Atlantic Richfield Company

Chuck Carmel
Remediation Management Project Manager

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March 12, 2015

RECEIVED
By Alameda County Environmental Health at 12:54 pm, Mar 13, 2015

Re: Conceptual Site Model, Sensitive Receptor Survey and Case Closure Request
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,

Chuck Carmel
Remediation Management Project Manager

Attachment:

CONCEPTUAL SITE MODEL AND CASE CLOSURE REQUEST
Former Richfield Oil Company Station No.402
1450 Fruitvale Avenue, Oakland, California
ACEH Case No. RO0000307

Prepared for

Mr. Charles Carmel
Operations Project Manager
Atlantic Richfield Company
P.O. Box 1257
San Ramon, California 94583

Prepared by

4820 Business Center Drive, Suite 110
Fairfield, CA 94534
(707) 455-7290
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March 12, 2015

Project No. 08-88-602

BROADBENT
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March 12, 2015

Project No. 08-88-602

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

Attn.: Mr. Charles Carmel

Re: Conceptual Site Model, Sensitive Receptor Survey and Case Closure Request, Former Richfield Oil Company Station No.402, 1450 Fruitvale Avenue, Oakland, California; ACEH Case No. RO0000307

Dear Mr. Carmel:

Broadbent & Associates, Inc. (Broadbent) is pleased to submit this *Conceptual Site Model and Case Closure Request* for Former Richfield Oil Company Station No.402 located at 1450 Fruitvale Boulevard, Oakland, California (Site). This document was prepared in order to evaluate this Site for case closure under the *Low Threat Underground Storage Tank Case Closure Policy* (LTCP; CSWRCB, 2012). After completion of the Conceptual Site Model and comparing the current Site conditions to the LTCP, case closure is recommended.

Should you have questions or require additional information, please do not hesitate to contact us at (707) 455-7290.

Sincerely,
BROADBENT & ASSOCIATES, INC.

Alexander J. Martinez
Senior Staff Geologist

PROFESSIONAL GEOLOGIST
KRISTENE TIDWELL
No. 969
CERTIFIED HYDRO GEOLOGIST
STATE OF CALIFORNIA

Kristene Tidwell, P.G., C.Hg.
Senior Geologist

Attachment

cc: Ms. Karel Detterman, PG, Alameda County Environmental Health (Submitted via ACEH ftp site)
Mr. Bill Phua, Fruitvale-Farnum Associates, LLC, 638 Webster St. #300, Oakland, CA 94607
Mr. Hugh K. Phares, III, Attorney at Law, 911 Paru St, Alameda, CA 94501-4033
Electronic copy uploaded to GeoTracker

CONCEPTUAL SITE MODEL AND CASE CLOSURE REQUEST

Former Richfield Company Station No. 402
1450 Fruitvale Avenue, Oakland, California
Fuel Leak Case No. RO0000307

TABLE OF CONTENTS

ATTACHMENTS

CONCEPTUAL SITE MODEL AND CASE CLOSURE REQUEST
Former Richfield Company Station No. 402
1450 Fruitvale Avenue, Oakland, California
Fuel Leak Case No. RO0000307

1.0 INTRODUCTION

On behalf of the Atlantic Richfield Company– (ARC, a BP affiliated company) Broadbent & Associates, Inc. (Broadbent) has prepared this *Conceptual Site Model and Case Closure Request (CSM and CCR)* for the Former Richfield Oil Company (ROC) Station No.402, located at 1450 Fruitvale Avenue, Oakland, California (Site). This CSM and CCR was prepared in order to evaluate the Site's eligibility to be closed under the California State Water Resources Control Board's (CSWRCB) *Low Threat Underground Storage Tank Case Closure Policy* (LTCP; CSWRCB, 2012). This CSM and CCR includes discussions on the Site background and previous environmental activities, regional and Site geology and hydrogeology, and justification for Case Closure.

1.1 Site Setting

The location of Former Atlantic Richfield Station No. 402 is currently a multi-story commercial retail/office building located at the northeast corner of Fruitvale Avenue and Farnam Street in an area of mixed residential and commercial land use. The elevation of the site is approximately 49 feet (ft) above mean sea level (msl) with local topography sloping gently to the south-southwest (United States Geological Survey [USGS]), Oakland East Quadrangle, California). Surrounding land use is primarily single- and multi-family residences with commercial buildings to the north, west, and south; and residential buildings to the east. The Assessor's Parcel Number is 33-2121-22.

The adjacent property to the north is a community center. Across Farnam Street to the south of the Site is an empty lot adjacent to commercial buildings. Across Fruitvale Avenue to the west of the Site are commercial stores and restaurants. To the east of the Site are single- and multi-family residential buildings.

Alameda County Assessors records indicate the Site is located on an approximately 0.27 acre parcel of property. The Site is located in Section 16, Township 2 South, Range 3 West, relative to the Mount Diablo Baseline and Meridian of Northern California, and The Site can be located on the Oakland East, California 7½-minute topographic quadrangle map of the United States Geological Survey (USGS). A Site Location Map is presented as Drawing 1. A Site Map depicting current groundwater elevation and analytical data is presented as Drawing 2.

1.2 Site Background

The Site was reportedly developed and operated as a gas station between 1950 and at least until 1983 by Richfield Oil Company. Four underground storage tanks (USTs) were formerly located at the Site. The fuel dispenser island was located on the northwestern portion of the west 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 UST removal records were not located, available records indicated that USTs were formerly located along Farnam Street, as indicated on Drawing 2 (AEI, 1999). A detailed Site history and summary of previous investigations is included in Appendix A.

1.3 Document Purpose and Organization

The purpose of this document is to summarize and present current Site conditions in the form of a CSM and evaluate these conditions and data gathered for Site closure based on the LTCP. The following section presents justification for case closure based on the CSM. The CSM is presented as Table 1. Table 2 and Table 3 present historical and current groundwater analytical data. Table 4 summarizes historical and current potentiometric groundwater gradient magnitude and direction.

In order to evaluate Site condition against the LTCP, each category in the policy has been individually evaluated using the data presented in the CSM (Table 1). These evaluations are presented in the following section.

2.0 SENSITIVE RECEPTOR SURVEY

A Sensitive Receptor Survey (SRS) was performed by Boradbent to identify the presence of water wells within a 2,000 foot radius of the Site. Based on the information provided by the local water purveyor Alameda County Environmental Health (ACEH), seven wells (three industrial and four irrigation wells) were identified within the 2,000 foot radius.

An underground utility survey was not conducted as part of this SRS. Due to the depth to water historically observed at the Site, which has ranged from approximately 11 ft below ground surface (bgs) to 16 ft-bgs, it is not anticipated that underground conduits and/or trenches may act as preferential contaminant migration pathways.

Appendix D provides a table of the identified wells in the SRS and an aerial map of the site and surrounding wells within and around the 2,000 foot radius. The closest well to the Site is an irrigation well approximately 800 feet to the southeast. Three industrial wells are located approximately 1,750 feet southwest of the Site. Two irrigation wells are located outside of the 2,000 foot radius to the southeast and northeast, respectively. One irrigation well is locatged approximately 2,700 feet to the southeast of the Site; however, the SRS did not yield a physical address. The coordinates provided for the irrigation well give an approximate area where it may be located to the southwest, owned by the Trust for Public Land-SF.

2.1 Water Supply Well Search

Broadbent requested a well search through ACEH databases and conducted a telephone interview with the local water purveyor in the area to determine the locations and quantities of wells located within a 2,000 foot radius. ACPWA provided an extensive list of well completion reports including domestic, irrigation, municipal, industrial, cathodic and monitoring wells.

Numerous monitoring wells were identified during the well search; however, these wells were not considered sensitive receptors and have been disregarded in this report. There were seven wells (four irrigation and three industrial) identified in and around the 2,000 foot radius.

2.2 Surface Water Bodies

Surface water bodies were located using satellite images available on Google Maps and USGS topographic maps. The nearest potential surface water bodies appear to be two creeks, Peralta and Sausal. Sausal is located approximately 800 feet northwest of the Site in the general upgradient

direction and Peralta Creek is located southeast of the Site in a general downgradient direction approximately 2,350 feet from the Site. Although Peralta Creek is located in the general downgradient direction, it is located outside of the 2,000 foot radius and not considered a potential receptor.

2.3 Ecological Receptors

The Site is located within the City of Oakland commercial and residential corridor approximately ½ mile east of Interstate 880. Accordingly, areas surrounding the Site are developed, paved, and/or occupied by structures/buildings with limited areas of landscaping. There are no apparent riparian habitats within a 2,000-foot radius of the Site.

Burrowing mammals typically burrow at depths up to 6.5 feet bgs and may have the potential to encounter localized contaminated media; however, based on the current use of the property and surrounding area, the presence of burrowing animals is expected to be minimal to non-existent. No protected species of flora or fauna are known or expected to be present in the developed or disturbed areas within the City of Livermore. Areas not paved or occupied by site structures in the immediate area are typically landscaped or remain undeveloped and cleared of vegetation.

Broadbent performed a search for protected species within the Oakland East quadrangle on the Department of Fish and Game, California Natural Diversity Database Website (http://www.dfg.ca.gov/biogeodata/cnddb/mapsanddata.asp). The database search results were generated using the Quad Viewer application on the Web site and are presented as Appendix D. The results of the database search indicate 5 different species that have special status; however, impacts associated with Former Service Station #402 are not expected to affect protected species.

2.4 Schools and Hospitals

Six schools were identified within the 2,000 foot search radisu of the Site:

- Lazear Elementary School, located approximately 2,100 feet to the southwest of the Site
- Arise High School, located approximately 895 feet to the southof the Site
- St. Elizabeth High School, located approximately 800 feet to the southeast of the Site
- Urban Promise Academy, located approximately 1,355 feet to the northeast of the Site
- Think College Now, located approximately 1,570 feet to the west of the Site
- Ascened Elementary School, located approximately 2,000 feet to the south of the Site

There are no apparent hospitals or medical centers identified within the 2,000 foot search radius. The medical clinic La Clinica De La Raza is located approximately 1,080 feet to the west-southwest of the Site. The locations of the schools within the search radius are provided in Appendix D.

2.5 Extent in Soil Vapor

A soil vapor investigation was conducted during the 4Q13 to delineate the extent of residual petroleum hydrocarbons at the Site. Analytical results of the sampling event indicate that SG-1B (within the vicinity of MW-4) had a measured GRO concentration of 46,000 µg/m³, which is below the Environmental Screening Level (ESL) of 2,500,000 µg/m³. Analysis for the other soil gas implants at the Site for GRO, BTEX, MTBE and Naphthalene all were not detected above their respective reporting limit.

2.6 Sensitive Receptor Survey Conclusions

The following conclusions are based ion the data available at the time that this survey was performed and Broadbent's general knowledge of existing conditions at the Site.

- Groundwater contamination at the Site has previously been identified at concentrations above and below water quality objectives.
- One domestic and one irrigation well have been identified within the 2000 foot search radius.
- Five schools were identified within the search radius.

The potential impact to industrial and irrigation wells within the search radius is possible; however, the three irrigation wells on 29th Avenue(Appendix D) are located in a general upgradient direction from the Site, while the one irrigation well on 34th Avenue (Appendix D) is located in a general downgradient direction. Previous groundwater sampling results from well MW-7, downgradient of the UST basin, showed petroleum impacts were migrating in the general downgradient direction. However, the soil vapor analytical results from soil vapor probes SG-3A/B indicate that no residual hydrocarbon concentrations present in the downgradient location. Soil samples collected at the same location also yielded no concentrations or low concentrations below the LTCP requirements as well as ESLs.

The six schools identified during this survey are not expected to be impacted from Site activities. Think College Now, Lazear Elementary School, Urban Prmise Academy and Arise High School and Ascend Elementary School are located in the upgradient direction from the Site. St. Elizabeth High School is located downgradient of the Site and appears to be at minimal risk.

Data collected from the SRS and Site groundwater observations indicates a minimal threat to receptors. No additional assessments are needed for offsite receptors.

3.0 JUSTIFICATION FOR SITE CLOSURE – LOW THREAT UST CLOSURE POLICY

As indicated in Section 1.3 above, the Site was evaluated for Closure based on comparing data presented in the CSM (Table 1) against the LTCP. Closure Criteria in the Low Threat UST Closure Policy are organized into the following categories:

- General Criteria
- Media Specific Criteria-Groundwater
- Media Specific Criteria – Petroleum Vapor Intrusion to Indoor Air
- Media Specific Criteria – Direct Contact and Outdoor Air Exposure
- Additional Criteria

The following sections present the details of the evaluation.

3.1 General Criteria

The general criteria relate to the Site use, presence of free product, sources, and completeness of the Site understanding. As evidenced in the data presented in the CSM, a sufficiently good understanding of Site conditions, on- and offsite receptors, and Site history has been established. These general criteria and a discussion as to how the Site is consistent with these criteria are presented below.

The unauthorized release is located within the service area of a public water system
The Site is located within the East Bay Municipal Utilities District Service Area.

The unauthorized release consists only of petroleum
The release at the Site is believed to have occurred in the area of the original UST as well as the two excavation pits near former well location MW-1 in front of the current building. This has been the location with the highest concentrations of petroleum hydrocarbons. Current evidence of maximum petroleum concentrations are noted in MW-4, downgradient of UST and excavation pits (Tables 2 & 3). In addition, there is no knowledge or eveidence that other activities occurred at the Site that may have caused non-petroleum releases.

The unauthorized release has been stopped
The UST where the release occurred has been removed along with the downgradient excavation pits, thereby removing the leak sources (Table 1).

Free product has been removed to the extent possible
No free product has been measured at the Site since environmental investigations began in 1998.

A conceptual site model (CSM) that assesses the nature, extent, and mobility of the release has been developed
A conceptual site model has been prepared for this Site and is summarized in Table 1.

Secondary source has been removed to the extent practical
Soils around the former UST complex and waste oil tank were excavated. Approximately 87 cubic yards of petroleum impacted soil was removed and disposed of offsite in 1999.

Soil and groundwater have been tested for MTBE and results reported in accordance with Health and Safety Code 25296.15

Soil samples collected during investigative work at the Site were analyzed for MTBE. MTBE was detected in one soil sample AEI-10-15 at a concentration of 0.071 mg/kg. Groundwater samples collected from Site monitoring wells have been routinely analyzed for MTBE. MTBE has been detected in recently installed wells MW-5 and MW-6. Historical MTBE analytical data are included in Table 2 and Table 3.

Nuisance as defined by the Water Code section 13050 does not exist at this site
A nuisance as defined by the Water Code does not exist at this Site.

3.2 Media-Specific Criteria – Groundwater

The LTCP lists four scenarios for groundwater plumes. The petroleum plume size indicated in Drawing 5 for benzene is less than 250 feet in length. MTBE was detected in the most recent groundwater moniotoring event (3Q14) in well MW-6. Drawing 4 indicates a plume for concentrations of GRO at the Site. The plume is above ESLs in well MW-4, slightly above ESL's in downgradient well MW-7. The concentration of GRO in well MW-7 is an order of magnitude less than the concentration in well MW-4, unlikely to extend past 250 feet per LTCP criteria. Hydrocarbon concentrations for benzene and MTBE do not exceed maximum levels listed within the LTCP. Free product has not been observed at the Site. A Sensitive Receptor Survey indicated that no domestic or water supply wells were located within a ½ mile radius of the Site as presented in the CSM (Table 1). The closest surface water is Sausal Creek, located

approximately 800 feet to the northwest of the Site (Table 1).

3.3 Media Specific Criteria – Petroleum Vapor Intrusion to Indoor Air

The Site is not an active service station and it does not apply to the active fueling station exemption in the LTCP, which considers that petroleum vapors from onsite fueling activities are a far greater risk than those associated with exposure to vapors from historic petroleum releases. During well installation activities in 2013, three nested soil vapor probes were also installed at the Site. Soil vapor analytical results indicated that GRO, benzene, toluene, ethylbenzene, xylenes, MTBE, and naphthalene were not detected in any of the six soil vapor samples collected, with the exception of one concentration of GRO in probe SG-1B, which was below the Tier 1 ESLs. Results of the soil vapor analytical event can be found in Appendix E.

3.4 Media Specific Criteria – Direct Contact and Outdoor Air Exposure

For the direct contact and outdoor air exposure, all soil data was considered. During well installation activities in 2013, soil samples were collected for each new well location. Based on the soil samples collected, benzene and ethylbenzene were present in soil sample MW-4 at 7.5 feet bgs at a concentration of 0.0095 and 0.26 mg/kg, respectively. Naphthalene was analyzed during this investigation and detected at the same soil interval for MW-4 with a concentration of 0.21 mg/kg. No soil samples above 6.5 feet bgs were collected, however due to the lack hydrocarbon concentrations slightly below 5 feet bgs, and the length of time since USTs or dispensers were present onsite, it is very unlikely petroleum compounds are present between 0 and 5 feet bgs. Concentrations for benzene, ethylbenzene and naphthalene were all detected below the LTCP.

