	<0.005	<0.005	<0.005	-
AEI-11 15'	AEI	8/23/1999	210	<0.40	<0.020	1.1	1.2	2.4	-
AEI-12 10'	AEI	8/23/1999	24	<0.05	<0.005	0.12	<0.005	<0.005	-
AEI-12 15'	AEI	8/23/1999	120	<0.40	<0.020	<0.020	1.6	1.6	-
MW-1 6.5'	AEI	9/25-26/00	<1.0	<.05	<.005	<.005	<.005	<.005	-
MW-1 11.5'	AEI	9/25-26/00	15.0	<.05	<.005	0.31	<.005	0.011	-
MW-2 6.5'	AEI	9/25-26/00	<1.0	<.05	<.005	<.005	<.005	<.005	-
MW-2 11'	AEI	9/25-26/00	73.0	<.05	<.005	0.044	0.0080	0.040	-
MW-3 6.5'	AEI	9/25-26/00	<1.0	<.05	<.005	<.005	<.005	<.005	-
MW-3 16'	AEI	9/25-26/00	360.0	<1.0	0.42	2.1	6.5	11.0	-
MDL			1.0	0.05	0.005	0.005	0.005	0.005	

MDL = Method Detection Limit

mg/kg = milligrams per kilogram (ppm)

- Sample not analyzed for this chemical

TPH-g = Total petroleum hydrocarbons as gasoline

Table 1 - Soil Sample Analytical Data: Continued
1450 Fruitvale Avenue, Oakland, CA - AEI Project # 10460

Sample ID	Date	TPH-g mg/kg	MTBE mg/kg	Benzene mg/kg	Toluene mg/kg	Ethyl Benzene mg/kg	Xylenes mg/kg
AEI-13 10'	610-12/02	<1	<0.05	<0.005	<0.005	<0.005	<0.005
AEI-14 10'	610-12/02	<1	<0.05	<0.005	<0.005	<0.005	<0.005
AEI-15 10'	610-12/02	<1	<0.05	<0.005	<0.005	<0.005	<0.005
AEI-16 10'	610-12/02	<1	<0.05	<0.005	<0.005	<0.005	<0.005
AEI-16 19'	610-12/02	41	<0.2	<0.02	<0.02	0.038	0.079
AEI-17 10'	610-12/02	<1	<0.5	<0.005	<0.005	<0.005	<0.005
AEI-17 20'	610-12/02	290	<0.05	0.84	1.3	1.8	2.8
AEI-18 4'	610-12/02	<1	<0.05	<0.005	<0.005	<0.005	<0.005
AEI-18 14'	610-12/02	290	<0.02*	<0.2	0.91	2.3	2.9
AEI-19 15'	610-12/02	<1	<0.05	<0.005	<0.005	<0.005	<0.005
AEI-20 10'	610-12/02	<1	<0.05	<0.005	<0.005	<0.005	<0.005
AEI-20 20'	610-12/02	42	<0.5	<0.05	0.20	0.12	0.15
AEI-21 5'	610-12/02	<1	<0.05	<0.005	<0.005	<0.005	<0.005
AEI-21 13'	610-12/02	12	<0.05	<0.005	0.090	0.028	<0.005
AEI-22 10'	610-12/02	74	<0.1	0.0086	0.58	0.11	0.26
AEI-22 20'	610-12/02	5	<0.05	0.30	0.016	0.26	0.42
AEI-23 2.5'	9/27/2002	<1	<0.05	<0.005	<0.005	<0.005	<0.005
AEI-24 2.5'	9/27/2002	<1	<0.05	<0.005	<0.005	<0.005	<0.005
AEI-25 2.5'	9/27/2002	<1	<0.05	<0.005	<0.005	<0.005	<0.005
MDL		1.0	0.05	0.005	0.005	0.005	0.005

MDL = Method Detection Limit

mg/kg = milligrams per kilogram (ppm)

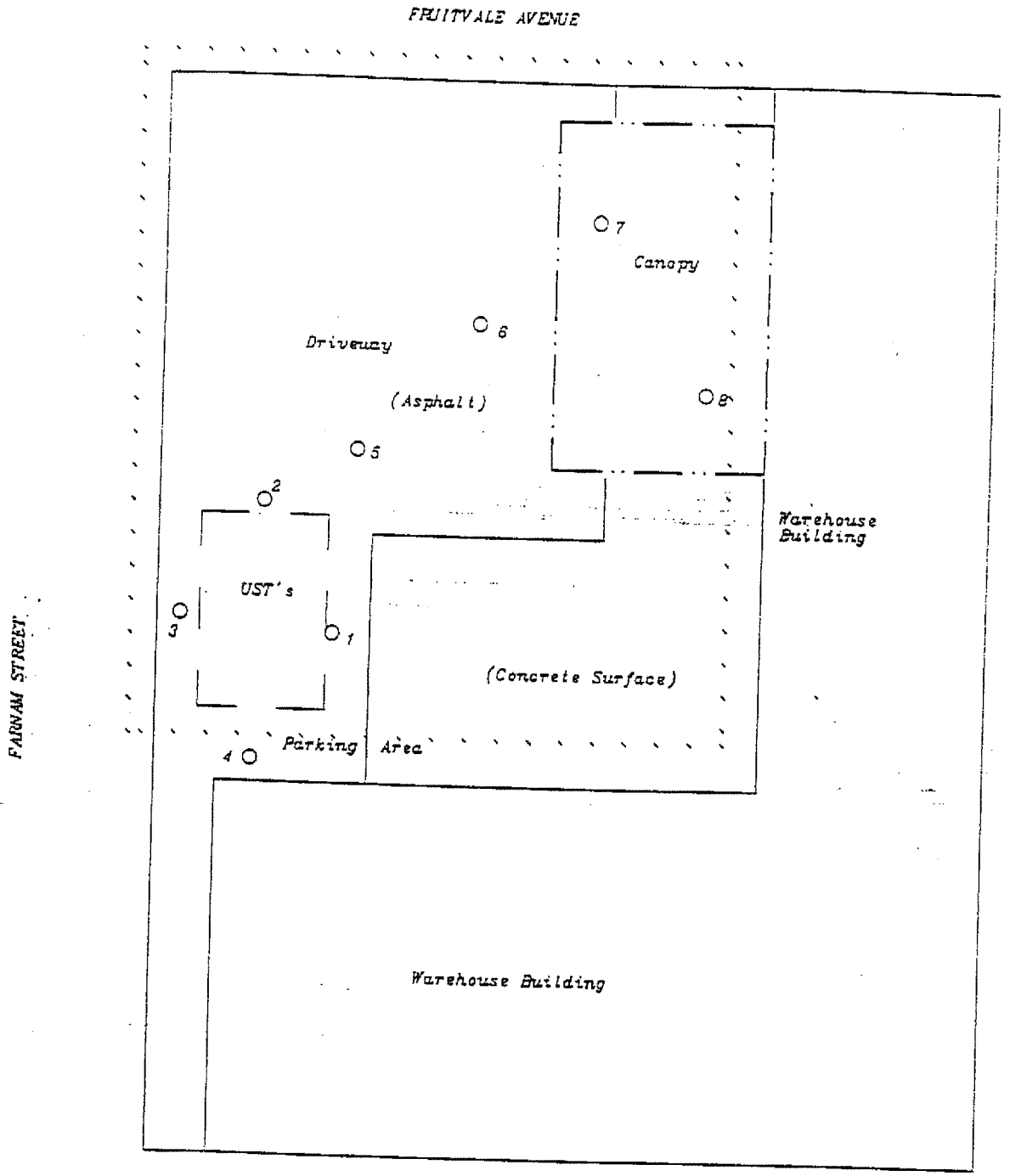
- Sample not analyzed for this chemical

TPH-g = Total petroleum hydrocarbons as gasoline

* MTBE by EPA method 8260, all others by 602/8020

Table 5 - Sample Analtyical Data: Exploratory Excavation Project
1450 Fruitvale Avenue, Oakland, CA - AEI Project # 10460

Sample ID	Location	TPH-g mg/kg	TPH-d mg/kg	TOG mg/kg	MTBE mg/kg	Benzene mg/kg	Toluene mg/kg	Ethyl Benzene mg/kg	Xylenes mg/kg	Total Lead mg/kg
AEI EBA 6'	Exc. A - Bottom	<1.0	<1.0	<50.0	<0.05	<0.005	<0.005	<0.005	<0.005	**6.9**
AEI EBB 6'	Exc. B - Bottom	<1.0	<1.0	<50.0	<0.05	<0.005	<0.005	<0.005	<0.005	**9.1**
AEI EBW 8'	Exc. C - West	<1.0	<1.0	-	<0.05	<0.005	<0.005	<0.005	<0.005	**9.4**
AEI EBE 8'	Exc. C - East	**11**	<1.0	-	<0.05	<0.005	**0.059**	**0.028**	**0.042**	**32**
AEI EBN 8'	Exc. C - North	<1.0	<1.0	-	<0.05	<0.005	<0.005	<0.005	<0.005	**8.7**
AEI EBS 8'	Exc. C - South	<1.0	<1.0	-	<0.05	<0.005	<0.005	<0.005	<0.005	**80**