Table A: Representative Maximum Concentrations of Benzene and Ethylbenzene in Soil Samples – 0-5 feet bgs and 5 to 10 feet bgs

Sample Identification and Depth	Sample Date	Benzene (mg/kg)	Ethylbezene (mg/kg)	Naphthalene (mg/kg)
MW-4 @ 7.5’	11/19/2013	0.0095	0.26	0.21
MW-4 @ 19.5’	11/19/2013	<0.10	0.66	<0.25
MW-7 @ 15.5’	11/19/2013	<0.00099	0.0053	<0.0020
LTCP Maximum* - 0-5/5-10		8.2/12	89/134	45/45

*Under a commercial/industrial exposure setting
mg/kg = miligrams per kilogram

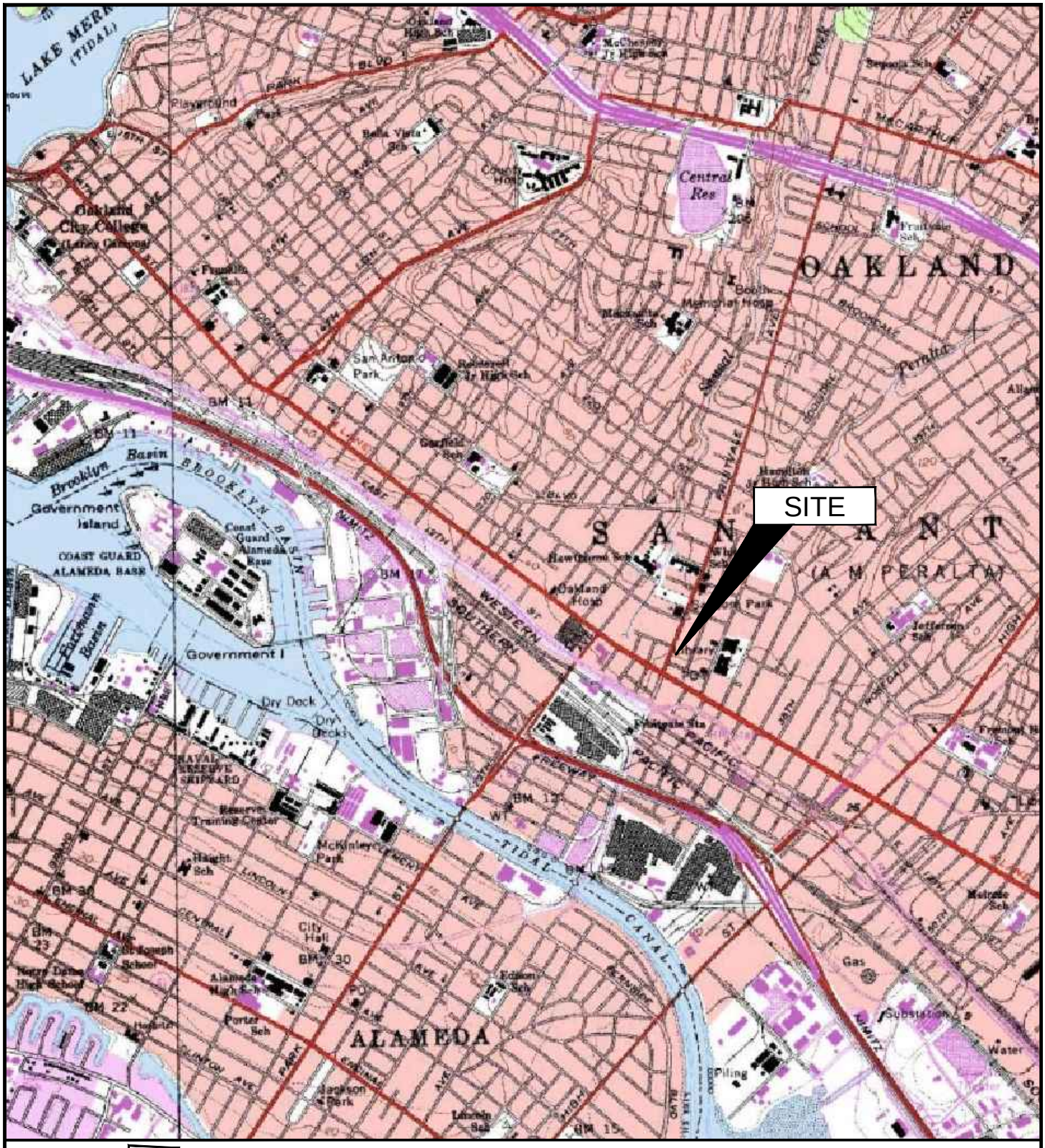
3.5 Recommendation for Case Closure

As presented above and in the attached CSM table (Table 1), this Site appears to meet all applicable criteria for case closure under the Low Threat Closure Policy. Concentrations of BTEX have been detected at the site in soil vapor samples, while benzene and ethylbenzene have been detected in groundwater samples, and are both below the LTCP criteria in 2013. In addition, MTBE concentrations were only detected in MW-6, which was also below the LTCP and other fuel oxygenates are not present for any of the well locations. Primarily GRO have been detected in groundwater at the site with concentration from the most recent sampling event conducted on September 17, 2014 for two well locations, above the ESL of 100 µg/L. Adequate Site characterization , evaluation of receptors, historical descriptions, and technical analysis have been performed at the Site and in this document to support a recommendation for case closure. The Site does pose a reasonable risk to the environmental or public

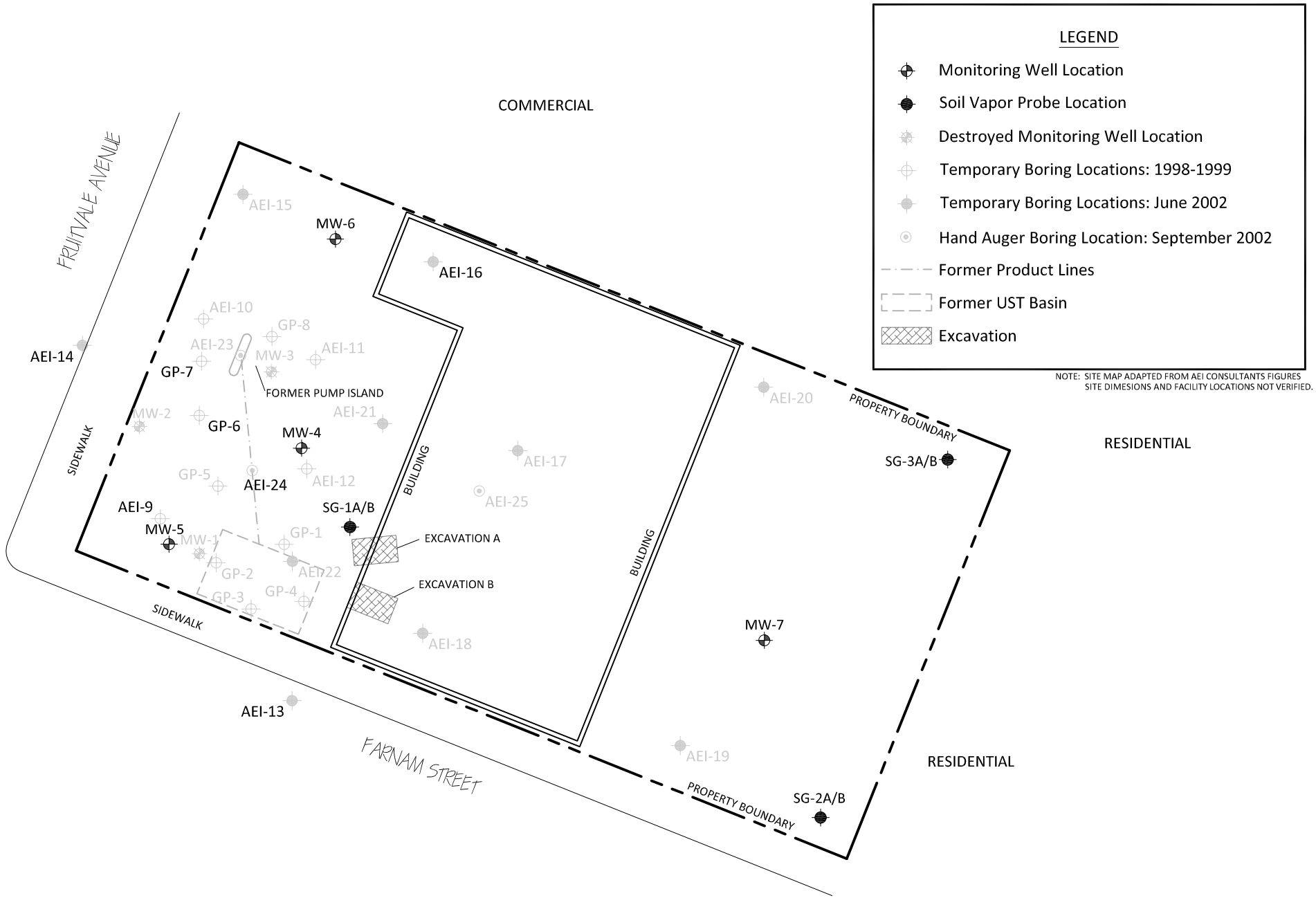
health. We hereby recommend that a determination of No Further Action be made for this Site. Upon concurrence of this recommendation from the ACEH, closure activities including well decommissioning should be carried.

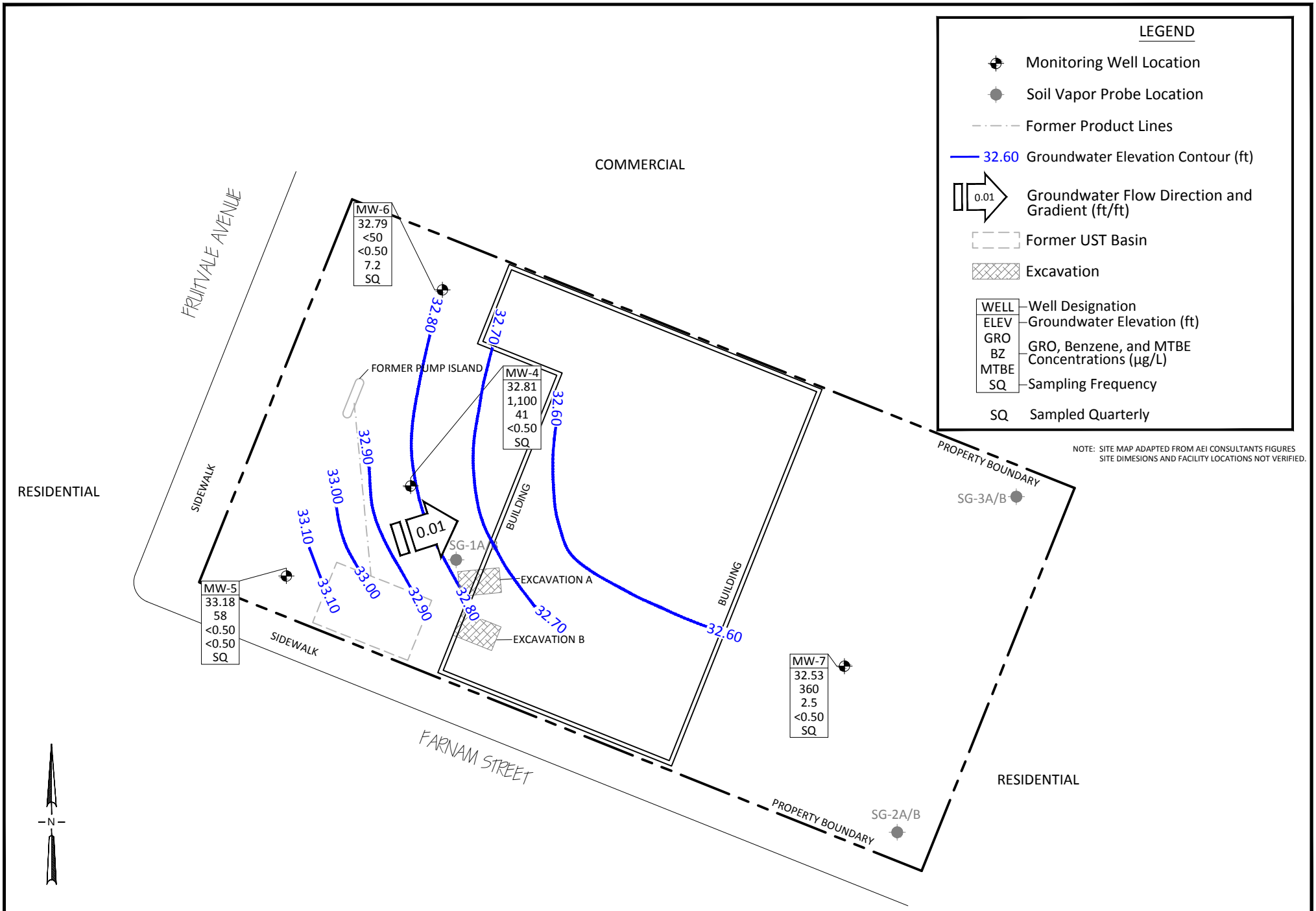
4.0 REFERENCES

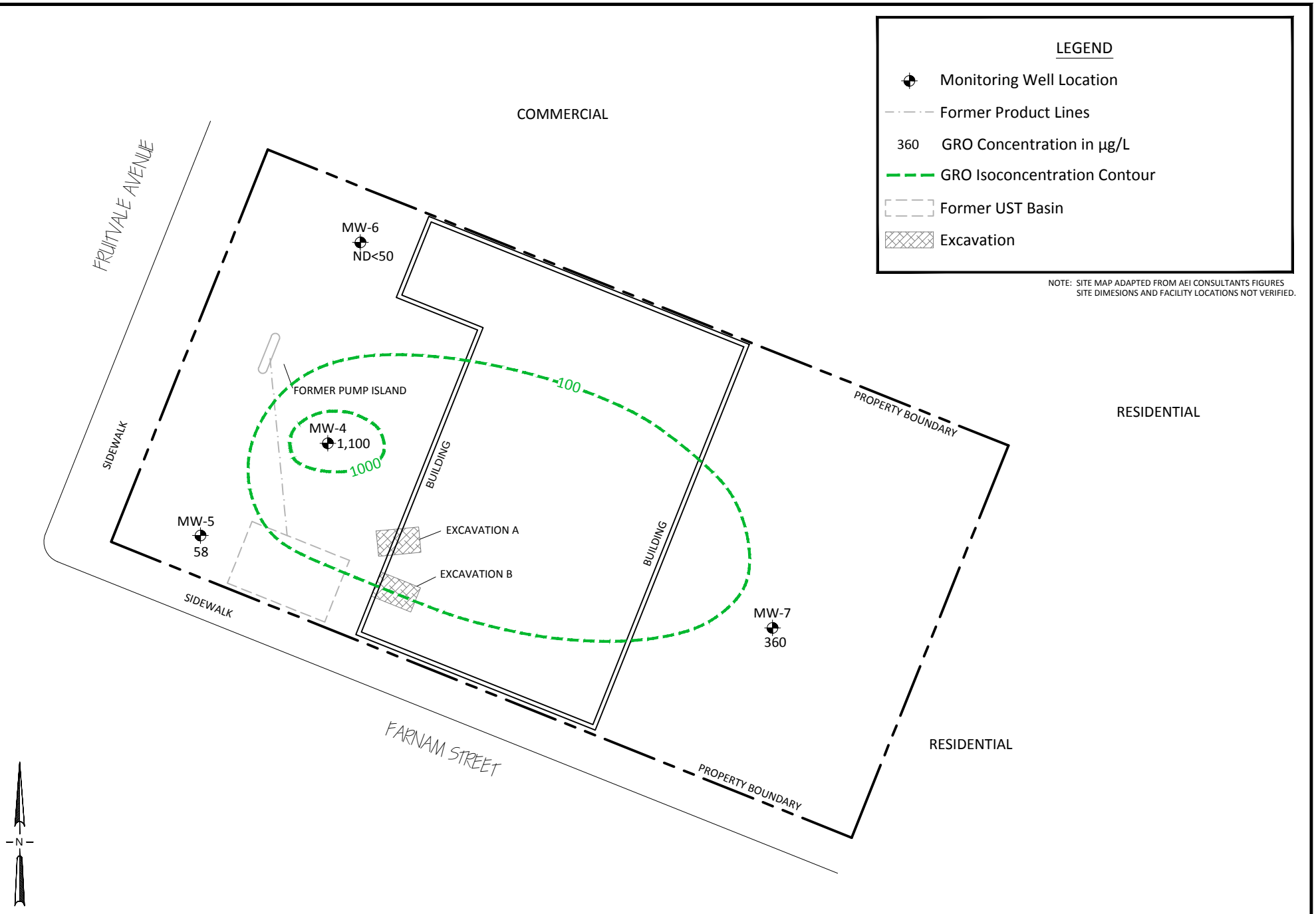
State Water Resources Control Board, 2012. Low-Threat Underground Storage Tank Case Closure Policy, August 17.