150 Fruitvale Avenue
Sacramento, CA 94601
CA-94601-061798

LENFOS, Inc.
20 TOPANGA CANYON PLACE SUITE F
CHATSWORTH, CA 91311

FACILITY LAYOUT MAP

N

NOT TO SCALE

FIGURE 2

APPENDIX B

Historic Groundwater Data

Table 2 - Groundwater Sample Analytical Data: Temporary Borings
1450 Fruitvale Avenue, Oakland, CA - AEI Project # 10460

Sample ID	Consultant	Date	TPH-g µg/L	MTBE µg/L	Benzene µg/L	Toluene µg/L	Ethyl-Benzene µg/L	Xylenes µg/L
GP 1	Glenfos	7/9/1998	170	-	0.53	<0.5	1.2	2.0
GP 4	Glenfos	7/9/1998	210	-	<0.5	<0.5	0.58	<1
GP 5	Glenfos	7/9/1998	17,000	-	42	24	820	110
GP 8	Glenfos	7/9/1998	20,000	<10	1,000	19	420	290
AEI GW 8'	AEI	5/27/1999	<50	<5.0	<0.5	<0.5	<0.5	<0.5
AEI-9W	AEI	8/23/1999	690	3.8	72	0.79	29	24
AEI-13 W	AEI	610-12/02	<50	<5.0	<0.5	<0.5	<0.5	<0.5
AEI-14 W	AEI	610-12/02	830	<5.0	0.56	2.7	1.2	2.9
AEI-15 W	AEI	610-12/02	<50	14*	<0.5	<0.5	<0.5	<0.5
AEI-16 W	AEI	610-12/02	190	<5.0	0.86	1.0	0.75	1.3
AEI-17 W	AEI	610-12/02	1,700	<0.5*	56	2.5	89	69
AEI-18 W	AEI	610-12/02	780	<5.0	10	1.1	41	20
AEI-19 W	AEI	610-12/02	<50	<5.0	<0.5	<0.5	<0.5	<0.5
AEI-20 W	AEI	610-12/02	170	<5.0	0.81	0.55	7.7	3.1
AEI-21 W	AEI	610-12/02	2,200	2.8*	36	<5.0	110	58
AEI-22 W	AEI	610-12/02	25000	<12*	3800	290	1100	1900

MDL = Method Detection Limit

ND = Not detected above the Method Detection Limit (unless otherwise noted)

µg/L = micrograms per liter (ppb)

- Sample not analyzed for this chemical

TPH-g = Total petroleum hydrocarbons as gasoline

* MTBE by EPA method 8260, all others by 602/8020

Table 3 - Groundwater Elevation Data
1450 Fruitvale Avenue, Oakland, CA - AEI Project # 10460

Well ID (Screen - ft bgs)	Date	Well Elevation (ft msl)	Depth to Water (ft)	Groundwater Elevation (ft msl)
MW-1 (15-30)	10/16/00	42.13	17.72	24.41
	1/19/01	42.13	9.15	32.98
	4/26/01	42.13	9.40	32.73
	8/3/01	42.13	12.38	29.75
	11/5/01	42.13	16.22	25.91
	3/29/02	42.13	7.96	34.17
	6/11/02	42.13	12.18	29.95
	9/16/02	**42.13**	**11.35**	**30.78**
MW-2 (15-30)	10/16/00	42.08	14.98	27.10
	1/19/01	42.08	9.00	33.08
	4/26/01	42.08	8.34	33.74
	8/3/01	42.08	11.70	30.38
	11/5/01	42.08	15.08	27.00
	3/29/02	42.08	8.96	33.12
	6/11/02	42.08	12.49	29.59
	9/16/02	**42.08**	**10.52**	**31.56**
MW-3 (15-30)	10/16/00	42.55	17.98	24.57
	1/19/01	42.55	10.90	31.65
	4/26/01	42.55	9.21	33.34
	8/3/01	42.55	12.67	29.88
	11/5/01	42.55	15.90	26.65
	3/29/02	42.55	9.20	33.35
	6/11/02	42.55	11.83	30.72
	9/16/02	**42.55**	**11.42**	**31.13**

Episode #	Date	Average Water Table (ft msl)	Change from Previous Episode	Flow direction (gradient)
1	10/16/00	25.36	-	E/SE (0.116)
2	1/19/01	32.57	+7.21	E/NE (0.041)
3	4/26/01	33.27	+0.70	SE (0.034)
4	8/3/01	30.00	-3.27	ESE (0.024)
5	11/5/01	26.52	-3.48	SE (0.033)
6	3/29/02	33.55	+7.03	NW (0.032)
7	6/11/02	30.09	-3.46	SW (0.040)
8	**9/16/02**	**31.16**	**+1.07**	**SE (0.028)**

Notes:
All well elevations are measured from the top of the casings
ft msl = feet above mean sea level

Table 4 - Groundwater Monitoring Well Analytical Data
1450 Fruitvale Avenue, Oakland, CA - AEI Project # 10460

Well/Sample ID	Date Collected	Consultant/ Lab	TPHg µg/L EPA 8015	MTBE µg/L	Benzene µg/L	Toluene µg/L	Ethylbenzene µg/L	Xylenes µg/L
				EPA method 8020				
MW-1	10/16/00	AEI/MAI	4,500	<20	560	14	53	62
	01/19/01	AEI/MAI	13,000	<100	790	46	1,100	210
	04/26/01	AEI/MAI	7,500	<30	470	23	720	120
	08/03/01	AEI/MAI	4,500	<10	440	11	55	6.6
	11/05/01	AEI/MAI	1,700	<10	100	6.0	4.6	2.1
	03/29/02	AEI/MAI	9,500	ND<100	880	32	400	59
	06/11/02	AEI/MAI	3,400	<50	620	9.7	75	11
	09/16/02	**AEI/MAI**	**3,800**	**<10**	**190**	**15.0**	**14**	**7.7**
MW-2	10/16/00	AEI/MAI	4,600	<300	380	3.8	95	33
	01/19/01	AEI/MAI	4,200	<10	450	4.7	120	50
	04/26/01	AEI/MAI	5,600	<20	810	12	210	65
	08/03/01	AEI/MAI	2,900	<20	360	3	97	46
	11/05/01	AEI/MAI	2,400	<85	280	3.2	76	25
	03/29/02	AEI/MAI	7,100	ND<100	930	11	220	39
	06/11/02	AEI/MAI	4,400	<150	680	8.1	160	38
	09/16/02	**AEI/MAI**	**7,400**	**<250**	**360**	**8.4**	**150**	**38**
MW-3	10/16/00	AEI/MAI	12,000	<10	570	32	680	1,200
	01/19/01	AEI/MAI	27,000	<200	3,400	110	2,200	2,700
	04/26/01	AEI/MAI	33,000	<200	3,300	190	2,800	3,400
	08/03/01	AEI/MAI	23,000	<50	2,300	52	1,800	1,400
	11/05/01	AEI/MAI	30,000	<200	1,900	58	2,000	1,600
	03/29/02	AEI/MAI	29,000	ND<100	2,100	57	2,500	1,700
	06/11/02	AEI/MAI	22,000	<50	2,100	44	2,300	1,600
	09/16/02	**AEI/MAI**	**25,000**	**<220**	**2,000**	**47**	**2,200**	**1,100**
MRL			50.0	5.0	0.5	0.5	0.5	0.5

Fuel Oxygenates

Well/Sample ID	Date Collected	DIPE µg/L	ETBE µg/L	MTBE µg/L	TAME µg/L	TBA µg/L	EDB µg/L	1,2-DCA µg/L
					EPA method 8260			
MW-1	**06/11/02**	-	-	2.4	-	-	-	-
	09/16/02	**0.56**	**<0.5**	**<3.0**	**<0.5**	**<0.5**	**<0.5**	**<0.5**
MW-2	**06/11/02**	-	-	23	-	-	-	-
	09/16/02	**7.30**	**<1.2**	**92**	**<1.2**	**<1.2**	**<1.2**	**<1.2**
MW-3	**06/11/02**	-	-	<2.5	-	-	-	-
	09/16/02	**<5.0**	**<5.0**	**<5.0**	**<5.0**	**<50**	**<5.0**	**<5.0**
MRL		0.5	0.5	0.5	0.5	5.0	0.5	0.5

MRL = Method Reporting Limit, unless otherwise shown
µg/L = micrograms per liter
AEI = AEI Consultants
MAI = McCampbell Analytical, Inc.
TPHg = total petroleum hydrocarbons as gasoline
MTBE = methyl tertiary butyl ether

APPENDIX C

Soil Boring/Well Construction Logs and Geologic Cross-Section

SOIL BORING LOG

Drilling Company: Gregg Drilling	Station Name:		Boring Number: GP-1
Drillers:	Address: 1450 Fruitvale		Date Drilled: July 9,1998
Rig Type: Geoprobe GH-40	City: Oakland		Depth Drilled: 12 feet
Rig Number	State, Zip: CA, 94601		Boring Diameter 2 inches
Sampling Tech.: Hydraulic Push	Nearest X-Street: Fairview		Casing Diameter NA
Logged By: Bill Mitchell			

DEPTH BELOW SURFACE (ft)	SAMPLE INTERVAL	OVA READING (ppm)	BLOW COUNTS	GRAPHIC LOG	SOIL CLASSIFICATION	SOIL DESCRIPTION Color, Texture, Moisture
5	X	0			GC	1-inch asphalt, no base Fill-Clayey Gravel, some fine to coarse sand, light brown, moist, no odors
10	X	0				Same, no odor
15						Same, soil saturated, no Hydrocarbon odor
					TD = 12 feet	
20						
25						
30						
35						
40						
45						
50						
55						

Note: Collected groundwater sample GP-1. Groundwater appears clean, and perched in the UST tank pit.

CLIENT NAME:	Glendale Federal Bank
PROJECT NAME:	1450 Fruitvale
PROJECT NUMBER:	P1/P2-94601-061798

GLENFOS, INC.
Global Environmental Focus
9620 Topanga Canyon Place
Chatsworth, CA 91311

SOIL BORING LOG

Drilling Company: Greez Drilling	Station Name:		Boring Number: GP-1
Drillers:	Address:	1450 Fruitvale Avenue	Date Drilled: June 9,1998
Rig Type: Geoprobe GH-40	City:	Oakland	Depth Drilled: 30 feet
Rig Number	State, Zip:	CA 94601	Boring Diameter 2 Inches
Sampling Tech.: Hydraulic Push	Nearest X-Street:	Foreman Street	Casing Diameter NA
Logged By: Bill Mitchell			

DEPTH BELOW SURFACE (ft)	SAMPLE INTERVAL	OVA READING (ppm)	BLOW COUNTS	GRAPHIC LOG	SOIL CLASSIFICATION	SOIL DESCRIPTION (Color, Texture, Moisture)
5	X	0			ML	1- inch asphalt, no base. Clayey silt, greyish brown, moist, no Hydrocarbon odor
10	X	0				Same as above, moist, no Hydrocarbon odor
15	X					Same, except streaks of dark grey, and a slight odor.
20					CL	Silty clay, dark brown to grey, moist, slight to moderate Hydrocarbon odor
25						
30	X	0			TD = 30 feet	Same - no Hydrocarbon odor
35						
40						
45						
50						
55						Notes: Groundwater not encountered.

CLIENT NAME:	Glendale Federal Bank
PROJECT NAME:	1450 Fruitvale
PROJECT NUMBER:	P1/P2-94601-061798

GLENFOS, INC.
Global Environmental Focus
9620 Topanga Canyon Place
Chatsworth, CA 91311

SOIL BORING LOG

Drilling Company:	Gregg Drilling	Station Name:		Boring Number:	GP-3
Driller:		Address:	1450 Fruitvale	Date Drilled:	July 9,1998
Rig Type:	Geoprobe GH-60	City:	Oakland	Depth Drilled:	28 feet
Rig Number		State, Zip:	CA 94601	Boring Diameter	2 Inches
Sampling Tech.:	Hydraulic Push	Nearest X-Street:	Canoga Avenue	Casing Diameter	NA
Logged By:	Bill Mitchell				

DEPTH BELOW SURFACE (ft.)	SAMPLE INTERVAL	OVA READING (ppm)	BLOW COUNTS	GRAPHIC LOG	SOIL CLASSIFICATION	SOIL DESCRIPTION Color, Texture, Moisture
						1- inch asphalt no base
5	X	0				Clayey silt, greenish brown, moist, no Hydrocarbon odor
10	X	210			ML	Same, moist no Hydrocarbon odor.
15	X	2				Same, moist, slight to moderate Hydrocarbon odor
20	X	39				Same, moderate Hydrocarbon odor
25	X	1			GP	Sandy Gravel, some clay, light brown, moist, no Hydrocarbon odor.
					TD = 28 feet	
30						
35						
40						
45						
50						
55						Note: Groundwater not encoutered

CLIENT NAME:	Glendale Federal Bank
PROJECT NAME:	1450 Fruitvale
PROJECT NUMBER:	P1/P2-94601-061798

GLENFOS, INC.
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Chatsworth, CA 91311

SOIL BORING LOG

Drilling Company: Gregg Drilling	Station Name:		Boring Number: GP-4
Drillers:	Address: 1450 Fruitvale Avenue		Date Drilled: July 9, 1998
Rig Type: Geoprobe GH-40	City: Oakland		Depth Drilled: 28 feet
Rig Number	State, Zip: CA, 94601		Boring Diameter 2 inches
Sampling Tech.: Hydraulic Push	Nearest X-Street: Foreson		Casing Diameter NA
Logged By: Bill Mitchell			

DEPTH BELOW SURFACE (ft)	SAMPLE INTERVAL	OVA READING (ppm)	BLOW COUNTS	GRAPHIC LOG	SOIL CLASSIFICATION	SOIL DESCRIPTION Color, Texture, Moisture
5	X	0			GC	1- inch asphalt, no base. Fill- Clayey Gravel, some fine to coarse sand, light brown, moist, no Hydrocarbon odor Same, moist, no Hydrocarbon odor.
10	X	468			ML TD = 12 feet	Sandy Silt, some gravel, light brown with streaks of greenish grey, strong Hydrocarbon odor
15						
20						
25						
30						
35						
40						
45						
50						
55						

Note: Groundwater collected at a depth of 10 feet. Obtained sample GP-4
Groundwater had no Hydrocarbon odor and appears to have been perched
UST pit.

CLIENT NAME:	Glendale Federal Bank
PROJECT NAME:	1450 Fruitvale
PROJECT NUMBER:	P1/P2-94601-061798

GLENFOS, INC.
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9620 Topanga Canyon Place
Chatsworth, CA 91311

SOIL BORING LOG

Drilling Company:	Gregg Drilling	Station Name:		Boring Number:	GP-3
Drillers:		Address:	1450 Fruitvale	Date Drilled:	July 9,1998
Rig Type:	Geoprobe GH-40	City:	Oakland	Depth Drilled:	11 feet
Rig Number		State, Zip:	CA 94601	Boring Diameter:	3 Inches
Sampling Tech.:	Hydraulic Push	Nearest X-Street:	Fairview	Casing Diameter:	NA
Logged By:	Sid Mitchell				

DEPTH BELOW SURFACE (ft.)	SAMPLE INTERVAL	OVA READING (ppm)	BLOW COUNTS	GRAPHIC LOG	SOIL CLASSIFICATION	SOIL DESCRIPTION Color, Texture, Moisture
5	X					1-inch asphalt, no base Clayey silt, greyish brown, moist, no Hydrocarbon odor
10	X				ML	Same, moist, no Hydrocarbon odor.
15	X					Clayey silt, greyish brown to grey, with black streaks, moist moderate Hydrocarbon odor.
20	X				CL	Silty clay, dark brown to grey, moist moderate Hydrocarbon odor.
25					ML	
30					TD = 22 feet	Clayey silt, some fine gravel, greyish brown with black streaks, moist slight Hydrocarbon odor.
35						
40						
45						
50						
55						

CLIENT NAME:	Glendale Federal Bank
PROJECT NAME:	1450 Fruitvale
PROJECT NUMBER:	P1/P2-94601

GLENFOS, INC.
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9620 Topanga Canyon Place
Chatsworth, CA 91311

SOIL BORING LOG

Drilling Company:	Gregg Drilling	Station Name:		Boring Number:	GP-4
Drillers:		Address:	1450 Fruitvale	Date Drilled:	July 9,1998
Rig Type:	Geoprobe GH-40	City:	Oakland	Depth Drilled:	22 feet
Rig Number		State, Zip:	CA 94601	Boring Diameter	1 Inches
Sampling Tech.:	Hydraulic Push	Nearest X-Street:	Fruvale	Casing Diameter	NA
Logged By:	Bill Mitchell				

DEPTH BELOW SURFACE (ft.)	SAMPLE INTERVAL	OVA READING (ppm)	BLOW COUNTS	GRAPHIC LOG	SOIL CLASSIFICATION	SOIL DESCRIPTION Color, Texture, Moisture
						1-inch asphalt, no base
						Clayey silt- greyish brown, moist, no Hydrocarbon odor
5	X	0			ML	
						Same, moist, no Hydrocarbon odor
10	X	15				Clayey silt, greyish brown with black streaks, moist, moderate Hydrocarbon
15	X	14			CL	Silty Clay, dark brown to gray, moist, moderate Hydrocarbon odor
20	X	1			GP	Clayey silt, some fine gravel, greyish brown with black streaks, moist, slight Hydrocarbon odor
					TD = 22 feet	
25						
30						
35						
40						
45						
50						
55						

Notes: Groundwater encountered at 20 feet, rose to 9 feet in 10 minuteS. Collected sample GP-4. Strong Hydrocarbon odor, and a petroleum sheen observed.