BROADBENT 4820 Business Center Drive, Suite 110 Fairfield, CA 94534 Project No.: 08-88-602 Date: 01/26/2015	ARCO Former Station № 402 1450 Fruitvale Avenue Oakland, California	Site Location Map	Drawing 1


LEGEND
Monitoring Well Location
Soil Vapor Probe Location
Destroyed Monitoring Well Location
Temporary Boring Locations: 1998-1999
Temporary Boring Locations: June 2002
Hand Auger Boring Location: September 2002
Former Product Lines
Former UST Basin
Excavation
NOTE: SITE MAP ADAPTED FROM AEI CONSULTANTS FIGURES
SITE DIMESIONS AND FACILITY LOCATIONS NOT VERIFIED.
COMMERCIAL
FRUITVALE AVENUE
SIDEWALK
AEI-14
AEI-15
MW-6
AEI-16
AEI-10
GP-8
AEI-23
MW-3
AEI-11
GP-7
FORMER PUMP ISLAND
MW-2
GP-6
AEI-21
MW-4
BUILDING
AEI-17
GP-5
AEI-24
AEI-12
AEI-25
AEI-9
SG-1A/B
MW-5
MW-1
GP-1
EXCAVATION A
GP-2
AEI-22
EXCAVATION B
GP-3
GP-4
SIDEWALK
AEI-18
MW-7
AEI-13
FARNAM STREET
AEI-19
PROPERTY BOUNDARY
SG-2A/B
AEI-20
PROPERTY BOUNDARY
RESIDENTIAL
SG-3A/B
RESIDENTIAL
N
0
30
60
SCALE (ft)
BROADBENT
875 Cotting Lane, Suite G
Vacaville, California 95688
Project No.: 08-88-602 Date: 01/20/2014
ARCO Former Station № 402
1450 Fruitvale Avenue
Oakland, California
Site Map with Former and
Current Site Features
Drawing
2


LEGEND
Monitoring Well Location
Soil Vapor Probe Location
Former Product Lines
32.60 Groundwater Elevation Contour (ft)
0.01 Groundwater Flow Direction and Gradient (ft/ft)
Former UST Basin
Excavation
WELL Well Designation
ELEV Groundwater Elevation (ft)
GRO
BZ
MTBE GRO, Benzene, and MTBE Concentrations (µg/L)
SQ Sampling Frequency
SQ Sampled Quarterly
NOTE: SITE MAP ADAPTED FROM AEI CONSULTANTS FIGURES
SITE DIMESIONS AND FACILITY LOCATIONS NOT VERIFIED.
COMMERCIAL
RESIDENTIAL
RESIDENTIAL
FRUITVALE AVENUE
FARNAM STREET
SIDEWALK
SIDEWALK
PROPERTY BOUNDARY
PROPERTY BOUNDARY
BUILDING
BUILDING
FORMER PUMP ISLAND
EXCAVATION A
EXCAVATION B
MW-6
32.79
<50
<0.50
7.2
SQ
MW-4
32.81
1,100
41
<0.50
SQ
MW-5
33.18
58
<0.50
<0.50
SQ
MW-7
32.53
360
2.5
<0.50
SQ
SG-1A/B
SG-2A/B
SG-3A/B
32.80
32.70
32.60
32.90
33.00
33.10
0.01
N
0
30
60
SCALE (ft)
BROADBENT
4820 Business Center Drive, Suite 110
Fairfield, CA 94534
Project No.: 08-88-602 Date: 10/27/2014
ARCO Former Station № 402
1450 Fruitvale Avenue
Oakland, California
Groundwater Elevation Contour and Analytical Summary Map, September 17, 2014
Drawing
3


LEGEND
Monitoring Well Location
Former Product Lines
360 GRO Concentration in µg/L
GRO Isoconcentration Contour
Former UST Basin
Excavation
NOTE: SITE MAP ADAPTED FROM AEI CONSULTANTS FIGURES
SITE DIMESIONS AND FACILITY LOCATIONS NOT VERIFIED.
COMMERCIAL
FRUITVALE AVENUE
MW-6
ND<50
FORMER PUMP ISLAND
MW-4
1,100
100
1000
SIDEWALK
BUILDING
MW-5
58
EXCAVATION A
EXCAVATION B
BUILDING
PROPERTY BOUNDARY
RESIDENTIAL
MW-7
360
SIDEWALK
FARNAM STREET
PROPERTY BOUNDARY
RESIDENTIAL
N
0
30
60
SCALE (ft)
BROADBENT
875 Cotting Lane, Suite G
Vacaville, California 95688
Project No.: 08-88-602 Date: 01/23/2015
ARCO Former Station № 402
1450 Fruitvale Avenue
Oakland, California
GRO Isoconcentration Contour Map
– September 17, 2014
Drawing
4

BROADBENT
875 Cotting Lane, Suite G
Vacaville, California 95688
Project No.: 08-88-602 Date: 01/23/2015

ARCO Former Station № 402
1450 Fruitvale Avenue
Oakland, California

Benzene Isoconcentration Contour Map – September 17, 2014

Drawing
5

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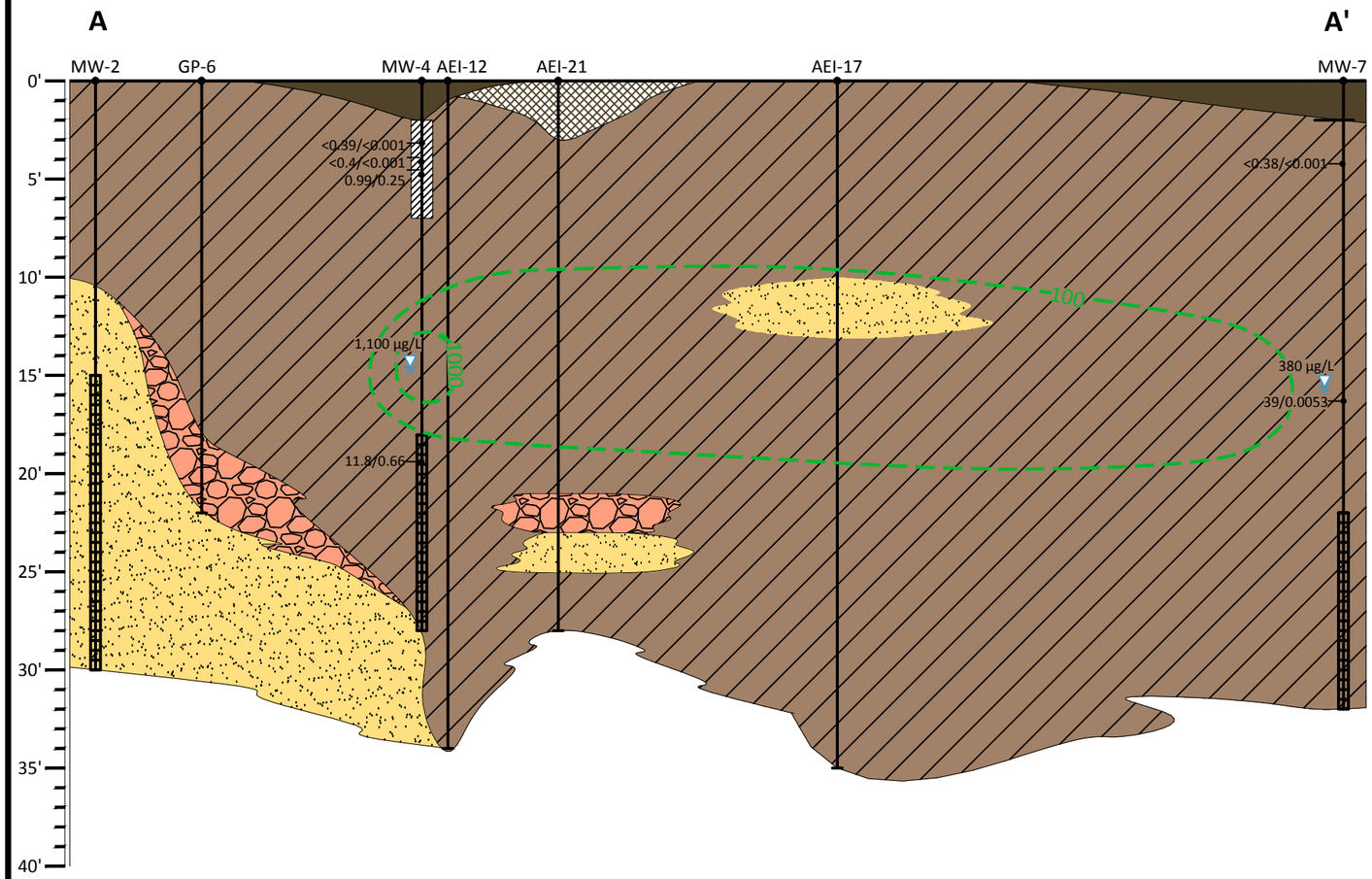
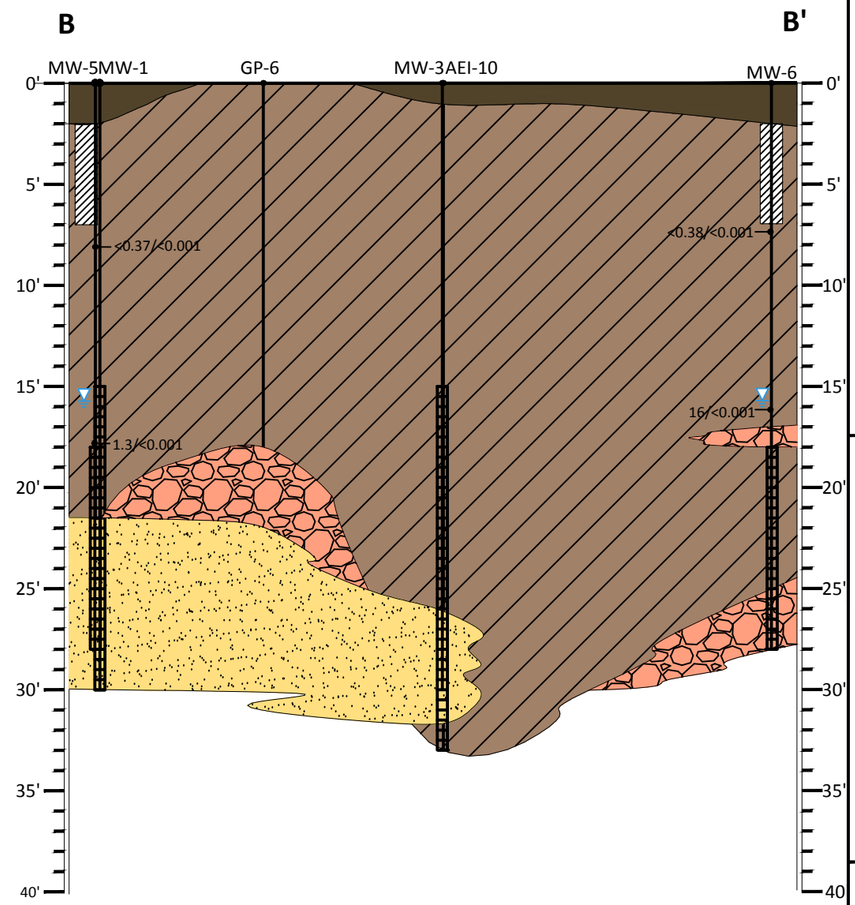
4820 Business Center Drive, Suite 110
Fairfield, CA 94534
Project No.: 08-88-602 Date: 01/26/2015

ARCO Former Station № 402
1450 Fruitvale Avenue
Oakland, California

Cross Section Location Map

Drawing
6





Concrete

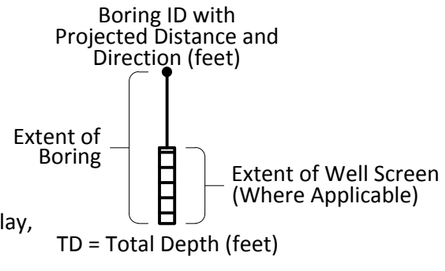
Fill

Unknown - Air Knife

Sands

Clay, Sandy/Gravelly Clay, Silty Clay

Gravels



380 µg/L — Static Groundwater Elevation and GRO Concentration (µg/L) (November 19, 2013)

<0.38/<0.001 — GRO/Ethylbenzene Concentration(mg/kg) November 18, 2013

GRO Isoconcentration Contour

0 15 30

HORIZONTAL SCALE (ft)
VERTICAL EXAGGERATION 2:1

Drawing 7

Geologic Cross Sections A - A' & B-B'

ARCO Former Station № 402
1450 Fruitvale Avenue
Oakland, California

BROADBENT
2020 Business Center Drive, Suite 110
Fairfield, CA 94534
Project No.: 08-88-602 Date: 01/26/2015

TABLE 1

CONCEPTUAL SITE MODEL
Former Atlantic Richfield Company Station 402
1450 Fruitvale Avenue
Oakland, California

CSM Element	CSM Sub-Element	Description	Data Gap	How to Address
Geology and Hydrogeology	Regional	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.	None	NA
	Site	The Site elevation is approximately 63 ft msl. The water table fluctuates seasonally and over time. Historically, depth-to-water measurements have ranged from approximately 5 to 11 feet below ground surface (bgs). During Third Quarter 2014, the groundwater depths ranged from 14.44(MW-5) and 16.10 (MW-6) Groundwater flow direction during the Third Quarter 2014 monitoring event was to the east-northeast at a gradient of approximately 0.01 ft/ft. The site is underlain with silts and clays to approximately 16 feet bgs which transitions into clayey gravels and gravels to approximately 32 feet bgs.	None	NA
Surface Water Bodies		Sausal Creek (Info) is located approximately 800 feet to the northwest of the Site. The creek abruptly ends at International Boulevard after draining from the Oakland Hills. Peralta Creek is located approximately 2,350 feet to the southeast of the Site. Like Sausal Creek, Peralta Creek ends at Foothill Blvd.	None	NA

TABLE 1

CONCEPTUAL SITE MODEL
Former Atlantic Richfield Company Station 402
1450 Fruitvale Avenue
Oakland, California

CSM Element	CSM Sub-Element	Description	Data Gap	How to Address
Nearby Wells		In 2015, a Sensitive Receptor Survey (SRS) was carried out to identify the presence of water wells with a 2,000 foot radius of the Site. Based on the review, seven wells were identified within the 2,000 foot radius from the Site: three industrial wells and four irrigation wells. Three industrial wells are located within 1,750 feet southwest of the Site. One irrigation well is located approximately 800 feet southeast of the Site. Two irrigation wells are located outside of the 2,000 foot radius to the southeast and northeast of the site respectively. One irrigation well is located approximately 2,700 feet from the site to the southeast of the Site; however, the SRS did not yield physical address. The coordinates for this irrigation well give an approximate area where it is located.	Potential	Contact well owners to verify use of water wells
Constituents of Concern	Light-Non Aqueous Phase Liquids (LNAPL)	LNAPL has not been observed at this Site	None	NA
	Gasoline Range Organics (GRO)	GRO has been detected in 3 of the 4 monitoring wells at the Site (MW- 4, MW-5, and MW-7). GRO decreases by an order of magnitude in the downgradient well from 1,100 µg/L in MW-4 to 360 µg/L in well MW-7. Drawing 4 presents isoconcentration contours for the most recent groundwater monitoring and sampling event (3Q14). Additionally, during the soil investigation and monitoring well installation in the 4Q13, GRO was detected in soil sample collected from each monitoring well location. MW-7 yielded the highest residual concentration at 39 mg/kg at 15.5 ft bgs while MW-4 had the lowest concentration of 0.99 mg/kg at 7.5 ft bgs. Soil Analytical results for the 4Q13 investigation can be found in Appendix E.	None	NA
	Benzene	Benzene has been detected in 2 of the 4 monitoring wells (MW- 4 and MW-7) during the 3Q14 sampling event. Benzene decreases by an order of magnitude in the downgradient well from 41 µg/L in MW-4 to 2.5 µg/L in well MW-7. Drawing 5 presents isoconcentration contours of benzene in groundwater during the most recent groundwater monitoring event (3Q14). Benzene impacts to groundwater are limited in extent and largely confined to source area.	None	NA
	MTBE	Methyl tert butyl ether (MTBE) has been detected in newly installed wells MW-5 and MW-6. The highest historic concentration of MTBE was reported in well MW-6 in 2Q 2014 at a concentration of 14 µg/L. MTBE impacts to groundwater are limited and are largely confined to the source area. Overall the presence of MTBE in well MW-6 appears to be decreasing and no longer detected in well MW-5.	None	NA

TABLE 1

CONCEPTUAL SITE MODEL
Former Atlantic Richfield Company Station 402
1450 Fruitvale Avenue
Oakland, California

CSM Element	CSM Sub-Element	Description	Data Gap	How to Address
Potential Sources	Offsite	No offsite sources have been identified.	None	NA
	Onsite	The main sources of contamination onsite were from the former fuel dispensers and product lines. It is unclear what date the tanks were removed. In July 1998 a Phase I/II Environmental Site Assessment (ESA) was performed by Glenfos, Inc. The report indicated inconclusively that the Underground Storage Tanks (USTs) may still be present at the Site. Eight soil borings advanced to depths between 15 and 30 ft during the ESA found concentrations of TPH(g) of 190 mg/kg in the soil samples and 20,000 μg/l in the groundwater samples. Highest concentrations of contaminants were located in the former locations of fuel dispensers and product lines. In May 1999, a subsurface investigation was performed by All Environmental, Inc. (AEI). AEI excavated at three locations: two excavations at a suspected former location of a waste oil tank and one excavation at the suspected location of the USTs. No USTs were found during these activities. Six soil samples and one groundwater sample were taken from the excavations and analyzed by McCampbell Analytical, Inc. Contaminants were found in the soil samples taken from the former UST location: 11mg/kg of TPH(g) and 0.059 mg/kg of Toluene. Approximately 88 cubic yards of soil were removed. Overall site data indicates the residual petroleum impacts are limited in extent and largely found in the former source area.	None	NA
Migration Pathways	Potential Conduits	Maps of underground utilities including electrical, storm drain, and unidentified utilities are included in Appendix C. The storm drain manhole entry way is exposed at the surface and is approximately 1-2 ft bgs. Electrical conduits are around the perimeter of the Site on the Fruitvale Avenue side. Since historical and current depth to groundwater measurements are typically between 10-16 ft bgs, the potential for any deeper utilities to act as a preferential pathway for contaminant migration is unlikely. The mapped underground utility locate maps indicate no potential pathways in the downgradient direction. The groundwater gradient for the Site is to the southeast. Two neighboring residences adjacent to the Site are located in the downgradient direction on 33rd Street. Based on the mapped underground utility maps provided by NorCal Geophysical (NorCal), a storm drain is running North to South leading out to Farnam Avenue. No other utilities were mapped in the downgradient direction and the soil gas data for soil vapor probes SG-3A/B all measured no detection for GRO and benzene during a soil vapor survey event during the 4Q13; this indicates that a preferential pathway for contaminant migration is unlikely.	None	NA

TABLE 1

CONCEPTUAL SITE MODEL
Former Atlantic Richfield Company Station 402
1450 Fruitvale Avenue
Oakland, California