CLIENT NAME:	Glendale Federal Bank
PROJECT NAME:	1450 Fruitvale
PROJECT NUMBER:	P1/P2-94601-081798

GLENFOS, INC.
Global Environmental Focus
9620 Topanga Canyon Place
Chatsworth, CA 91311

SOIL BORING LOG

Drilling Company:	Gregg Drilling	Station Name:		Boring Number:	GP-7
Drillers:		Address:	1450 Fruitvale	Date Drilled:	July 9,1998
Rig Type:	Geoprobe GH-40	City:	Oakland	Depth Drilled:	22 feet
Rig Number		State, Zip:	CA 94601	Boring Diameter	2 inches
Sampling Tech:	Hydraulic Push	Nearest X-Street:	Fairoaks	Casing Diameter	NA
Logged By:	Bill Mitchell				

DEPTH BELOW SURFACE (ft)	SAMPLE INTERVAL	OVA READING (ppm)	BLOW COUNTS	GRAPHIC LOG	SOIL CLASSIFICATION	SOIL DESCRIPTION (Color, Texture, Moisture)
						1-inch asphalt, no base
					ML	Clayey silt, greyish brown, moist, no Hydrocarbon odor
5	X	100				
						Same, moist, strong Hydrocarbon odor
10	X	323				
					ML	Sandy silt, some gravel, light brown with streaks of greenish grey, moist, strong Hydrocarbon odor
15	X	25				
					TD = 16 feet	Silty Clay, dark brown to grey, moist, moderate Hydrocarbon odor
20		136				Sandy gravel, some clay, light brown, moist, moderate Hydrocarbon odor
25						
30						
35						
40						
45						
50						
55						note: Groundwater not encountered

CLIENT NAME:	Glendale Federal Bank
PROJECT NAME:	1450 Fruitvale
PROJECT NUMBER:	P1/P2-94601-061798

GLENFOS, INC.
Global Environmental Focus
9520 Topanga Canyon Place
Chatsworth, CA 91311

SOIL BORING LOG

Drilling Company:	Gregg Drilling	Station Name:		Boring Number:	GP-6
Drillers:		Address:	1450 Fruitvale	Date Drilled:	July 9,1998
Rig Type:	Geoprobe GH-40	City:	Oakland	Depth Drilled:	16 feet
Rig Number		State, Zip:	CA 94601	Boring Diameter	2 Inches
Sampling Tech.:	Hydraulic Push	Nearest X-Street:	Fruvale	Casing Diameter	NA
Logged By:	Bill Mitchell				

DEPTH BELOW SURFACE (ft.)	SAMPLE INTERVAL	OVA READING (ppm)	BLOW COUNTS	GRAPHIC LOG	SOIL CLASSIFICATION	SOIL DESCRIPTION Color, Texture, Moisture
5	X	5			ML	0.5 inch concrete, no base Clayey silt, greyish brown, moist, no Hydrocarbon odor
						Same, moist, slight Hydrocarbon odor
10	X	85			ML	Sandy silt, some gravel, light brown with streaks of grey, strong Hydrocarbon odor
15	X	36				Same, moist, slight to moderate Hydrocarbon odor
20	X				GP	TD = 22 feet
25						
30						
35						
40						
45						
50						
55						Note: Groundwater not encountered

CLIENT NAME:	Glendale Federal Bank
PROJECT NAME:	1450 Fruitvale Avenue
PROJECT NUMBER:	P1/P2-94601-061798

GLENFOS, INC.
Global Environmental Focus
9620 Topanga Canyon Place
Chatsworth, CA 91311

Project No: 3397

Project Name: FRUITVALE

Client: JAY-PHARES CORP

Location: WESTERN CORNER

Sheet: 1 of 1

Log of Borehole: AEI-9

Depth (ft)	Depth (m)	Soil Symbol	Subsurface Description	Sample Data: Sample Label	Sample Data: Type	Sample Data: Blow Counts/	Sample Data: Recovery	Well Data	Remarks
0	0		Ground Surface						
0–1	0		***ASPHALT***						
1–5	0–1		***CLAY*** Silty and sandy clay						
5	1			AEI-9 5'	SS		100		No hydrocarbon odor
5–10	1–3								
10	3		Sandy clay with gravel up to 2 cm	AEI-9 10'	SS		100		No hydrocarbon odor
10–14	3–4							▼	Groundwater after 15 min.
15	4		Stiff silty clay	AEI-9 15'	SS		45		No hydrocarbon odor
15–20	4–6								
20	6			AEI-9 20'	SS		80		Strong hydrocarbon odor
20–29	6–9		***GRAVEL*** Coarse sandy gravel up to 3 cm, clast supported						
29–30	9								No hydrocarbon odor
30	9		***CLAY*** Silty clay with gravel up to 2.5 cm	AEI-9 30'	SS		90		Groundwater initially observed
30–33	9–10		End of Borehole						
33–36	10								

Drill Date 9/28/99

Drill Method: DIRECT PUSH

Total Depth: 32 ft.

Depth to Water: 14 ft.

Reviewed by: JPD

Logged by: PJM

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Project No: 3397

Sheet: 1 of 1

Project Name: FRUITVALE

Log of Borehole: AEI-10

Client: JAY-PHARES CORP

Location: SOUTHERN PORTION, NEAREST EXCAVATION

Depth (ft / m)	Soil Symbol	Subsurface Description	Sample Data: Sample Label	Type	Blow Counts/	Recovery	Well Data	Remarks
0 / 0		Ground Surface						
0		***CONCRETE***						
1		***CLAY***						
2		Silty clay, moderately plastic						
3 / 1								
4								
5			AEI-10 5'	SS		100		Moderate hydrocarbon odor
6								
7 / 2								
8								
9								
10 / 3		Stiff silty clay with fine sand	AEI-10 10'	SS		100		Moderate hydrocarbon odor
11								
12								
13 / 4								
14								
15			AEI-10 15'	SS		100		
16 / 5								Mild hydrocarbon odor
17								
18								
19								
20 / 6		Sandy clay, damp	AEI-10 20'	SS		100		No hydrocarbon odor
21								
22								
23 / 7								
24								
25			AEI-10 25'	SS		50		No hydrocarbon odor
26 / 8								
27								
28								
29								
30 / 9		Stiff silty clay	AEI-10 30'	SS		100		No hydrocarbon odor
31								
32								No groundwater generation
33 / 10		End of Borehole						
34								
35								
36								

Drill Date 9/28/99

Drill Method: DIRECT PUSH

Total Depth: 33 ft.

Depth to Water: NA

Reviewed by: JPD

Logged by: PJM

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Project No: 3397

Sheet: 1 of 1

Project Name: FRUITVALE

Log of Borehole: AEI-11

Client: JAY-PHARES CORP

Location: SOUTH EAST OF FORMER DISPENSERS

Depth (ft / m)	Soil Symbol	Subsurface Description	Sample Data: Sample Label	Sample Data: Type	Sample Data: Blow Counts/	Sample Data: Recovery	Well Data	Remarks
0 / 0		Ground Surface						
0		***ASPHALT***						
1		***CLAY***						
2		Silty clay, moderately plastic						
3 / 1								
4								
5		Gravel present at 5%	AEI-11 5'	SS		60		No hydrocarbon odor
6								
7 / 2								
8								
9								
10 / 3		Stiff silty clay	AEI-11 10'	SS		100		No hydrocarbon odor
11								
12								
13 / 4								
14								
15			AEI-11 15'	SS		100		
16								Strong hydrocarbon odor
17 / 5								
18								
19								
20 / 6			AEI-11 20'	SS		5		No sample recovery
21								
22								
23 / 7		Stiff sandy clay, locally damp						
24								
25								
26 / 8								
27								
28								
29								No hydrocarbon odor
30 / 9			AEI-11 30'	SS		20		Not sufficient soil collected
31								
32								No groundwater generation
33 / 10		End of Borehole						
34								
35								
36								

Drill Date 9/28/99

Drill Method: DIRECT PUSH

Total Depth: 33 ft.