CSM Element	CSM Sub-Element	Description	Data Gap	How to Address
Potential Receptors	Onsite	No onsite water supply wells or surface water exists. The only potential onsite receptor would be onsite workers exposed to gasoline vapors. However, current concentrations of contaminants in soil and groundwater indicate that vapor intrusion is not a risk to onsite workers and tenants because no petroleum in soil samples above 7.5 ft bgs has been reported. Additionally, Broadbent & Associates, Inc. (Broadbent) conducted a soil vapor sampling event during the 4Q13. The analysis indicated that soil vapor probe SG-1B, (downgradient of the former UST basin) sampled from 5-5.5 feet bgs yielded concentration measurements of GRO at 46,000 µg/m³. The concentration of GRO was below the ESL of 2,500,000 µg/m³. No other contaminants of concern were detected during the investigation.	None	NA
	Offsite	As discussed above, the residences southeast of the Site are located downgradient of the Site and are considered a potential offsite receptor. Although the concentrations of GRO and Benzene in groundwater were recently detected in well MW-7, the concentrations appear to quickly alternate and the soil vapor survey results for SG-2A/B & SG-3A/B indicate no GRO and benzene. These two soil vapor probe locations are also further downgradient from MW-7.	None	NA
Nature and Extent of Environmental Impacts	Extent in Soil	A soil investigation was conducted during the 4Q13 (November) prior to the installation of the soil gas and monitoring wells at the Site. Analytical results of the sampling event indicate that five of the 11 soil samples detected GRO concentrations; the location of well MW-4 also detected concentrations of BTEX at the 7.5 ft-bgs interval. Concentrations for GRO in all well locations and BTEX for the specified MW-4 interval were all below the Low Threat Closure Policy (LTCP) criteria (SWRCB, 2012).	None	NA
	Extent in Shallow Groundwater	The groundwater monitoring network at the Site include four wells (MW-4 through MW-7); upgradient well MW-5; downgradient wells MW-4, MW-6 and MW-7. Isoconcentration Maps 4 and 5 from the 3Q14 groundwater monitoring and sampling event show the extent of GRO and Benzene respectively. Based on these drawings and continued sampling of the well network, the extent of the residual petroleum compounds is predominantly limited around the former dispenser island and excavations pits. The GRO plume however does extend downgradient near well MW-7. Additionally, LNAPL is not present at the Site.	None	NA

TABLE 1

CONCEPTUAL SITE MODEL
Former Atlantic Richfield Company Station 402
1450 Fruitvale Avenue
Oakland, California

CSM Element	CSM Sub-Element	Description	Data Gap	How to Address
Nature and Extent of Environmental Impacts	Extent in Deeper Groundwater	Soil Borings GP-1 through GP-8 were advance to depths between 12-30 ft bgs, borings AEI-9 through AEI-22 were advanced to depths between 26-35 ft bgs and destroyed monitoring wells MW-1 through MW-3 were advance to 30 ft bgs. Based on the results of these boring logs, petroleum compounds in groundwater appear to be vertically defined between 12 to 20 ft bgs. Residual petroleum hydrocarbons do not appear to have penetrated the deeper groundwater zone. Based on the information from soil boring log GP-6, the logger noted that groundwater was encountered at 20 ft bgs and later rose to 9 ft bgs, an indication that groundwater is consistent in shallow depths. Although groundwater was first encountered at certain depths in other soil borings greater than 20 ft bgs per AEI Consultants (2000-2002), current groundwater conditions show that water levels do not exceed greater than 16.50 ft bgs during the drier sampling events.	None	NA

es:

bgs = below ground surface
GRO = Gasoline Range Organics
DRO = Diesel Range Organics
MTBE = Methyl tert-butyl Ether
BTEX = benzene, toluene, ethylbenzene, xylenes
µg/L = micrograms per liter
mg/Kg = milligrams per kilogram
ESLs = Tier 1 Environmental Screening Level s
µg/m³ = micrograms per cubic meter
LTCP = Low Threat Closure Policy
SWRCB = State Water Regional Control Board

Table 2. Summary of Groundwater Monitoring Data: Water Elevations and Laboratory Analyses

Former BP Station #402, 1450 Fruitvale Avenue, Oakland, California

Well ID and Date Monitored	P/NP	TOC Elevation (feet)	Depth to Water (feet)	Water Level Elevation (feet)	Concentrations in µg/L						DO (mg/L)	Footnote
					GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE		
MW-4												
12/2/2013	P	48.18	14.06	34.12	810	38	0.71	57	15	<0.50	1.60	a
3/18/2014	P		10.72	37.46	600	28	<0.50	20	4.8	<0.50	1.64	
6/26/2014	P		13.54	34.64	1,300	51	0.76	32	1.7	<0.50	1.58	
9/17/2014	**P**		**15.37**	**32.81**	**1,100**	**41**	**<0.50**	**6.6**	**<1.0**	**<0.50**	**0.57**	
MW-5												
12/2/2013	P	47.62	13.67	33.95	<50	<0.50	<0.50	<0.50	<1.0	0.69	4.70	a
3/18/2014	P		10.91	36.71	<50	<0.50	<0.50	<0.50	<1.0	<0.50	3.03	
6/26/2014	P		12.52	35.10	<50	<0.50	<0.50	<0.50	<1.0	<0.50	0.76	
9/17/2014	**P**		**14.44**	**33.18**	**58**	**<0.50**	**<0.50**	**<0.50**	**<1.0**	**<0.50**	**0.66**	
MW-6												
12/2/2013	P	48.89	15.07	33.82	<50	<0.50	<0.50	<0.50	<1.0	10	1.25	a
3/18/2014	P		11.72	37.17	<50	<0.50	<0.50	<0.50	<1.0	14	1.94	
6/26/2014	P		14.20	34.69	<50	<0.50	<0.50	<0.50	<1.0	13	0.47	
9/17/2014	**P**		**16.10**	**32.79**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<1.0**	**7.2**	**0.71**	
MW-7												
12/2/2013	P	48.28	15.35	32.93	96	<0.50	<0.50	1.5	<1.0	<0.50	5.35	a
3/18/2014	P		11.25	37.03	190	2.3	<0.50	2.2	<1.0	<0.50	2.63	
6/26/2014	P		13.44	34.84	530	5.0	0.63	1.9	<1.0	<0.50	1.14	
9/17/2014	**P**		**15.75**	**32.53**	**360**	**2.5**	**<0.50**	**<0.50**	**<1.0**	**<0.50**	**0.63**	

Symbols & Abbreviations:
-- = Not analyzed/applicable/sampled/measured
< = Not detected at or above specified laboratory reporting limit
TOC = Top of casing measured in ft
NS = Well not surveyed
DO = Dissolved oxygen
GRO = Gasoline range organics
TPHg = Total petroleum hydrocarbons as gasoline
µg/L = Micrograms per liter
mg/L = Milligrams per liter
MTBE = Methyl tert-butyl ether
NP = Not purged before sampling
P = Purged before sampling

Footnotes:
a = Well surveyed 12/17/2013

Table 3. Summary of Fuel Additives Analytical Data

Former BP Station #402, 1450 Fruitvale Avenue, Oakland, California

Well ID and Date Monitored	Concentrations in µg/L								Footnote
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
MW-4									
12/2/2013	--	<10	<0.50	1.7	<0.50	<0.50	--	--	
3/18/2014	<150	<10	<0.50	1.8	<0.50	<0.50	<0.50	<0.50	
6/26/2014	<150	<10	<0.50	1.9	<0.50	<0.50	<0.50	<0.50	
9/17/2014	**<150**	**<10**	**<0.50**	**2.3**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	
MW-5									
12/2/2013	--	<10	0.69	<0.50	<0.50	<0.50	--	--	
3/18/2014	<150	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
6/26/2014	<150	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
9/17/2014	**<150**	**<10**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	
MW-6									
12/2/2013	--	<10	10	<0.50	<0.50	<0.50	--	--	
3/18/2014	<150	<10	14	<0.50	<0.50	<0.50	<0.50	<0.50	
6/26/2014	<150	<10	13	<0.50	<0.50	<0.50	<0.50	<0.50	
9/17/2014	**<150**	**<10**	**7.2**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	
MW-7									
12/2/2013	--	<10	<0.50	<0.50	<0.50	<0.50	--	--	
3/18/2014	<150	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
6/26/2014	<150	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
9/17/2014	**<150**	**<10**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	

Symbols & Abbreviations:
TBA = Tert-butyl alcohol
MTBE = Methyl tert-butyl ether
DIPE = Disopropyl ether
ETBE = Ethyl tert-butyl ether
TAME = Tert-amyl methyl ether
1,2-DCA = 1,2-Dichloroethane
EDB = Ethylene dibromide
ug/L = Micrograms per liter
< = Below given laboratory detection limit
-- = Not measured or analyzed

Table 4. Summary of Groundwater Gradient - Direction and Magnitude

Former BP Station #402, 1450 Fruitvale Avenue, Oakland, California

Date Measured	Approximate Gradient Direction	Approximate Gradient Magnitude (ft/ft)
12/2/2013	East-Southeast	0.01
3/18/2014	Southeast	0.01
6/26/2014	South	0.01
9/17/2014	**East-Northeast**	**0.01**

APPENDIX A

Summary of Previous Investigations

Atlantic Richfield Station No. 402 opened in 1950 and operated until an unknown time between 1983 when it was sold to Curtis L. Thomas. The Site continued to be used as a gas station for an uncertain amount of time. The Site was then used for numerous business purposes, including an auto supply store, a garage, and a tire store, through 1999.

In July 1998 a Phase I/II Environmental Site Assessment (ESA) was performed by Glenfos, Inc. The report indicated inconclusively that the Underground Storage Tanks (USTs) may still be present at the Site. Eight soil borings advanced to depths between 15 and 30 ft during the ESA found concentrations of TPH(g) of 190 mg/kg in the soil samples and 20,000 μg/L in the groundwater samples. Highest concentrations of contaminants were located in the former locations of fuel dispensers and product lines.

In May 1999, a subsurface investigation was performed by All Environmental, Inc. (AEI). AEI excavated at three locations: two excavations at a suspected former location of a waste oil tank and one excavation at the suspected location of the USTs. No USTs were found during these activities. Six soil samples and one groundwater sample were taken from the excavations and analyzed by McCampbell Analytical, Inc. Contaminants were found in the soil samples taken from the former UST location: 11mg/kg of TPH(g) and 0.059 mg/kg of Toluene. Elevated concentrations of lead were found in all samples, up to 80mg/kg in the soil samples and 20 μg/L in the groundwater sample. These results are included in Appendix A.

In August 1999 AEI advanced four soil borings were advanced to depths of 34 ft and collected several soil samples and one groundwater sample. These samples were analyzed for TPH(g), BTEX, and MTBE by McCambell Analytical, Inc. One soil sample contained 21 mg/kg of TPH(g) at a depth of 15 ft. No concentrations of BTEX or MTBE were detected in the soil samples. The groundwater sample contained 690 μg/L of TPH(g), 72 μg/L of Benzene, and 3.8 μg/l of MTBE.

In September 2000 AEI installed three additional monitoring wells (MW-1 through MW-3) and obtained two soil samples from each boring. Groundwater from these wells was sampled in October 2000. Groundwater levels were also taken and they suggest a gradient of 0.116 toward the southeast. All samples were analyzed by McCampbell Analytical, Inc. for TPH(g), MTBE, and BTEX. Soil sample analytical results are shown below for samples which contained hydrocarbons:

Sample ID	TPH(g) mg/kg	MTBE mg/kg	Benzene mg/kg	Toluene mg/kg	Ethyl-Benzene mg/kg	Xylenes mg/kg
MW-1, 11.5 ft	15	ND	ND	0.31	ND	0.011
MW-2, 11 ft	73.0	ND	ND	0.044	0.0080	0.040
MW-3, 16 FT	360.0	ND	0.42	2.1	6.5	11.0

Groundwater sample analytical results are shown below:

Sample ID	TPH(g) μg/L	MTBE μg/L	Benzene μg/L	Toluene μg/L	Ethyl-Benzene μg/L	Xylenes μg/L
MW-1	4,500	ND	560	14	53	62
MW-2	4,600	ND	380	3.8	95	33
MW-3	12,000	ND	570	32	680	1,200

The highest concentration of TPH(g) in either soil or groundwater is found at MW-3, which is located at the former location of the pump island dispensers. MW-1 through MW-3 was located nearest to the former USTs, and samples taken from this well contain the lowest concentration of TPH(g).

In April 2002 AEI submitted a Quarterly Monitoring Report. A gradient of 0.032 ft/ft toward the northwest was observed during the quarter, which is the opposite direction of the historically measured gradient. TPH(g) was observed again in all of the wells, with the highest concentration in MW-3 (29,000 μg/L) and lowest in MW-1 (7,100 μg/L). Benzene concentration was highest in MW-3 (2,100 μg/L) and lowest in MW-1 (2,100 μg/L). Toluene concentration was highest in MW-3 (57 μg/L) and lowest in MW-2 (11 μg/L). Ethyl-benzene concentration was highest in MW-3 (2,500 μg/L) and lowest in MW-2 (220 μg/L). Xylenes were highest in MW-3 (1,700 μg/L) and lowest in MW-2 (39 μg/L).

In July 2002 AEI submitted a Groundwater Investigation Report which describes the results of another soil and water sampling event. TPH(g) and BTEX analytical results were within the ranges found during the previous sampling events. MTBE was found during this sampling event. The highest concentration was found in well MW-2 at 23 μg/L and boring AEI-15 at 14 μg/L. Other parameters were within the same ranges as the sampling event in April of 2002. AEI-15 is located at the northwestern corner of the Site and MW-2 is located on the western edge of the Site. The groundwater gradient during this event was 0.04 to the southwest.

In October 2002 AEI submitted a Site Summary and Risk Evaluation Report determining that the plume is relatively well-contained due to the subsurface geology. AEI claimed that the Site's clayey soils result in both slow natural attenuation and high containment, as well as the observed unstable groundwater gradient. Citing the age of the plume (>20 years) and the low risk of adverse environmental or health effects, AEI requested a consideration for Site closure from Alameda County Environmental Health. This request was denied.

In March 2005 AEI submitted a work plan to construct five additional monitoring wells (MW-4 through MW-7) in order to better delineate the extents of the contaminant plume. ACEH conditionally approved in June 2006, and they required one additional well to be constructed. In July 2006, AEI requested a deadline extension to October 3, 2006 to construct the wells and submit all required reporting. After this, there are no obtainable public records detailing the completed work or subsequent sampling data until 2009.

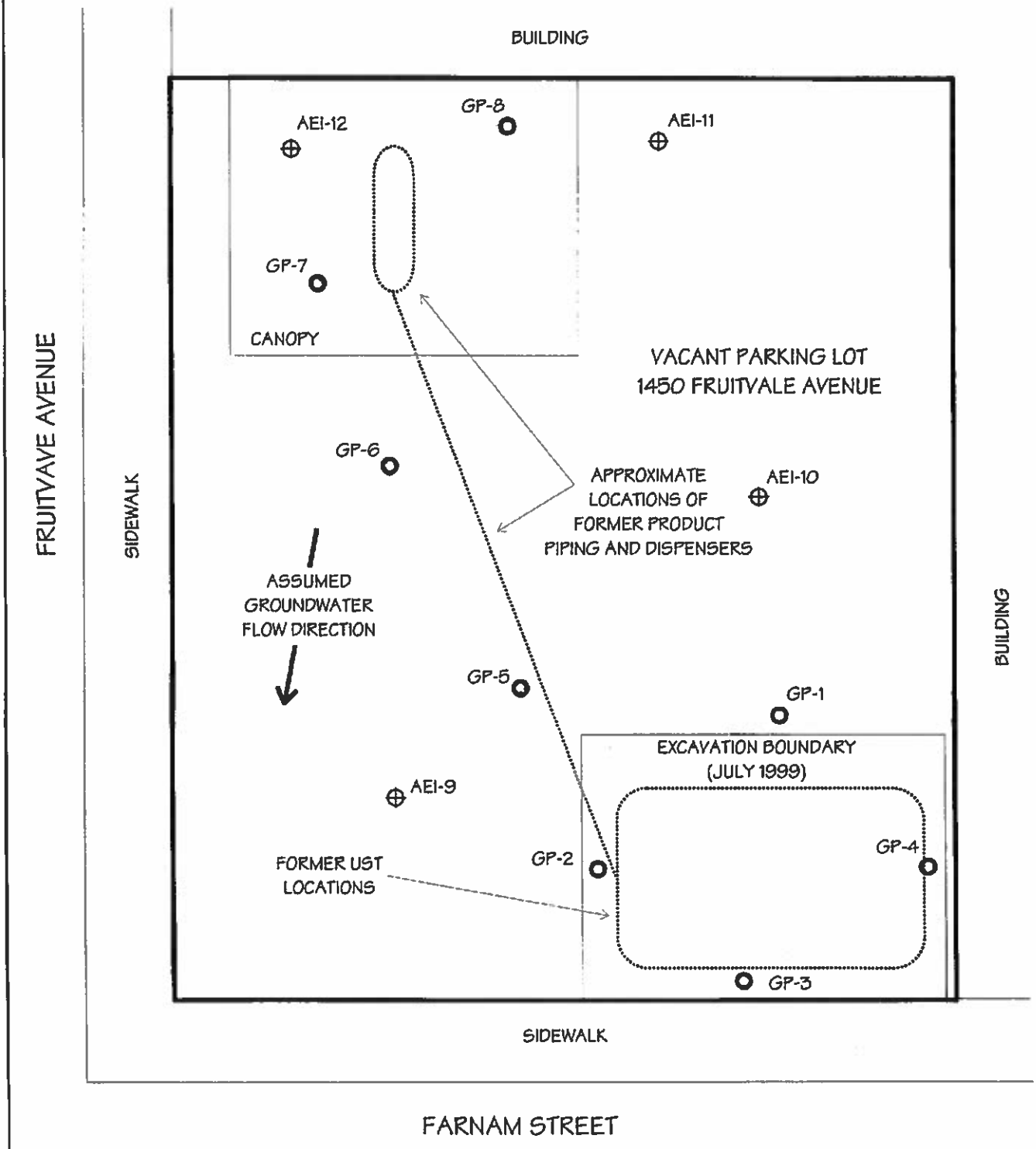
In January 2009 Broadbent and Associates, Inc. (BAI) submitted a Fourth Quarter Quarterly Status Report (QSR) stating that there was no environmental work completed at the Site and summarizing recent correspondence with ACEH and the other Responsible Parties (RPs). Attempts were made to involve the other RPs in the cleanup efforts with little success until an access agreement was reached during the fourth quarter of 2011.

During the first quarter of 2012, BAI determined that the monitoring wells previously installed at the Site are no longer present nor accessible. It appears that they were destroyed without permits, guidance, or oversight from the Alameda County Public Works Agency. BAI then submitted a work plan to install four new groundwater monitoring wells during June 2012, which was then retracted and resubmitted during October 2012 in order to include a soil gas vapor intrusion assessment in the scope of work. A revised work plan was submitted during May 2013 and implemented during November 2013.

Three sampling events have taken place since the new well installations. The highest levels of petroleum hydrocarbons were noted in MW-4, which is located in the center of the Site between the former pump island and UST locations. Generally, decreasing petroleum hydrocarbon concentrations were noted in each well with the exception of MW-4. Petroleum impacts are understood to be small and limited primarily to the former source area, near MW-4.

APPENDIX B

Historic Site Data



KEY

⊕ BORING LOCATIONS PERFORMED BY AEI AUGUST 24, 1999

O APPROXIMATE LOCATIONS OF SAMPLING PERFORMED BY *GLENFOS*; JULY, 1998

SCALE: 1" = 10'

N

AEI CONSULTANTS

901 MORAGA ROAD, SUITE C, LAFAYETTE, CA

SOIL BORING LOCATIONS

1450 FRUITVALE AVENUE
OAKLAND, CALIFORNIA

FIGURE 2

Table 1:
Soil Sample Analytical Results

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	7/9/98	10	-	<0.005	0.022	0.015	<0.01	-	
GP-2 10'	Glenfos	7/9/98	1.5	-	0.017	<0.005	<0.005	<0.01	-	
GP-2 15'	Glenfos	7/9/98	27	-	0.017	0.056	0.052	0.51	-	
GP-2 30'	Glenfos	7/9/98	2.5	-	<0.005	<0.005	<0.005	<0.01	-	
GP-3 10'	Glenfos	7/9/98	95	-	**0.59**	0.42	1.1	1.5	7.3	
GP-3 15'	Glenfos	7/9/98	2.5	-	0.055	0.018	0.055	0.26	-	
GP-3 20'	Glenfos	7/9/98	1.6	-	0.02	<0.005	0.02	0.032	-	
GP-3 25'	Glenfos	7/9/98	<1	-	<0.005	<0.005	<0.005	<0.01	-	
GP-4 10'	Glenfos	7/9/98	2.5	-	0.017	<0.005	0.003	0.021	4.1	
GP-5 10'	Glenfos	7/9/98	6.5	-	<0.005	0.022	0.018	0.041	-	
GP-5 15'	Glenfos	7/9/98	19	-	0.077	0.016	0.43	0.49	-	
GP-5 20'	Glenfos	7/9/98	<1	-	<0.005	<0.005	<0.005	<0.01	-	
GP-6 5'	Glenfos	7/9/98	<1	-	<0.005	<0.005	<0.005	<0.01	-	
GP-6 10'	Glenfos	7/9/98	7.7	-	0.008	0.015	0.012	0.047	6.2	
GP-6 15'	Glenfos	7/9/98	**190**	-	**0.34**	0.53	2.3	4.7	-	
GP-6 20'	Glenfos	7/9/98	28	-	0.083	0.081	0.052	0.19	-	
GP-7 10'	Glenfos	7/9/98	86	-	<0.005	0.088	0.09	0.5	-	
GP-7 15'	Glenfos	7/9/98	2.7	-	0.008	0.012	<0.005	0.031	-	
GP-8 10'	Glenfos	7/9/98	24	-	0.022	0.061	0.071	0.45	-	
GP-8 15'	Glenfos	7/9/98	5.8	-	0.021	0.014	0.022	0.06	-	
GP-8 20'	Glenfos	8/23/99	<1	-	<0.005	<0.005	<0.005	<0.01	-	
AEI-9 10'	AEI	8/23/99	<1	<0.05	<0.005	<0.005	<0.005	<0.005	-	
AEI-9 20'	AEI	8/23/99	<1	<0.05	<0.005	<0.005	<0.005	<0.005	-	- St HC odor
AEI-10 10'	AEI	8/23/99	77	<0.05	<0.005	<0.005	0.078	<0.005	-	- Mod HC odor
AEI-10 15'	AEI	8/23/99	69	0.071	**0.1**	0.21	0.23	<0.005	-	- Mld HC odor
AEI-11 10'	AEI	8/23/99	<1	<0.05	<0.005	<0.005	<0.005	<0.005	-	
AEI-11 15'	AEI	8/23/99	**210**	<0.40	<0.020	1.1	1.2	2.4	-	St. HC odor
AEI-12 10'	AEI	8/23/99	24	<0.05	<0.005	0.12	<0.005	<0.005	-	
AEI-12 15'	AEI	8/23/99	**120**	<0.40	<0.020	<0.020	1.6	1.6	-	- Mod HC odor
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 2:
Groundwater Sample Analytical Results

Sample ID	onsulta	Sample Date	TPH-g µg/L	MTBE µg/L	Benzene µg/L	Toluene µg/L	Ethyl-Benzene µg/L	Xylenes µg/L	Lead µg/L
GP 1	Glenfos	7/9/98	170	-	0.53	<0.5	1.2	2.0	-
GP 4	Glenfos	7/9/98	210	-	<0.5	<0.5	0.58	<1	11
GP 5	Glenfos	7/9/98	17,000	-	42	24	820	110	-
GP 8	Glenfos	7/9/98	20,000	<10	1,000	19	420	290	9.5
AEI-9W	AEI	8/23/99	690	3.8	72	0.79	29	24	-
MDL			50	5.0	0.5	0.5		1.5	2.5

MDL = Method Detection Limit

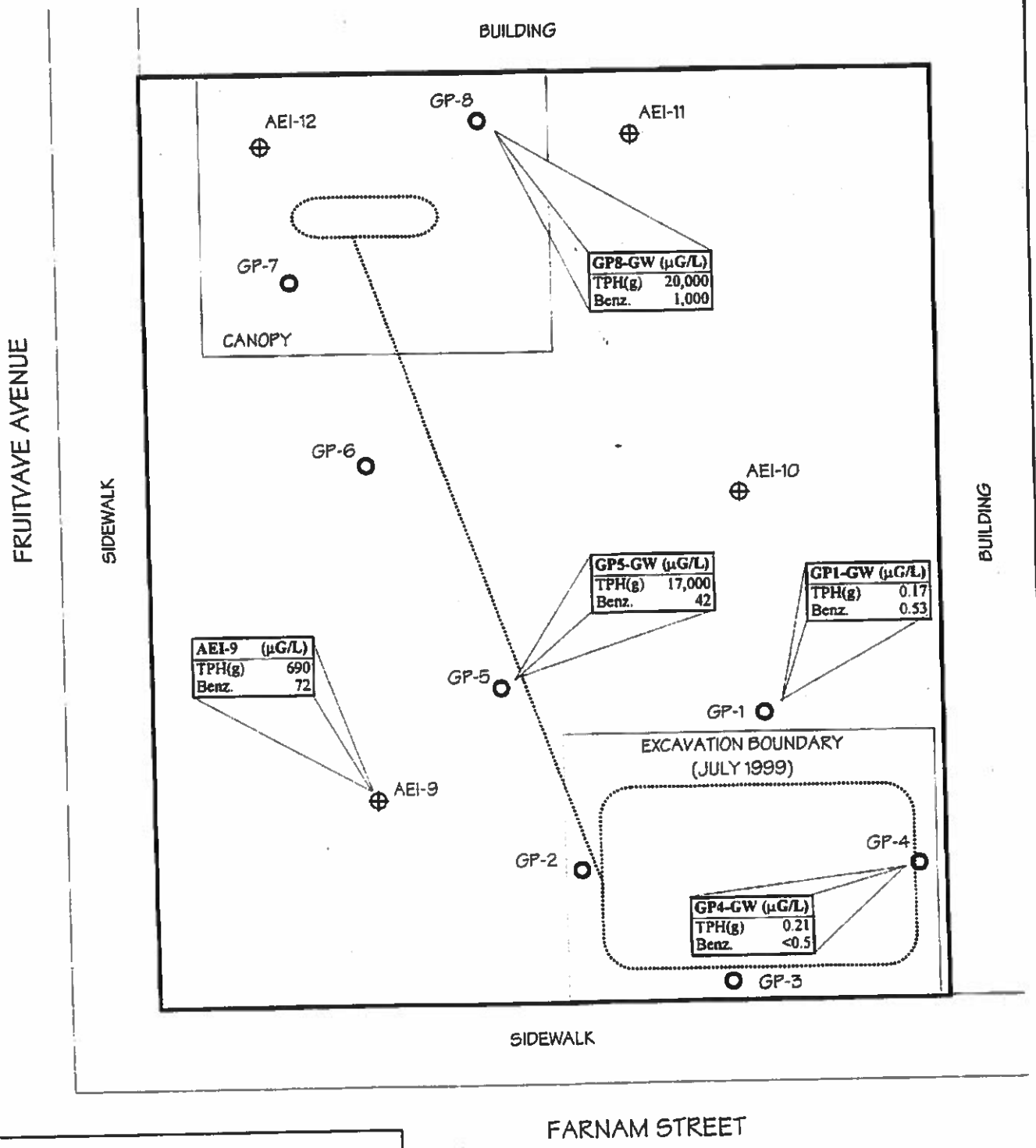
ND = Not detected above the Method Detection Limit (unless otherwise noted)

µg/L = micrograms per liter (ppb)

mg/L = milligrams per liter (ppm)

- Sample not analyzed for this chemical

TPH-g = Total petroleum hydrocarbons as gasoline



KEY

⊕ BORING LOCATIONS PERFORMED BY AEI AUGUST 24, 1999

O APPROXIMATE LOCATIONS OF SAMPLING PERFORMED BY *GLENFOS*; JULY, 1998

TPH(G) = Total Petroleum Hydrocarbons as gasoline

Benz. = Benzene

SCALE: 1" = 10'

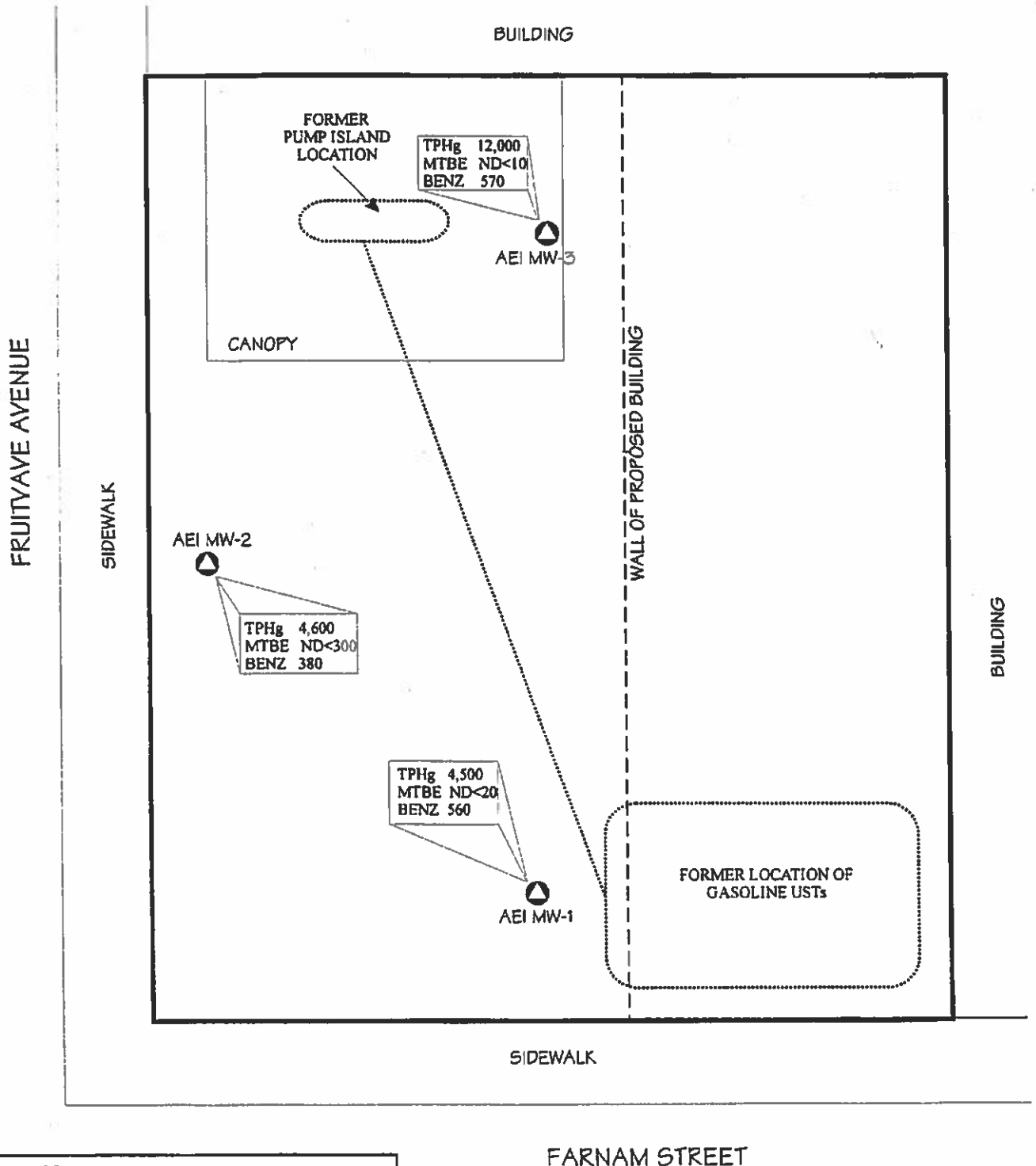
AEI CONSULTANTS

3210 OLD TUNNEL RD, SUITE B, LAFAYETTE, CA

PREVIOUS SOIL BORING LOCATIONS WITH GROUNDWATER SAMPLE ANALYTICAL

1450 FRUITVALE AVENUE
OAKLAND, CALIFORNIA

FIGURE 2



KEY

WELL LOCATIONS INSTALLED BY AEI

TPHg = Total Petroleum Hydrocarbons as gasoline
MTBE = Methyl Tertiary Butyl Ether
Benz = Benzene
All samples measured in ug/L
(micrograms per Liter)

SCALE: 1" = 10'

N

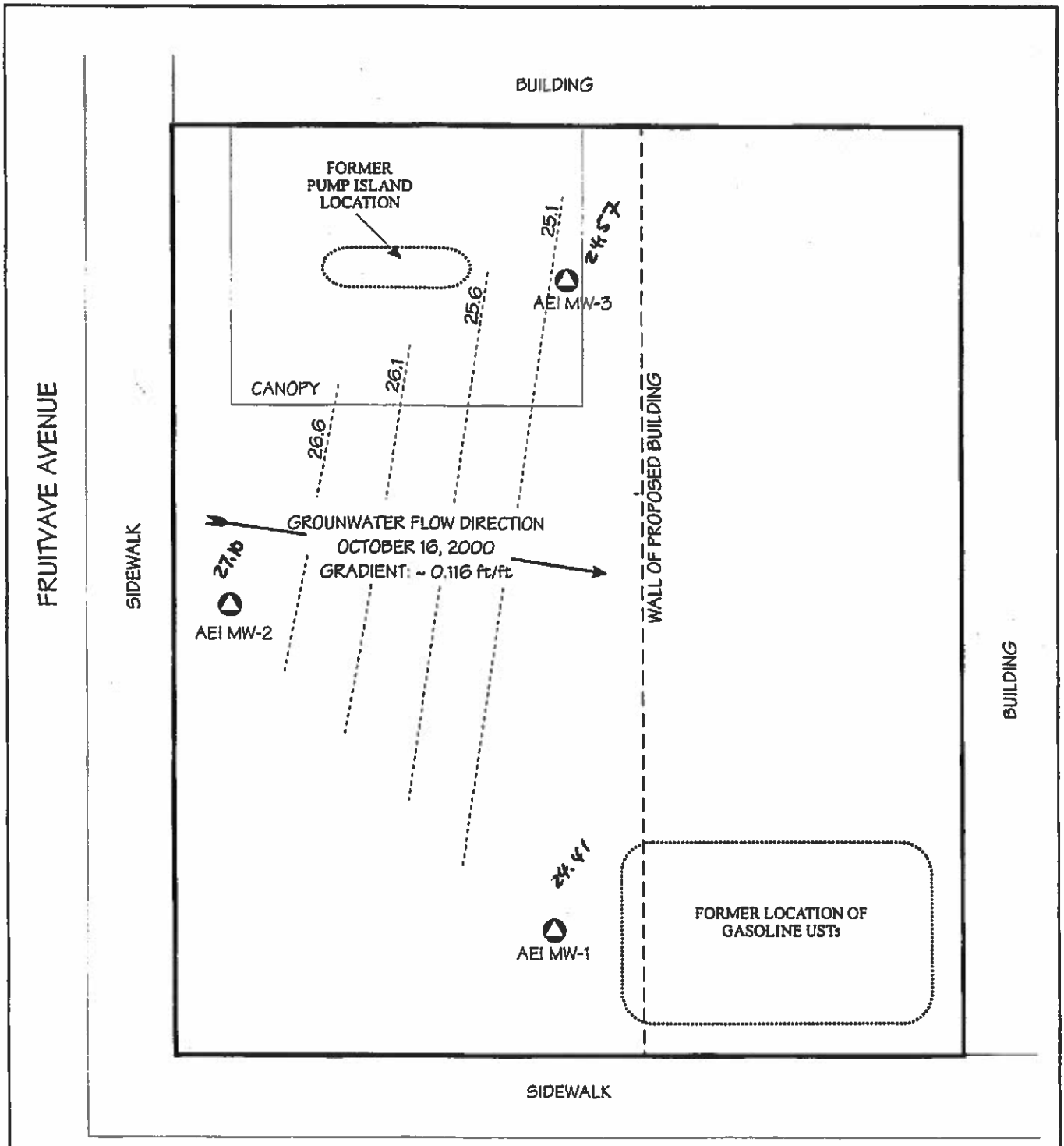
AEI CONSULTANTS

3210 OLD TUNNEL RD, SUITE B, LAFAYETTE, CA

WELL LOCATIONS WITH GROUNDWATER SAMPLE ANALYTICAL

1450 FRUITVALE AVENUE
OAKLAND, CALIFORNIA

FIGURE 3



KEY

- WELL LOCATIONS INSTALLED BY AEI
- 26.6 GROUNDWATER ELEVATION CONTOUR (FEET) 10/16/00

SCALE: 1" = 10'