Depth to Water: NA

Reviewed by: JPD

Logged by: PJM

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Project No: 3397

Sheet: 1 of 1

Project Name: FRUITVALE

Client: JAY-PHARES CORP

Location: NORTH OF FORMER DISPENSERS

Log of Borehole: AEI-12

Depth (ft)	Depth (m)	Soil Symbol	Subsurface Description	Sample Data: Sample Label	Sample Data: Type	Sample Data: Blow Counts/	Sample Data: Recovery	Well Data	Remarks
0	0		Ground Surface						
0	0		***CONCRETE***						
1			***CLAY***						
2			Stiff clay with minor sand						
3	1								
4									
5				AEI-12 5'	SS		60		No hydrocarbon odor
6									
7	2								
8									
9									
10	3		Sandy clay w/ coarse gravel	AEI-12 10'	SS		90		Mild hydrocarbon odor
11			up to 2.5 cm, unconsolidated						
12									
13	4								
14									
15			Stiff silty clay, dry	AEI-12 15'	SS		85		
16	5								Moderate hydrocarbon odor
17									
18									
19									
20	6			AEI-12 20'	SS		15		No sample recovery
21									
22			Silty clay						
23	7								
24									
25									
26	8								
27									
28									
29									
30	9								Groundwater sample exposed
31									between 30 and 34 feet bgs.
32									No groundwater generation
33	10								
34			End of Borehole						
35									
36									

Drill Date 9/28/99

Drill Method: DIRECT PUSH

Total Depth: 34 ft.

Depth to Water: NA

Reviewed by: JPD

Logged by: PJM

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Project No: 5183

Sheet: 1 of 1

Project Name: Fruitvale

Log of Borehole: SB-13

Client: PHUA

Location: Oakland, CA

Depth	USCS Symbol	USCS Label	Subsurface Description	Sample Data: Sample Label	Type	Blow/ft	Recovery	Well Data	Remarks
0			Ground Surface						
2			***Hand Auger*** Black, earthy soils						
4									Slight HC odor
6			***Clay*** Sandy, grey color	AEI-13 5'	SS				PID <1 ppm
8									
10			***Clay*** Firm clay, less sand, redish/grey mottled appearance	AEI-13 10'	SS				Slight HC odor
12									PID <1 ppm
14								▼	
16			***Clay*** Stiff, tan color, very few sands	AEI-13 15'	SS				
18			***Clay*** Gravelly, sandy						PID <1 ppm
20				AEI-13 20'	SS				
22									
24			***Clay*** Stiff, tan color, 10-20 % sands						PID <1 ppm
26				AEI-25'	SS				
28			***Sand*** Silty w/ lots of gravels						Slight HC odor
30				AEI-13 30'	SS				
32			End of Borehole						
34									

Drill Date 6/10/02

Drill Method: Direct Push

Total Depth: 30

Depth to Water: 14.5

Reviewed by:

Logged by: AW

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Project Name: Fruitvale

Log of Borehole: SB-14

Client: PHUA

Location: Oakland, CA

Depth	USCS Symbol	USCS Label	Subsurface Description	Sample Data: Sample Label	Type	Blow/ft	Recovery	Well Data	Remarks
0			Ground Surface						
2			***Hand Auger*** Black, earthy soils						
4									
6			***Clay*** Sandy, brown color						
8									
10			***Clay*** Stiff, olive green color, some gravels	AEI-14 10'	SS				PID 2 ppm
12			***Clay*** Firm, very sandy, green/brown mottled appearance						Slight HC odor
14									
16			***Clay*** Stiff, olive green color	AEI-14 15'	SS				PID 1 ppm
18									Slight HC odor
20			***Clay*** Gravelly, 30% gravels, olive color	AEI-14 20'	SS				PID 4 ppm
22									
24									No HC odor
26				AEI-14 25'	SS				
28			***Clay*** Soft, very wet, tan color						
30				AEI-14 30'	SS				
32			***Sand*** Clayey w/ some gravels, wet and dry layers					▼	
34									

Drill Date 6/10/02

Drill Method: Direct Push

Total Depth: 35

Depth to Water: 32

Reviewed by:

Logged by: AW

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Project No: 5183

Project Name: Fruitvale

Client: PHUA

Location: Oakland, CA

Sheet: 1 of 1

Log of Borehole: SB-15

Depth	USCS Symbol	USCS Label	Subsurface Description	Sample Data: Sample Label	Sample Data: Type	Sample Data: Blow/ft	Sample Data: Recovery	Well Data	Remarks
0			Ground Surface						
2			***Sand*** Clayey, some gravels, black color						No HC odor
4									
6			***Clay*** Very sandy, some gravels, tan color	AEI-15 5'	SS				PID <1ppm
8									
10				AEI-15 10'	SS				
12			***Clay*** Gravelly, black color						
14									
16			***Sand*** Black color, gravelly	AEI-15 15'	SS				PID <1 ppm
18				AEI-15 18'	SS				No HC odor
20			***Clay*** Dry, sandy, gravelly, brown color						PID <1 ppm
22								▼	
24				AEI-15 24'	SS				No HC odor
26			***Gravel*** Mixed with firm brown clays and some sands						
28									
30			End of Borehole	AEI-15 30'	SS				
32									
34									

Drill Date 6/10/02

Drill Method: Direct Push

Total Depth: 30

Depth to Water: 23

Reviewed by:

Logged by: AW

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Project Name: Fruitvale

Client: PHUA

Location: Oakland, CA

Sheet: 1 of 1

Log of Borehole: SB-16

Depth	USCS Symbol	USCS Label	Subsurface Description	Sample Label	Type	Blow/ft	Recovery	Well Data	Remarks
0			Ground Surface						
2			***Clay*** Stiff, gravelly 10-20%, black						No HC odor
4									
6				AEI-16 5'	SS				PID <1ppm
8			***Clay*** Firm, gravel 50%, brown color						
10				AEI-16 10'	SS				
12									
14									
16			***Clay*** Stiff, tan color	AEI-16 15'	SS				PID <1 ppm HC odor
18									
20			***Clay*** Stiff, olive green color, minor gravels	AEI-16 19'	SS				PID 309 ppm
22			***Clay*** Stiff, sandy, brownish/green mottled color						
24									PID 17 ppm
26			***Clay*** Gravelly, sandy, wet	AEI-16 25'	SS				
28			***Clay*** Mottled grey/green/bron appearance, gravelly, wet					▼	
30			End of Borehole						
32									
34									

Drill Date 6/10/02

Drill Method: Direct Push

Total Depth: 30

Depth to Water: 28

Reviewed by:

Logged by: AW

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Project No: 5183

Project Name: Fruitvale

Client: PHUA

Location: Oakland, CA

Sheet: 1 of 1

Log of Borehole: SB-17

Depth	USCS Symbol	USCS Label	Subsurface Description	Sample Data: Sample Label	Type	Blow/ft	Recovery	Well Data	Remarks
0			Ground Surface						
2			***Soil*** Firm, clayey, black color						
4			***Clay*** Firm, green color, some gravels and sands 20-30%						No HC odor
6									
8									
10			***Sand*** Brown, gravelly, some clay	AEI-17 10'	SS				
12									No HC odor
14			***Clay*** Stiff, olive green color, minor gravels						
16				AEI-17 15'	SS				Strong HC odor
18									
20				AEI-17 20'	SS				Slight HC odor
22									
24			***Clay*** Stiff, green color					▼	
26				AEI-17 25'	SS				
28									
30			***Clay*** Stiff. green	AEI-17 30'	SS				Strong HC odor
32			***Clay*** Tan, saturated						
34									

Drill Date 6/10/02

Drill Method: Direct Push

Total Depth: 35

Depth to Water: 23.5

Reviewed by:

Logged by: AW

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Project No: 5183

Project Name: Fruitvale

Client: PHUA

Location: Oakland, CA

Sheet: 1 of 1

Log of Borehole: SB-18

Depth	USCS Symbol	USCS Label	Subsurface Description	Sample Data: Sample Label	Type	Blow/ft	Recovery	Well Data	Remarks
0			Ground Surface						
2			***Soil*** Firm, black color, 20% gravels						
4				AEI-18 4'	SS				PID 112 ppm
6			***Clay*** Stiff, brownish, 20% sand						Slight HC odor
8									
10				AEI-18 10'	SS				Strong HC odor
12			***Clay*** Stiff, green color						PID 112 ppm
14				AEI-18 14'	SS				PID 181 ppm
16			***Clay*** Stiff, 40% sand and gravels, olive green/orange mottled appearance						Slight HC odor
18									
20									PID 46 ppm
22			***Clay*** Firm, brownish color, slightly wet						
24									Strong HC odor
26				AEI-18 25'	SS			▼	
28			***Clay*** Stiff. green						
30			***Silt*** Isolated lens	AEI-18 30'	SS				PID <1 ppm
32			***Clay*** Stiff, brown, 40% gravels						
34									