N

AEI CONSULTANTS

3210 OLD TUNNEL RD, SUITE B, LAFAYETTE, CA

WELL LOCATIONS WITH GROUNDWATER GRADIENT MAP

1450 FRUITVALE AVENUE
OAKLAND, CALIFORNIA

FIGURE 4

Table 1
Groundwater Elevations

Well ID	Date	Well Elevation (ft msl)	Depth to Water (ft)	Groundwater Elevation (ft msl)
MW-1	10/16/00	42.13	17.72	24.41
MW-2	10/16/00	42.08	14.98	27.10
MW-3	10/16/00	42.55	17.98	24.57

Notes:
All well elevations are measured from the top of the casing and not from the ground surface
ft msl = feet above mean sea level

Table 2:
Soil Sample Analytical Results-October 2000

Sample ID	TPH-g mg/kg	MTBE mg/kg	Benzene mg/kg	Toluene mg/kg	Ethyl-benzene mg/kg	Xylenes mg/kg
MW-1 6.5'	<1.0	<.05	<.005	<.005	<.005	<.005
MW-1 11.5	**15.0**	<.05	<.005	**0.31**	<.005	**0.011**
MW-2 6.5'	<1.0	<.05	<.005	<.005	<.005	<.005
MW-2 11'	**73.0**	<.05	<.005	**0.044**	**0.0080**	**0.040**
MW-3 6.5'	<1.0	<.05	<.005	<.005	<.005	<.005
~~MW-3 16'~~	**360.0**	**<1.0**	**0.42**	**2.1**	**6.5**	**11.0**
MRL	1.0	0.05	0.005	0.005	0.005	0.005

MRL = Method Reporting Limit
TPH-g = Total Petroleum Hydrocarbons as gasoline
MTBE = Methyl tertiary butyl ether
mg/kg = milligram per kilogram

Table 3
Groundwater Sample Analytical Data-October 2000

Well/Sample ID	Date Collected	Consultant Lab	TPHg µg/L	MTBE µg/L	Benzene µg/L	Toluene µg/L	Ethylbenzene µg/L	Xylenes µg/L
MW-1	10/16/00	AEI/MAI	4,500	ND<20	560	14	53	62
MW-2	10/16/00	AEI/MAI	4,600	ND<300	380	3.8	95	33
MW-3	10/16/00	AEI/MAI	12,000	ND<10	570	32	680	1,200
MRL			50.0	5.0	0.5	0.5	0.5	0.5

MRL = Maximum Reporting Limit
µg/L micrograms per liter
AEI AEI Consultants
MAI McCampbell Analytical, Inc.
TPHg total petroleum hydrocarbons as gasoline
MTBE methyl tertiary butyl ether
ND not detected

Table 4:
Previous Soil Sample Analytical Results

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	7/9/98	10	-	<0.005	0.022	0.015	<0.01	-
GP-2 10'	Glenfos	7/9/98	1.5	-	0.017	<0.005	<0.005	<0.01	-
GP-2 15'	Glenfos	7/9/98	27	-	0.017	0.056	0.052	0.51	-
GP-2 30'	Glenfos	7/9/98	2.5	-	<0.005	<0.005	<0.005	<0.01	-
GP-3 10'	Glenfos	7/9/98	95	-	0.59	0.42	1.1	1.5	7.3
GP-3 15'	Glenfos	7/9/98	2.5	-	0.055	0.018	0.055	0.26	-
GP-3 20'	Glenfos	7/9/98	1.6	-	0.02	<0.005	0.02	0.032	-
GP-3 25'	Glenfos	7/9/98	<1	-	<0.005	<0.005	<0.005	<0.01	-
GP-4 10'	Glenfos	7/9/98	2.5	-	0.017	<0.005	0.003	0.021	4.1
GP-5 10'	Glenfos	7/9/98	6.5	-	<0.005	0.022	0.018	0.041	-
GP-5 15'	Glenfos	7/9/98	19	-	0.077	0.016	0.43	0.49	-
GP-5 20'	Glenfos	7/9/98	<1	-	<0.005	<0.005	<0.005	<0.01	-
GP-6 5'	Glenfos	7/9/98	<1	-	<0.005	<0.005	<0.005	<0.01	-
GP-6 10'	Glenfos	7/9/98	7.7	-	0.008	0.015	0.012	0.047	6.2
GP-6 15'	Glenfos	7/9/98	190	-	0.34	0.53	2.3	4.7	-
GP-6 20'	Glenfos	7/9/98	28	-	0.083	0.081	0.052	0.19	-
GP-7 10'	Glenfos	7/9/98	86	-	<0.005	0.088	0.09	0.5	-
GP-7 15'	Glenfos	7/9/98	2.7	-	0.008	0.012	<0.005	0.031	-
GP-8 10'	Glenfos	7/9/98	24	-	0.022	0.061	0.071	0.45	-
GP-8 15'	Glenfos	7/9/98	5.8	-	0.021	0.014	0.022	0.06	-
GP-8 20'	Glenfos	8/23/99	<1	-	<0.005	<0.005	<0.005	<0.01	-
AEI-9 10'	AEI	8/23/99	<1	<0.05	<0.005	<0.005	<0.005	<0.005	-
AEI-9 20'	AEI	8/23/99	<1	<0.05	<0.005	<0.005	<0.005	<0.005	-
AEI-10 10'	AEI	8/23/99	77	<0.05	<0.005	<0.005	0.078	<0.005	-
AEI-10 15'	AEI	8/23/99	69	0.071	0.1	0.21	0.23	<0.005	-
AEI-11 10'	AEI	8/23/99	<1	<0.05	<0.005	<0.005	<0.005	<0.005	-
AEI-11 15'	AEI	8/23/99	210	<0.40	<0.020	1.1	1.2	2.4	-
AEI-12 10'	AEI	8/23/99	24	<0.05	<0.005	0.12	<0.005	<0.005	-
AEI-12 15'	AEI	8/23/99	120	<0.40	<0.020	<0.020	1.6	1.6	-
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 5:
Previous Groundwater Sample Analytical Results

Sample ID	Consultant	Sample Date	TPH-g µg/L	MTBE µg/L	Benzene µg/L	Toluene µg/L	Ethyl-Benzene µg/L	Xylenes µg/L	Lead µg/L
GP 1	Glenfos	7/9/98	170	-	0.53	<0.5	1.2	2.0	-
GP 4	Glenfos	7/9/98	210	-	<0.5	<0.5	0.58	<1	11
GP 5	Glenfos	7/9/98	17,000	-	42	24	820	110	-
GP 8	Glenfos	7/9/98	20,000	<10	1,000	19	420	290	9.5
AEI-9W	AEI	8/23/99	690	3.8	72	0.79	29	24	-
MDL			50	5.0	0.5	0.5		1.5	2.5

MDL = Method Detection Limit

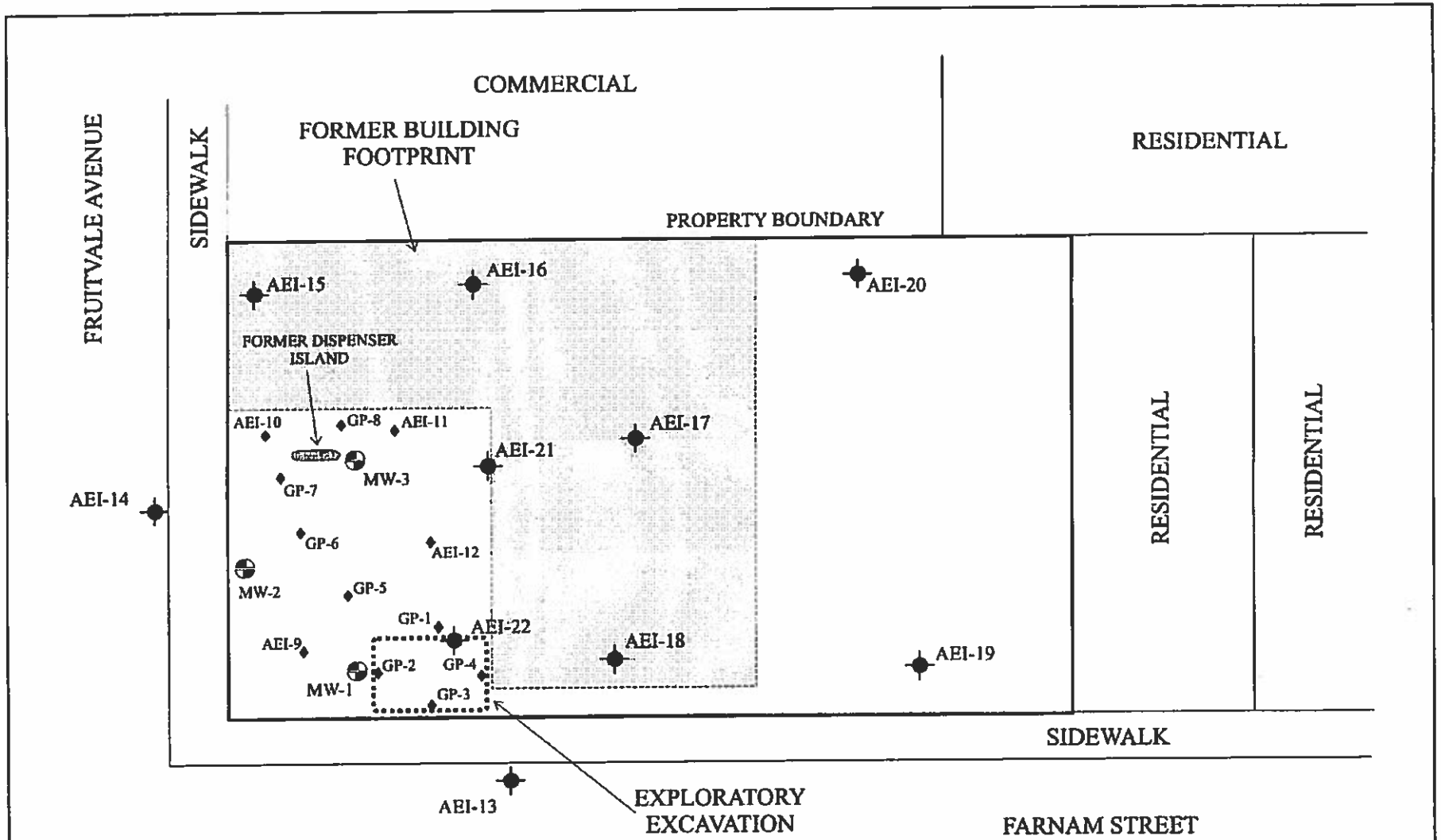
ND = Not detected above the Method Detection Limit (unless otherwise noted)

µg/L = micrograms per liter (ppb)

mg/L = milligrams per liter (ppm)

- Sample not analyzed for this chemical

TPH-g = Total petroleum hydrocarbons as gasoline

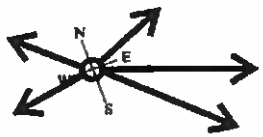


KEY

- Existing 2" Monitoring Wells
- Temporary Borings: 1998-1999
- Temporary Borings: June 2002

SCALE: 1" = 30'

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



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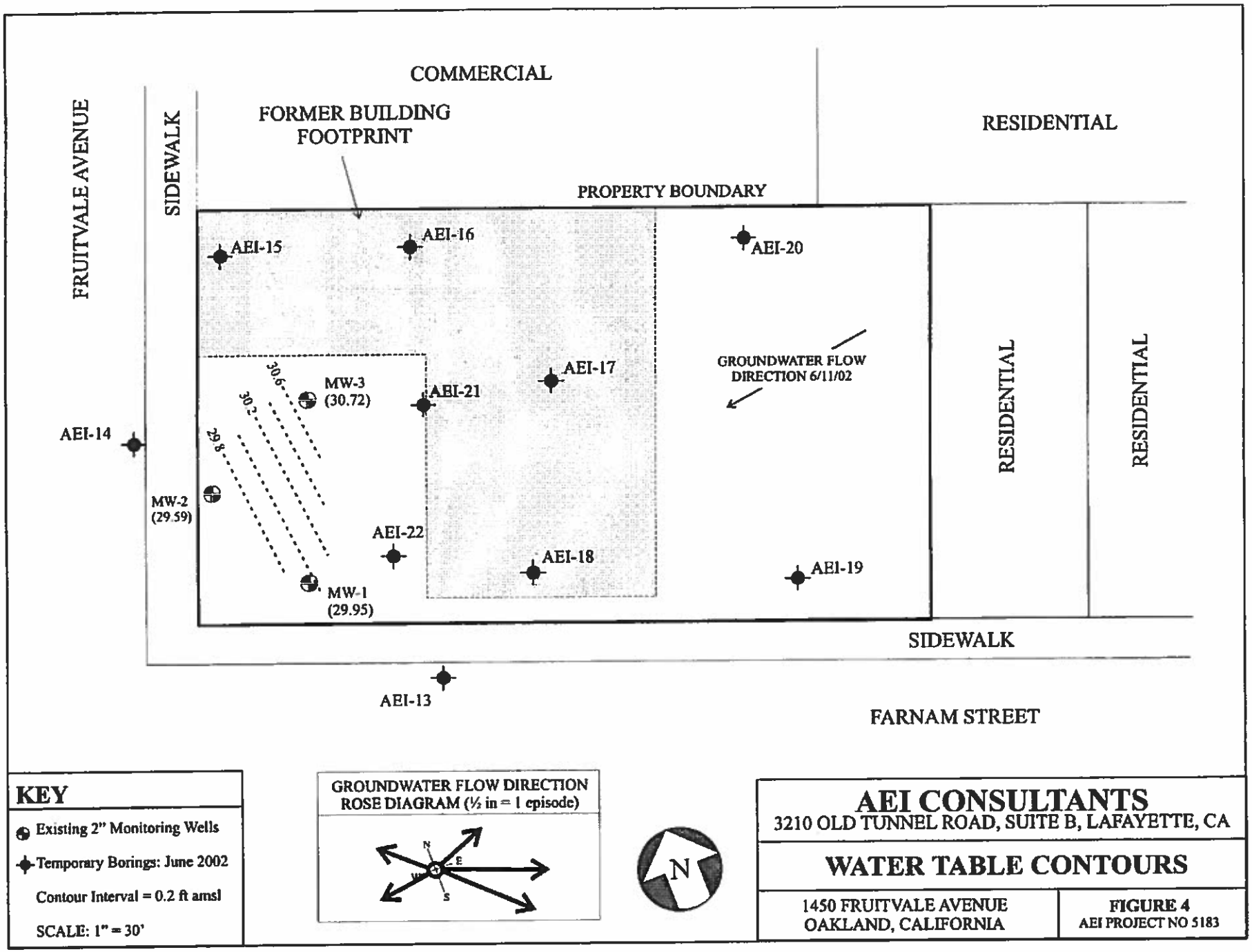
SITE PLAN

1450 FRUITVALE AVENUE
OAKLAND, CALIFORNIA

FIGURE 3
AEI PROJECT NO 5183



KEY

- Existing 2" Monitoring Wells
- Temporary Borings: June 2002
- Contour Interval = 0.2 ft amsl
- SCALE: 1" = 30'