Drill Date 6/10/02

Drill Method: Direct Push

Total Depth: 35

Depth to Water: 25.3

Reviewed by:

Logged by: AW

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Project No: 5183

Project Name: Fruitvale

Client: PHUA

Location: Oakland, CA

Sheet: 1 of 1

Log of Borehole: SB-19

Depth	USCS Symbol	USCS Label	Subsurface Description	Sample Data: Sample Label	Type	Blow/ft	Recovery	Well Data	Remarks
0			Ground Surface						
2			***Soil*** Firm, black color, 20% gravels						
4									
6									
8									No HC odor
10			***Clay*** Stiff, brownish, 20% gravels	AEI-19 10'	SS				PID <1 ppm
12									
14									
16				AEI-19 15'	SS				PID <1 ppm
18			***Clay*** Stiff, green color, fine grained						HC odor
20				AEI-19 20'	SS			▼	PID 9 ppm
22									PID 3 ppm
24			***Clay*** Firm, brown, 20% gravels						
26			End of Borehole	AEI-19 25'	SS				
28									
30									
32									
34									

Drill Date 6/10/02

Drill Method: Direct Push

Total Depth: 25

Depth to Water: 20.5

Reviewed by:

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Project No: 5183

Project Name: Fruitvale

Client: PHUA

Location: Oakland, CA

Sheet: 1 of 1

Log of Borehole: SB-20

Depth	USCS Symbol	USCS Label	Subsurface Description	Sample Label	Type	Blow/ft	Recovery	Well Data	Remarks
0			Ground Surface						
2			***Soil*** Firm, black color, sandy						
4									
6				AEI-20 5'	SS				
8			***Clay*** Soft, brown, 30% sand						PID <1 ppm
10				AEI-20 10'	SS				PID 2 ppm
12									Slight HC odor
14			***Clay*** Stiff, green color						PID 4 ppm
16				AEI-20 15'	SS				
18			***Clay*** Firm, brown, 30% sand						HC odor
20			***Clay*** Stiff, green color, 40% gravels	AEI-20 20'	SS				PID 12 ppm
22								▼	
24									HC odor
26			***Clay*** Stiff, green/grey color w/ some orange sands	AEI-20 25'	SS				PID 13 ppm
28									PID 8 ppm
30									
32									Slight HC odor
34			***Sand*** Firm, wet, clayey	AEI-20 33'	SS				

Drill Date 6/10/02

Drill Method: Direct Push

Total Depth: 35

Depth to Water: 22

Reviewed by:

Logged by: AW

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Project No: 5183

Project Name: Fruitvale

Client: PHUA

Location: Oakland, CA

Sheet: 1 of 1

Log of Borehole: SB-21

Depth	USCS Symbol	USCS Label	Subsurface Description	Sample Label	Type	Blow/ft	Recovery	Well Data	Remarks
0			Ground Surface						
2			***Soil*** Firm, black color, 30% sand						Slight HC odor
4									
6				AEI-21 5'	SS				HC odor
8			***Clay*** Firm, olive green color, 5% sand						
10				AEI-21 9'	SS				
12			***Clay*** Stiff, olive green color, 20% gravels					▼	Strong HC odor
14				AEI-21 13'	SS				
16			***Clay*** Stiff, olive green color, fine grained, 5% sands	AEI-21 15'	SS				PID 239 ppm
18									PID 38 ppm
20				AEI-21 20'	SS				
22			***Gravels*** Isolated layer						
24			***Sand*** Firm, grey color, clayey	AEI-21 24'	SS				PID 124 ppm
26			***Clay*** Very sandy w/ gravels, brown color						
28			End of Borehole						
30									
32									
34									

Drill Date 6/10/02

Drill Method: Direct Push

Total Depth: 28

Depth to Water: 13

Reviewed by:

Logged by: AW

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Project No: 5183

Project Name: Fruitvale

Client: PHUA

Location: Oakland, CA

Sheet: 1 of 1

Log of Borehole: SB-22

Depth	USCS Symbol	USCS Label	Subsurface Description	Sample Data: Sample Label	Sample Data: Type	Sample Data: Blow/ft	Sample Data: Recovery	Well Data	Remarks
0			Ground Surface						
2			***Soil*** Firm, sands and gravels present						
4									
6			***Clay*** Stiff w/ fine sands and silts, dk brown	AEI-22 5'	SS				
8									
10				AEI-22 10'	SS				
12									HC odor
14			***Clay*** Stiff, olive green color, 10% gravels						
16				AEI-22 15'	SS				
18								▼	
20				AEI-22 20'	SS				Slight HC odor
22			***Clay*** Stiff, olive green color, gravel locally						
24									
26				AEI-22 25'	SS				
28			End of Borehole						
30									
32									
34									

Drill Date 6/10/02

Drill Method: Direct Push

Total Depth: 25

Depth to Water: 19

Reviewed by:

Logged by: AW

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Project No: 3581

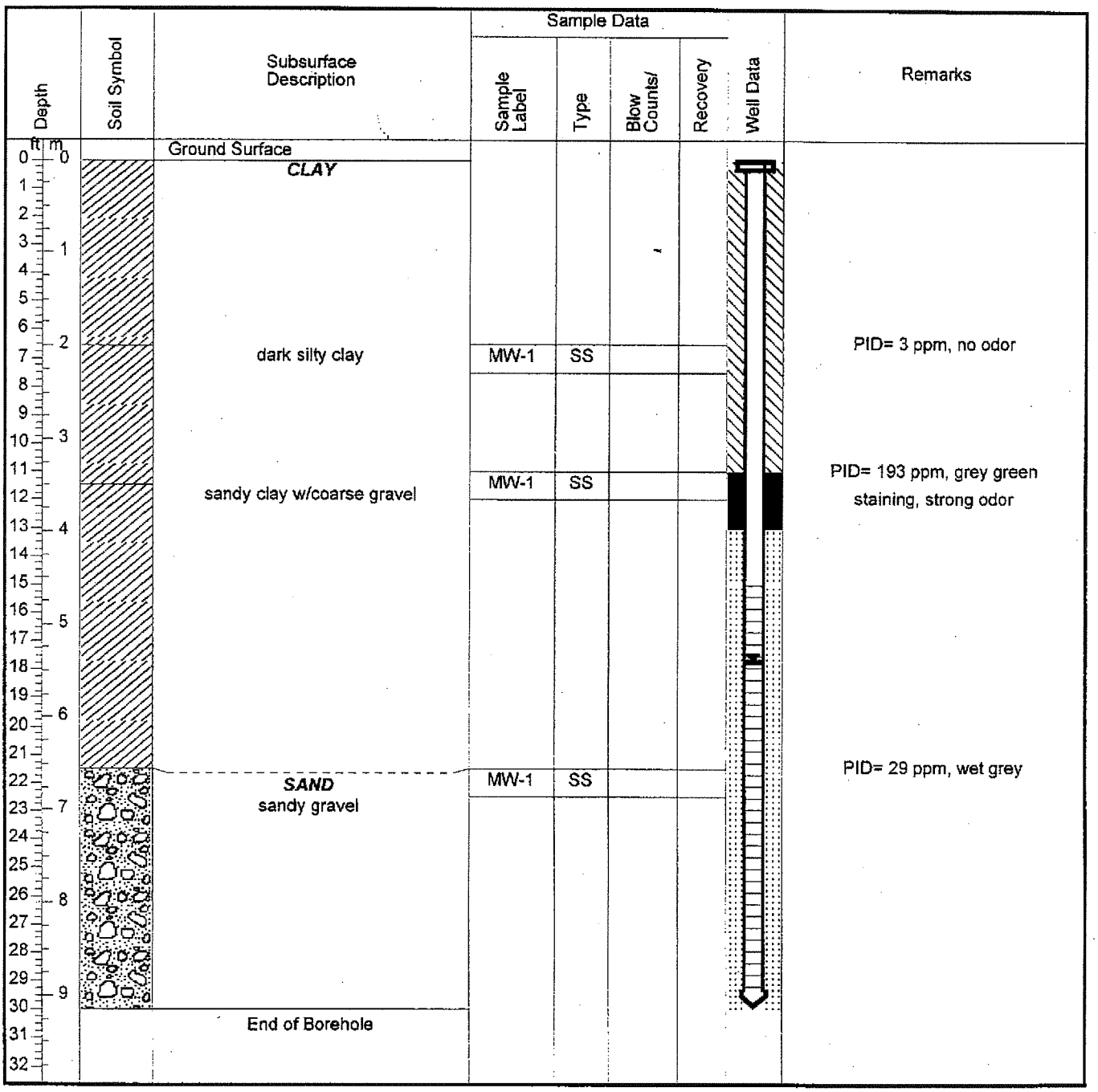
Sheet: 1 of 1

Project Name: Jay Phares Corp.