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

N

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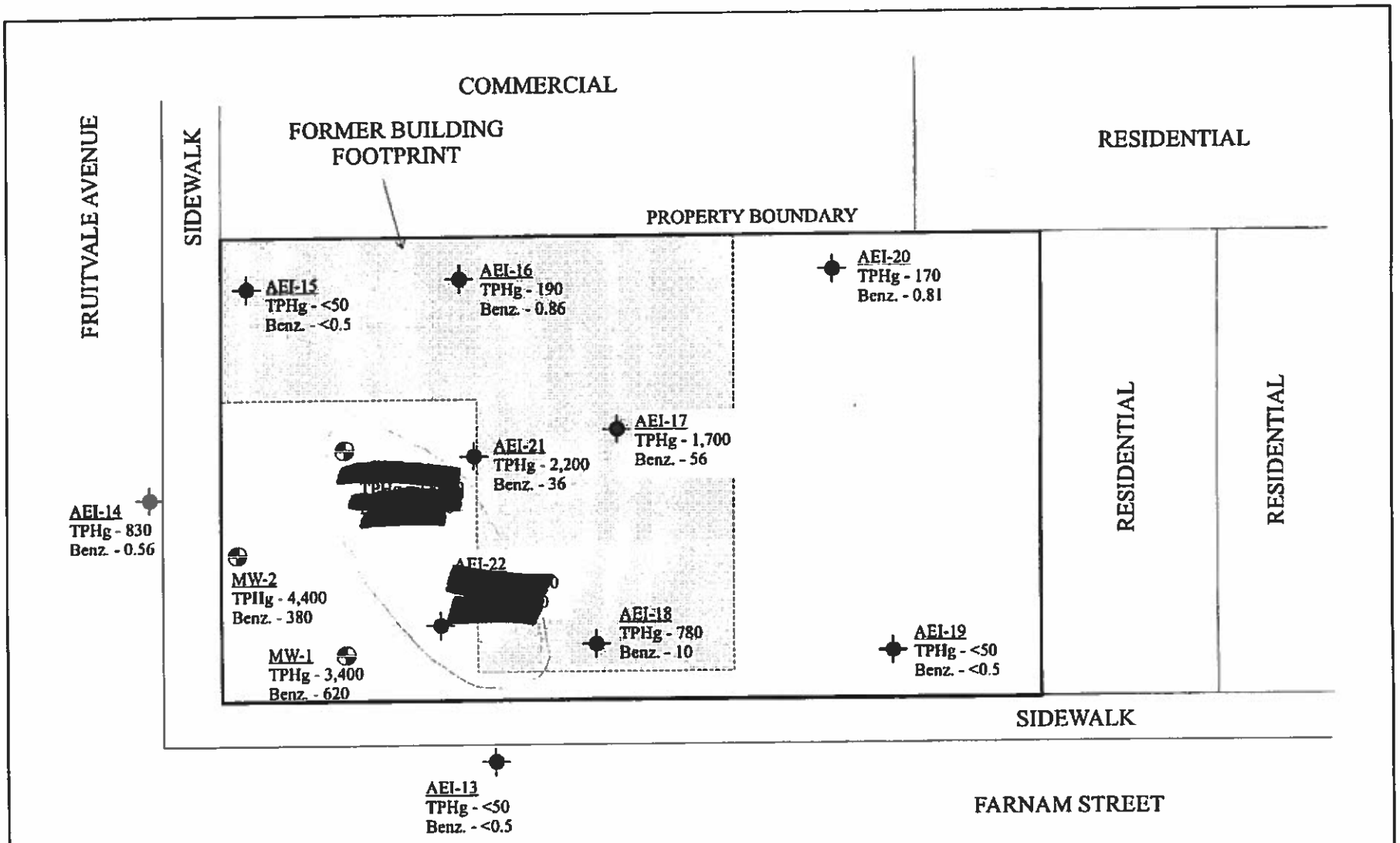
WATER TABLE CONTOURS

1450 FRUITVALE AVENUE
OAKLAND, CALIFORNIA

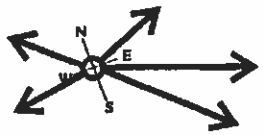
FIGURE 4
AEI PROJECT NO 5183



KEY

- Existing 2" Monitoring Wells
- Temporary Borings: June 2002
- Sample Results in µg/l.
- SCALE: 1" = 30'

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



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3210 OLD TUNNEL ROAD, SUITE B, LAFAYETTE, CA

GROUNDWATER SAMPLE ANALYTICAL RESULTS - JUNE 2002

1450 FRUITVALE AVENUE
OAKLAND, CALIFORNIA

FIGURE 5
AEI PROJECT NO 5183

Table 1
Soil Sample Analytical Data: SB-13 to SB-22

Sample ID	TPH-g mg/kg	MTBE mg/kg	Benzene mg/kg	Toluene mg/kg	Ethyl Benzene mg/kg	Xylenes mg/kg
AEI-13 10'	<1	<0.05	<0.005	<0.005	<0.005	<0.005
AEI-14 10'	<1	<0.05	<0.005	<0.005	<0.005	<0.005
AEI-15 10'	<1	<0.05	<0.005	<0.005	<0.005	<0.005
AEI-16 10'	<1	<0.05	<0.005	<0.005	<0.005	<0.005
AEI-16 19'	41	<0.2	<0.02	<0.02	0.038	0.079
AEI-17 10'	<1	<0.5	<0.005	<0.005	<0.005	<0.005
AEI-17 20'	290	<0.05	0.84	1.3	1.8	2.8
AEI-18 4'	<1	<0.05	<0.005	<0.005	<0.005	<0.005
AEI-18 14'	290	<0.02*	<0.2	0.91	2.3	2.9
AEI-19 15'	<1	<0.05	<0.005	<0.005	<0.005	<0.005
AEI-20 10'	<1	<0.05	<0.005	<0.005	<0.005	<0.005
AEI-20 20'	42	<0.5	<0.05	0.20	0.12	0.15
AEI-21 5'	<1	<0.05	<0.005	<0.005	<0.005	<0.005
AEI-21 13'	12	<0.05	<0.005	0.090	0.028	<0.005
AEI 22 10'	74	<0.1	0.0086	0.58	0.11	0.26
AEI 22 20'	5	<0.05	0.30	0.016	0.26	0.42
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 2
Groundwater Sample Analytical Data: SB-13 to SB-22

Sample ID	TPH-g µg/L	MTBE µg/L	Benzene µg/L	Toluene µg/L	Ethyl-Benzene µg/L	Xylenes µg/L
MW-13 W	<50	<5.0	<0.5	<0.5	<0.5	<0.5
MW-14 W	830	<5.0	0.56	2.7	1.2	2.9
MW-15 W	<50	14*	<0.5	<0.5	<0.5	<0.5
MW-16 W	190	<5.0	0.86	1.0	0.75	1.3
MW-17 W	1,700	<0.5*	56	2.5	89	69
MW-18 W	780	<5.0	10	1.1	41	20
MW-19 W	<50	<5.0	<0.5	<0.5	<0.5	<0.5
MW-20 W	170	<5.0	0.81	0.55	7.7	3.1
MW-21 W	2,200	2.8*	36	<5.0	110	58
MW-22 W	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
Water Table Data

Well ID	Date	Well Elevation (ft msl)	Depth to Water (ft)	Groundwater Elevation (ft msl)
MW-1	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**
MW-2	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**
MW-3	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**

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)**

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

Table 4
Monitoring Well Sample Analytical Data

Well/Sample ID	Date Collected	Consultant/ Lab	TPHg µg/L	MTBE µg/L	Benzene µg/L	Toluene µg/L	Ethylbenzene µg/L	Xylenes µg/L
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**	**2.4***	**620**	**9.7**	**75**	**11**
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**	**23***	**680**	**8.1**	**160**	**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**	**<2.5***	**2,100**	**44**	**2,300**	**1,600**
MRL			50.0	5.0	0.5	0.5	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
* MTBE concentrations by 8260, all others by 602/8020

Table 5
Historical Soil Sample Analytical Data

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	

Method Detection Limit
lligrams per kilogram (ppm)
ot analyzed for this chemical
troleum hydrocarbons as gasoline

Table 6
Historical Groundwater Sample Analytical Data

Sample ID	Consultant	Sample Date	TPH-g µg/L	MTBE µg/L	Benzene µg/L	Toluene µg/L	Ethyl-Benzene µg/L	Xylenes µg/L	Lead 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	11
GP 5	Glenfos	7/9/1998	17,000	-	42	24	820	110	-
GP 8	Glenfos	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AEI-9W	AEI	8/23/1999	690	3.8	72	0.79	29	24	-
MDL			50	5.0	0.5	0.5		1.5	2.5