Client: Ken Phares

Location: 1450 Fruitvale Avenue

Log of Borehole: MW-1



Drill Date 09/25/00

Drill Method: HS

Total Depth: 30'

Depth to Water: ~15'

Reviewed by: PM

Logged by: NW

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Project No: 3581

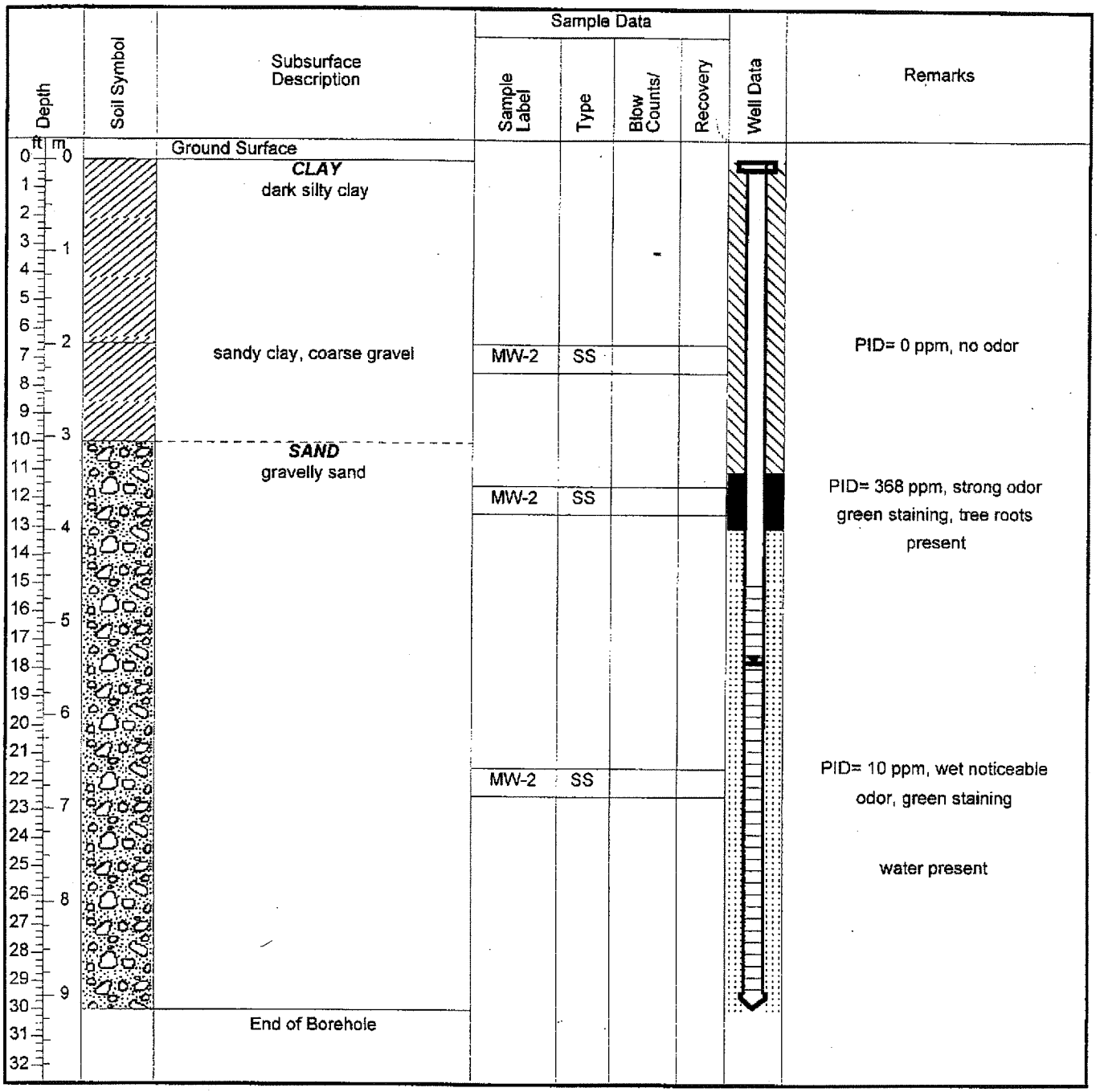
Sheet: 1 of 1

Project Name: Jay Phares Corp.

Client: Ken Phares

Location: 1450 Fruitvale Avenue

Log of Borehole: MW-2



Drill Date 09/25/00

Drill Method: HS

Total Depth: 30'

Depth to Water: ~15'

Reviewed by: PM

Logged by: NW

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Project No: 3581

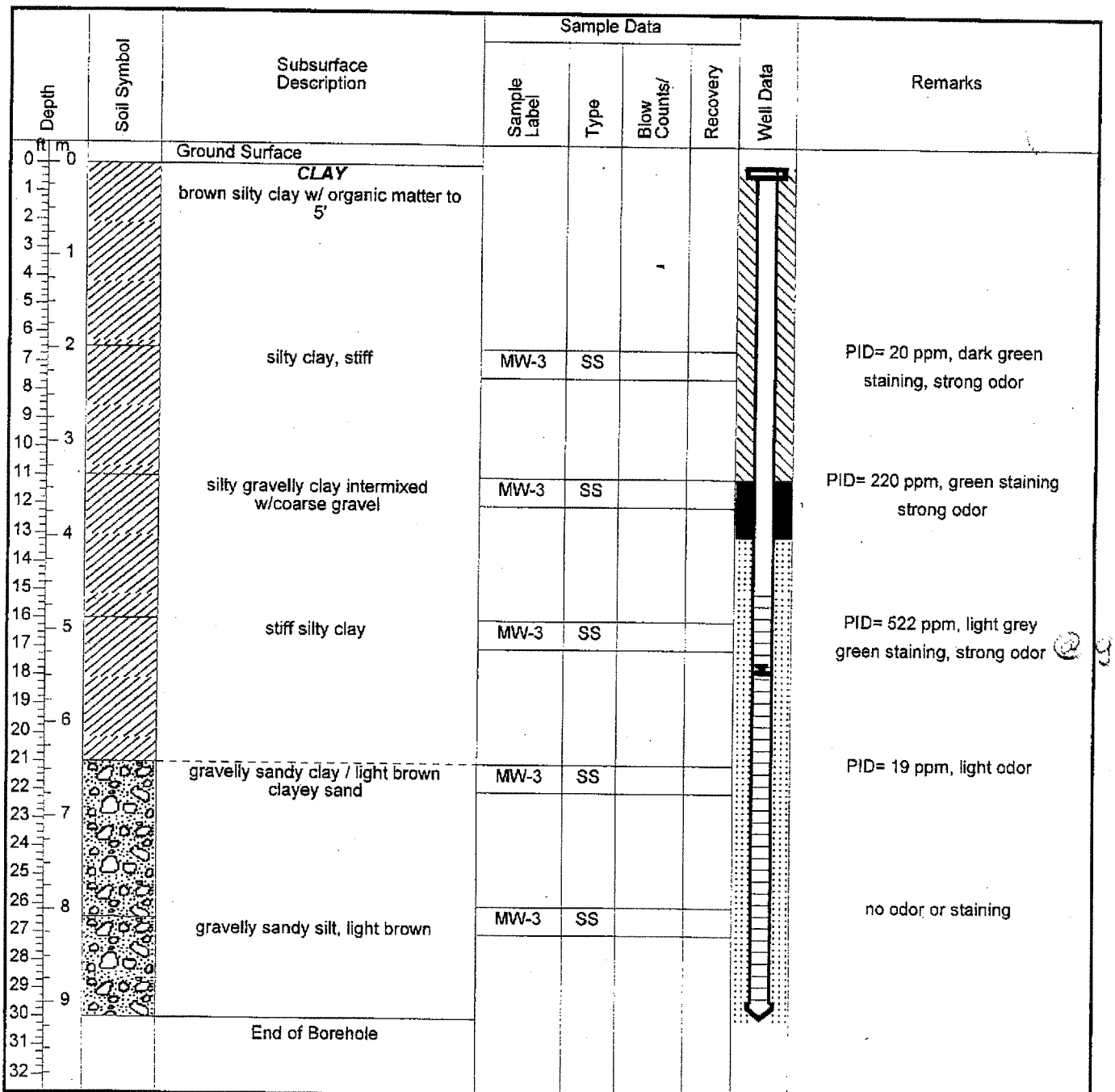
Sheet: 1 of 1

Project Name: Jay Phares Corp.

Client: Ken Phares

Location: 1450 Fruitvale Avenue

Log of Borehole: MW-3



Drill Date 09/25/00

Drill Method: HS

Total Depth: 30'

Depth to Water: ~15'

Reviewed by: PM

Logged by: NW

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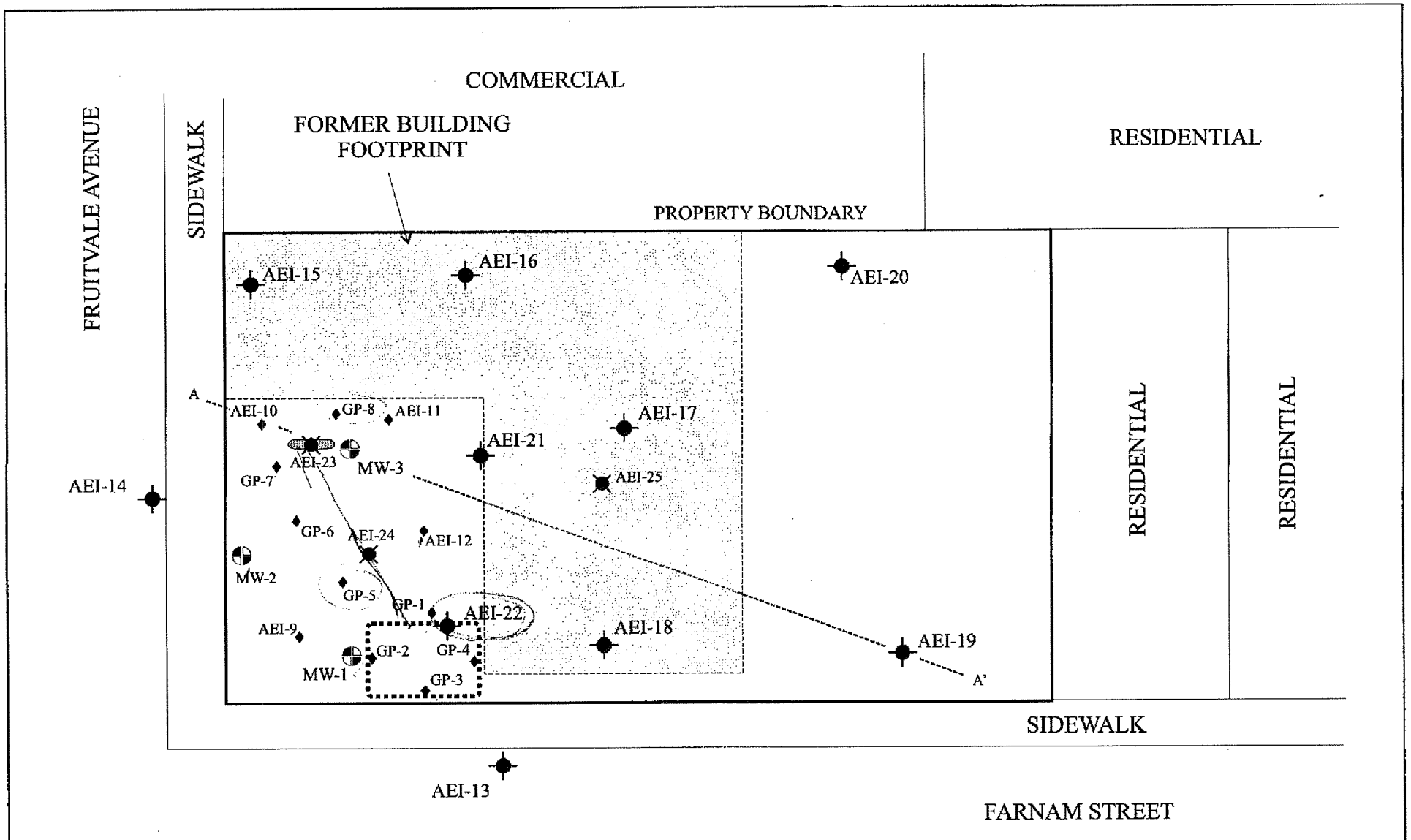
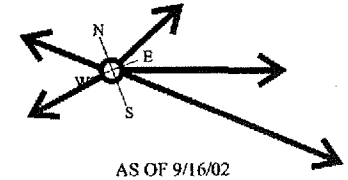


KEY

- Existing 2" Monitoring Wells
- Temporary Borings: 1998-1999
- Temporary Borings: June 2002
- Hand Auger Borings: Sept. 2002

GROUNDWATER FLOW DIRECTION ROSE DIAGRAM (½ in = 1 episode)



AS OF 9/16/02

N

SCALE: 1 in = 30 ft

0' 15' 30'

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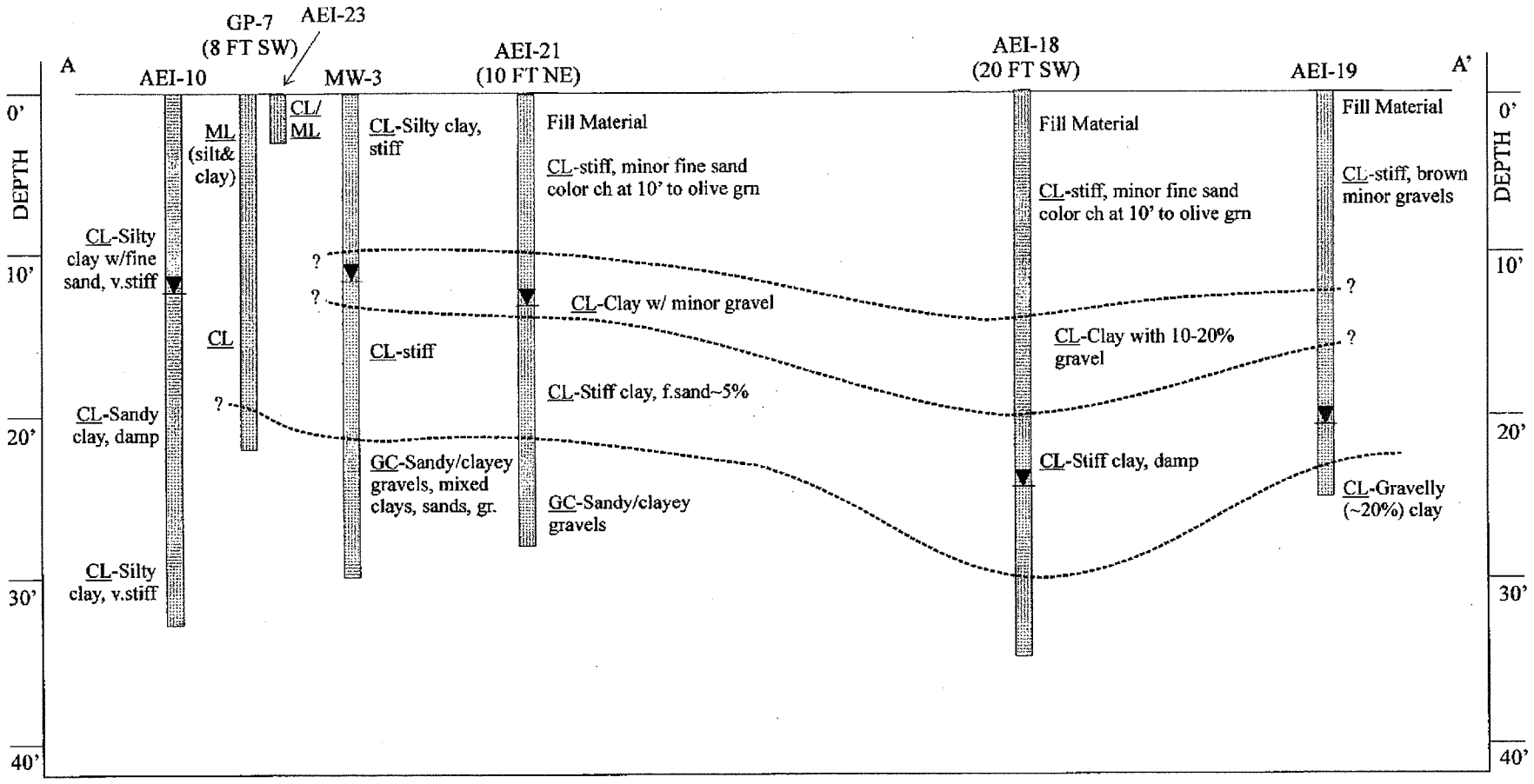
BORING AND WELL LOCATIONS

1450 FRUITVALE AVENUE
OAKLAND, CALIFORNIA

FIGURE 4
AEI PROJECT NO 5624



APPROXIMATE SOIL TYPE BOUNDARY

WATER LEVEL MEASURED IN WELLS OR TEMPORARY BORINGS

VERTICAL SCALE: 1in = ~ 10 ft
HORIZONTAL SCALE: 1 in = ~20 ft

Abbreviations
ML = Silts
GC = Clayey Gravel
CL = Clay, silty, sandy, or gravelly clay

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CROSS SECTION A-A'

1450 FRUITVALE AVENUE
OAKLAND, CALIFORNIA

FIGURE 6
AEI PROJECT NO 10460