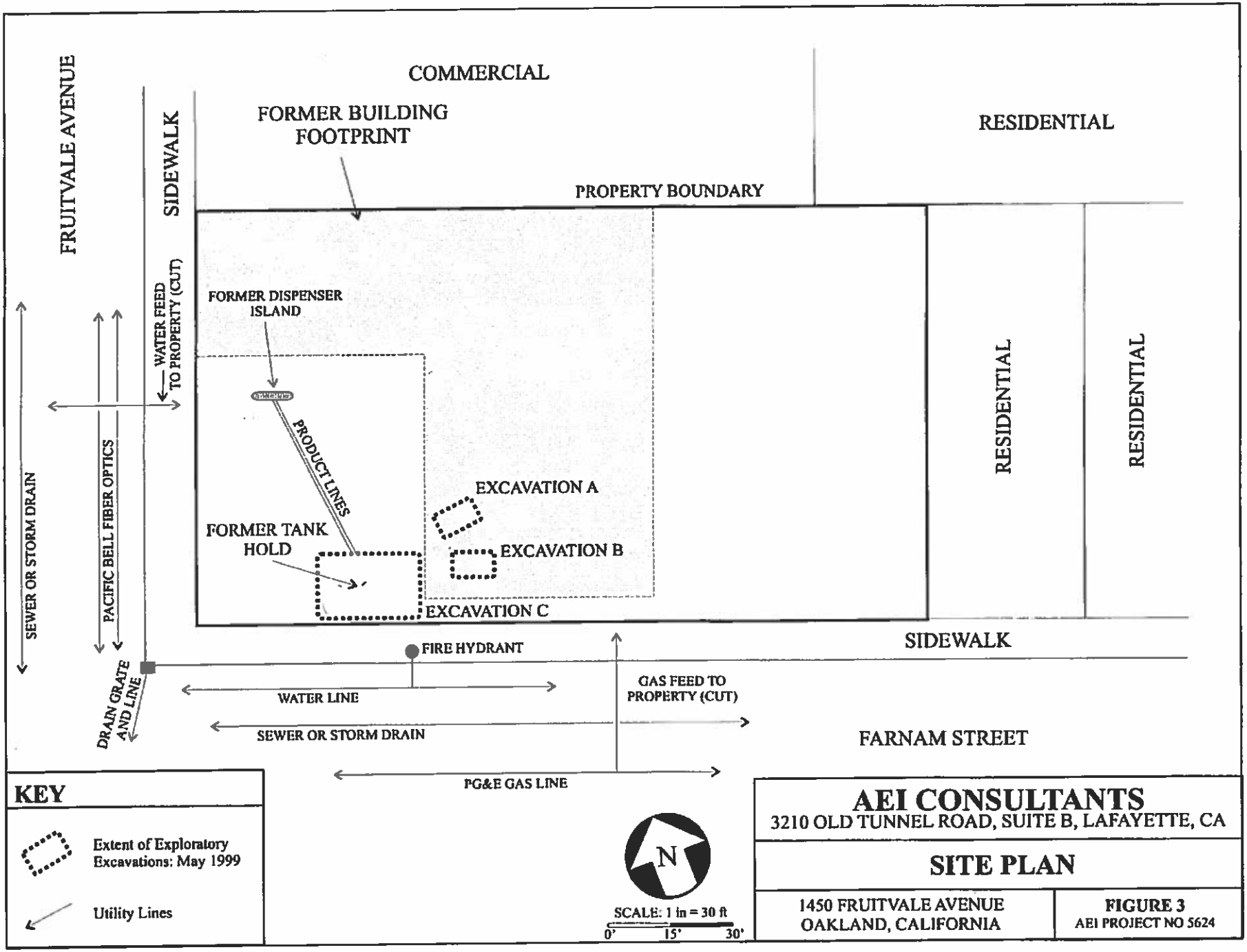
MDL = Method Detection Limit

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

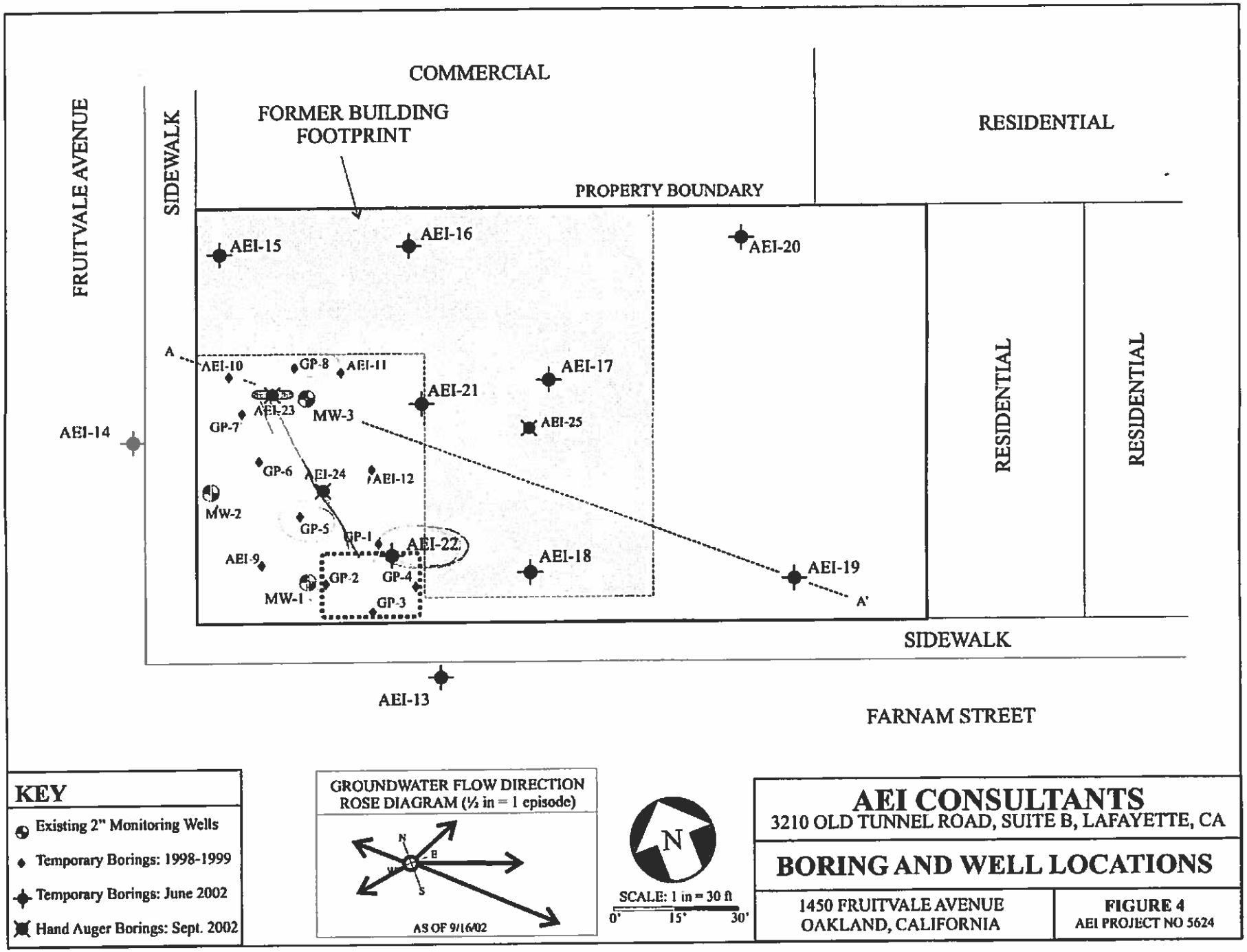


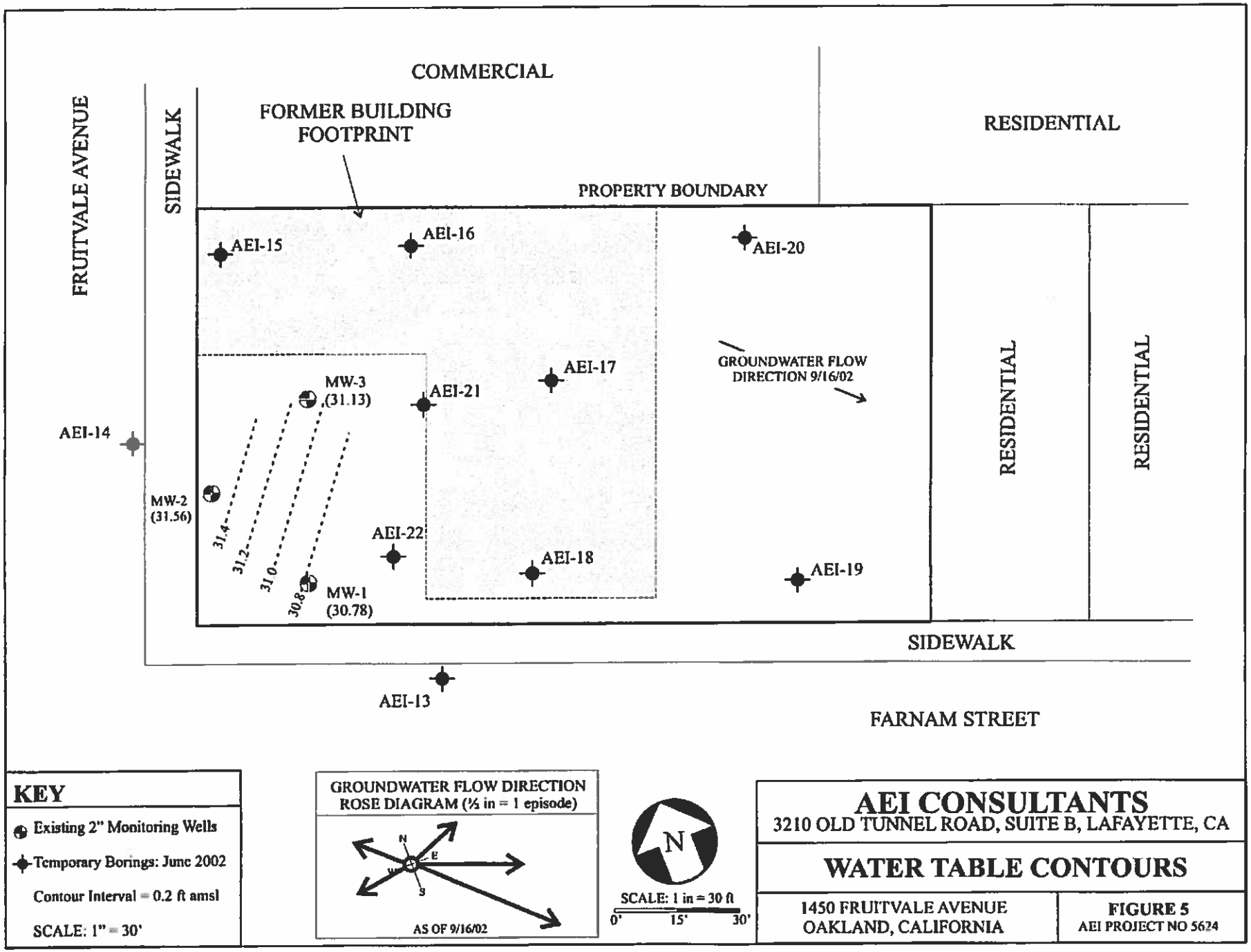
AEI CONSULTANTS
3210 OLD TUNNEL ROAD, SUITE B, LAFAYETTE, CA

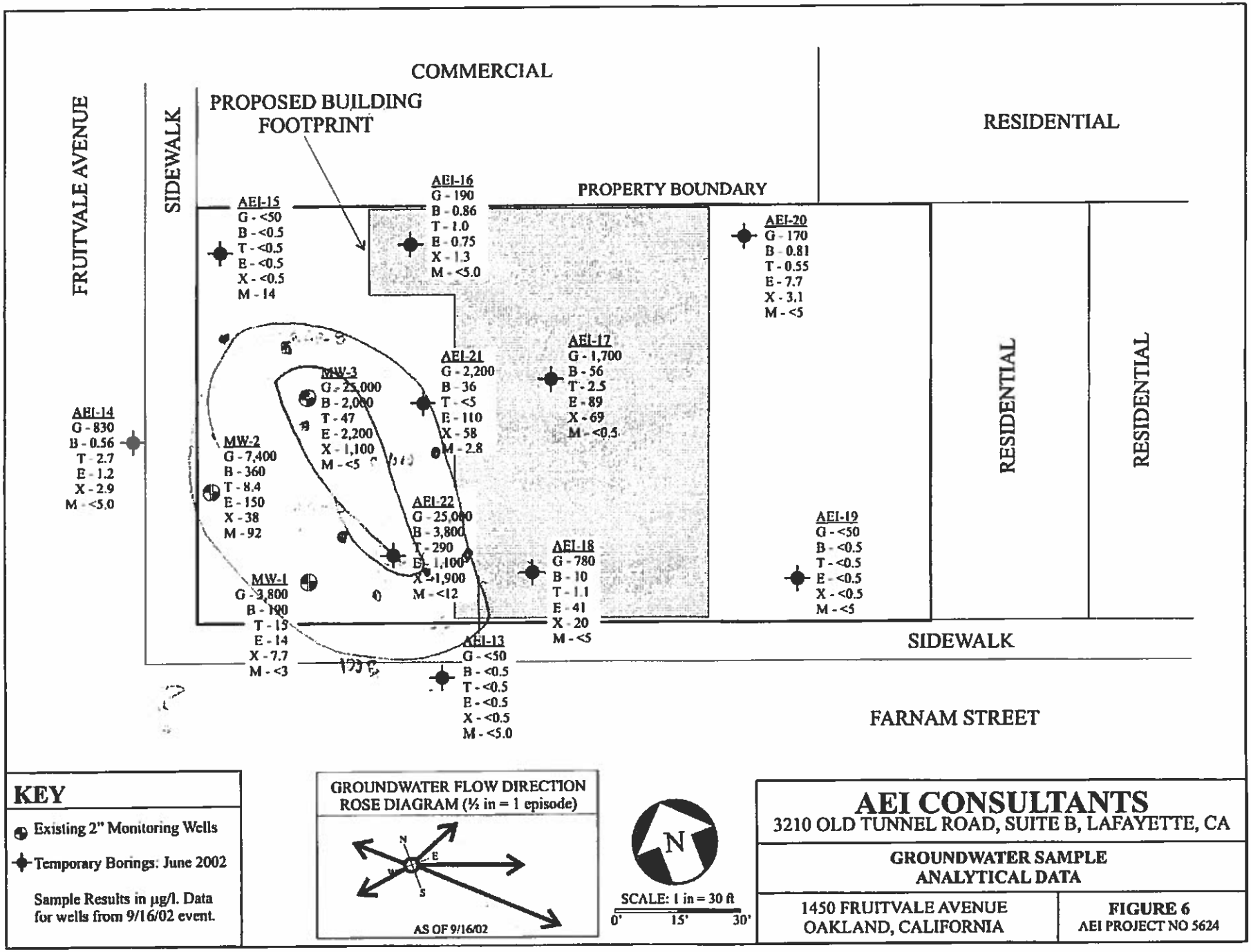
SITE PLAN

1450 FRUITVALE AVENUE
OAKLAND, CALIFORNIA

FIGURE 3
AEI PROJECT NO 5624


COMMERCIAL
FORMER BUILDING FOOTPRINT
RESIDENTIAL
PROPERTY BOUNDARY
FRUITVALE AVENUE
SIDEWALK
AEI-15
AEI-16
AEI-20
A
AEI-10
GP-8
AEI-11
AEI-17
AEI-21
AEI-23
MW-3
GP-7
AEI-25
AEI-14
GP-6
AEI-24
AEI-12
MW-2
GP-5
GP-1
AEI-22
AEI-9
AEI-18
AEI-19
GP-2
GP-4
MW-1
GP-3
A'
RESIDENTIAL
RESIDENTIAL
SIDEWALK
AEI-13
FARNAM STREET
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)
N
E
W
S
AS OF 9/16/02
N
SCALE: 1 in = 30 ft
0'
15'
30'
AEI CONSULTANTS
3210 OLD TUNNEL ROAD, SUITE B, LAFAYETTE, CA
BORING AND WELL LOCATIONS
1450 FRUITVALE AVENUE
OAKLAND, CALIFORNIA
FIGURE 4
AEI PROJECT NO 5624


COMMERCIAL
FORMER BUILDING FOOTPRINT
RESIDENTIAL
FRUITVALE AVENUE
SIDEWALK
PROPERTY BOUNDARY
AEI-15
AEI-16
AEI-20
AEI-17
GROUNDWATER FLOW DIRECTION 9/16/02
MW-3 (31.13)
AEI-21
AEI-14
RESIDENTIAL
RESIDENTIAL
MW-2 (31.56)
31.4
31.2
31.0
30.8
AEI-22
AEI-18
AEI-19
MW-1 (30.78)
SIDEWALK
AEI-13
FARNAM STREET
KEY
Existing 2" Monitoring Wells
Temporary Borings: June 2002
Contour Interval = 0.2 ft amsl
SCALE: 1" = 30'
GROUNDWATER FLOW DIRECTION ROSE DIAGRAM (½ in = 1 episode)
N
E
W
S
AS OF 9/16/02
N
SCALE: 1 in = 30 ft
0'
15'
30'
AEI CONSULTANTS
3210 OLD TUNNEL ROAD, SUITE B, LAFAYETTE, CA
WATER TABLE CONTOURS
1450 FRUITVALE AVENUE
OAKLAND, CALIFORNIA
FIGURE 5
AEI PROJECT NO 5624



KEY

- Existing 2" Monitoring Wells
- Temporary Borings: June 2002

Sample Results in µg/l. Data for wells from 9/16/02 event.

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

AS OF 9/16/02

N

SCALE: 1 in = 30 ft

0' 15' 30'

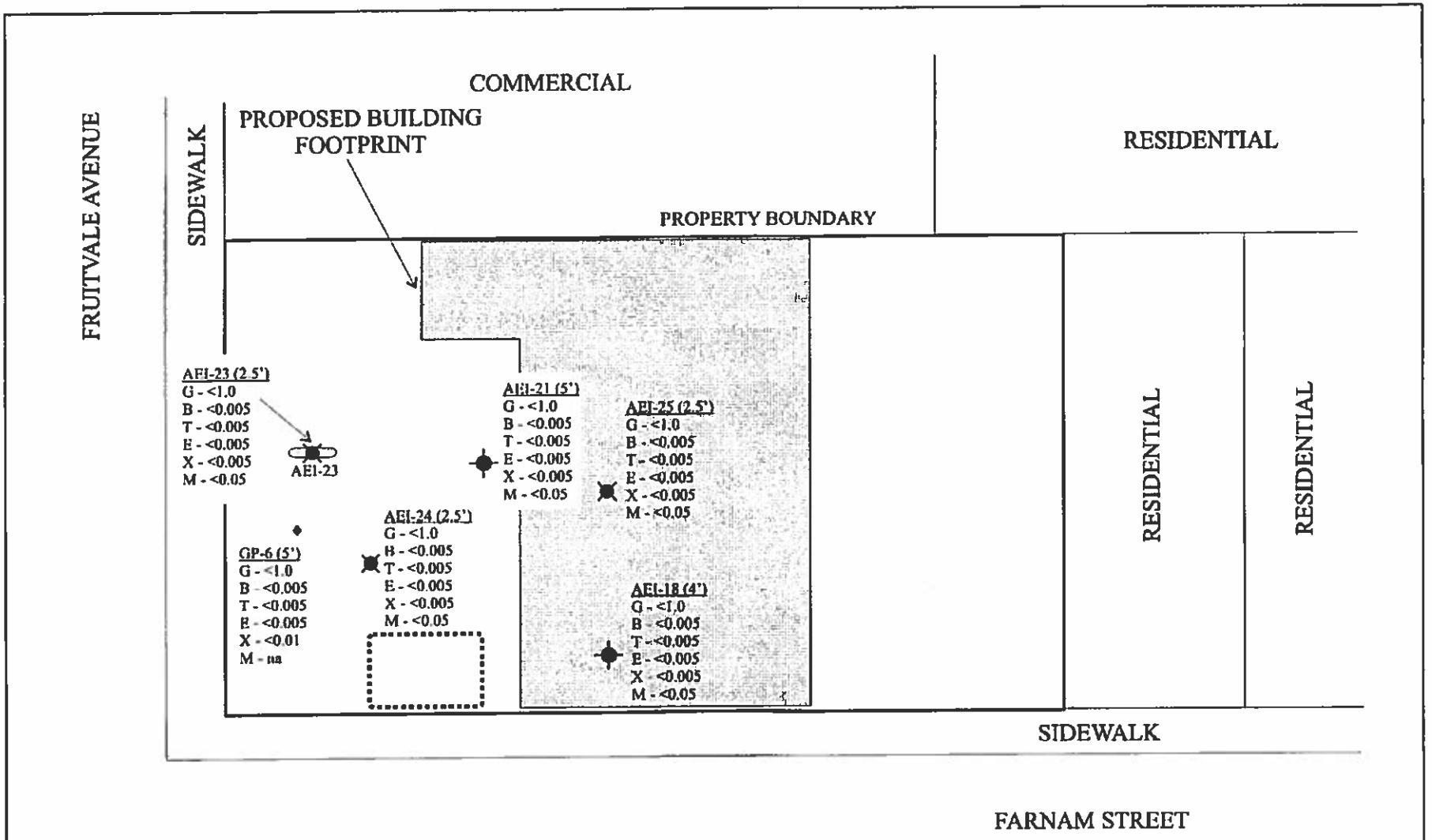
AEI CONSULTANTS

3210 OLD TUNNEL ROAD, SUITE B, LAFAYETTE, CA

GROUNDWATER SAMPLE ANALYTICAL DATA

1450 FRUITVALE AVENUE
OAKLAND, CALIFORNIA

FIGURE 6
AEI PROJECT NO 5624

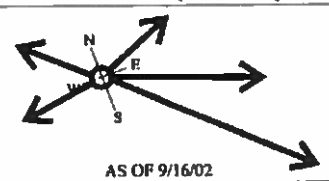


KEY

Boring and well locations with sample depth in parenthesis. All soil sample data in mg/kg

G-TPH gasoline
B-Benzene
T-Toluene
E-Ethylbenzene
X-Xylenes
M-MTBE

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



AS OF 9/16/02

N

SCALE: 1 in = 30 ft

0' 15' 30'

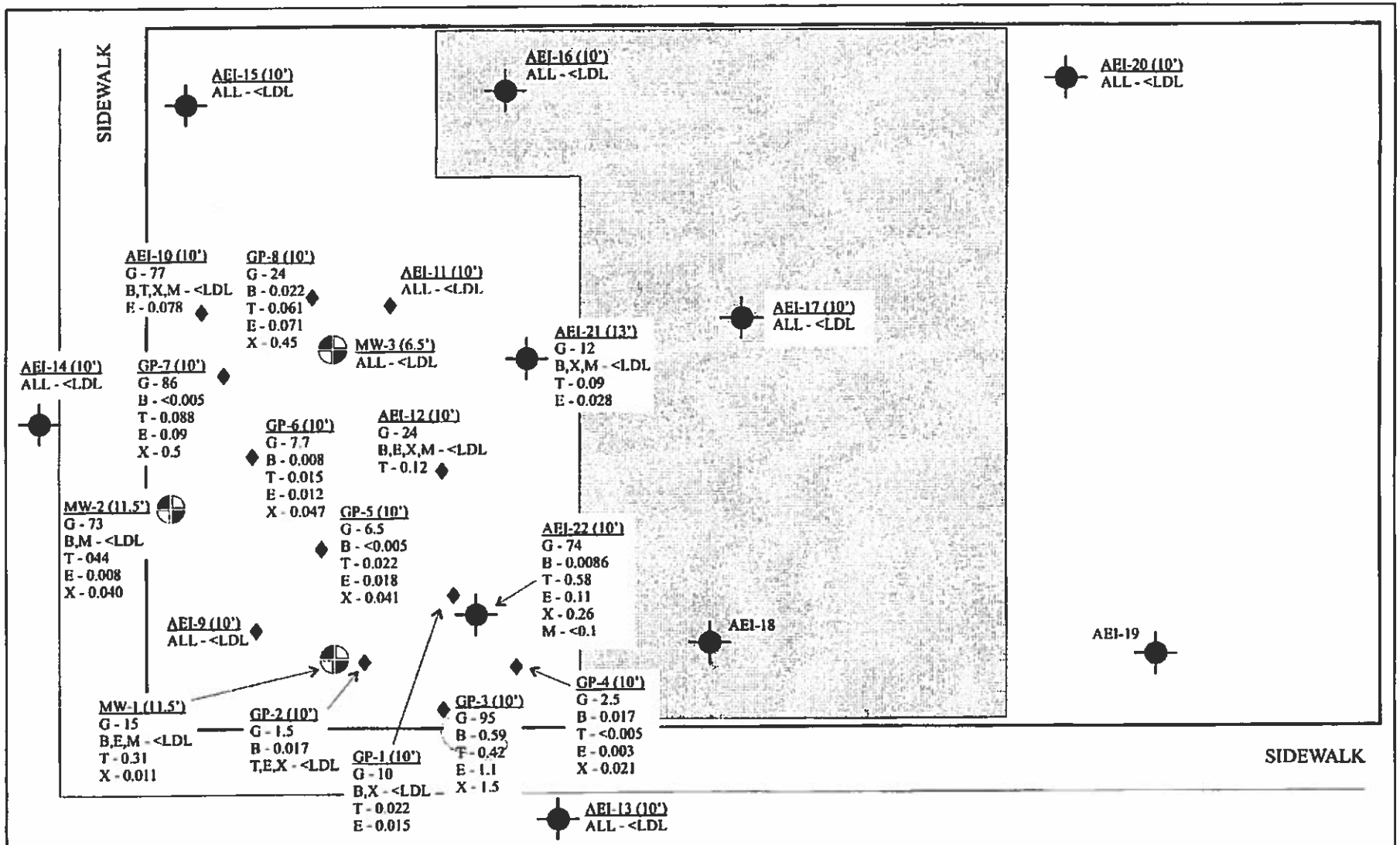
AEI CONSULTANTS

3210 OLD TUNNEL ROAD, SUITE B, LAFAYETTE, CA

SOIL SAMPLE ANALYTICAL DATA (0 TO 5 FEET BGS)

1450 FRUITVALE AVENUE
OAKLAND, CALIFORNIA

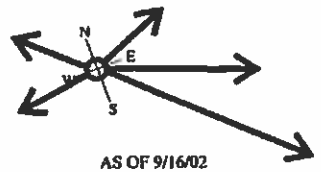
FIGURE 7
AEI PROJECT NO 5624



KEY

◔ ♦ ✛ ✕	Boring and well locations with sample depth in parenthesis. All soil sample data in mg/kg. <LDL= less than detection limit.
G-TPH gasoline B-Benzene T-Toluene E-Ethylbenzene X-Xylenes M-MTBE	

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



AS OF 9/16/02

N

SCALE: 1 in = 20 ft

0' 10H' 20'

AEI CONSULTANTS

3210 OLD TUNNEL ROAD, SUITE B, LAFAYETTE, CA

SOIL SAMPLE ANALYTICAL DATA
(5 FEET BGS TO WATER TABLE)

1450 FRUITVALE AVENUE
OAKLAND, CALIFORNIA

FIGURE 8
AEI PROJECT NO 5624

Table 1

Sample Analtyical Data: Exploratory Excavation Project

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

Table 2
Soil Sample Analytical Data

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 2
Soil Sample Analytical Data: Continued

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 3
Groundwater Sample Analytical Data: Temporary Borings

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 4
Water Table Data

Well ID (Screen - ft bgs)	Date	Well Elevation (ft msl)	Depth to Water (ft)	Groundwater Elevation (ft msl)
MW-1	10/16/00	42.13	17.72	24.41
(15-30)	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	10/16/00	42.08	14.98	27.10
(15-30)	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	10/16/00	42.55	17.98	24.57
(15-30)	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

MRL

Table 5
Monitoring Well Sample Analytical Data
Petroleum Hydrocarbons

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

Table 6

Groundwater RBSLs: Residential Land Use: Tier 2 Clayey Silts

Pathway		*Risk Type (Cancer / Hazard)*	*Tier 2 RBSL µg/l*	*Site Maximum µg/l*
Benzene	Inhalation of indoor air vapors	Cancer	5600	3,800
		Hazard	19000	
	Inhalation of outdoor air vapors	Cancer	>SOL	
		Hazard	>SOL	
Toluene	Inhalation of indoor air vapors	Cancer	nc	290
		Hazard	>SOL	
	Inhalation of outdoor air vapors	Cancer	nc	
		Hazard	>SOL	
E-benzene	Inhalation of indoor air vapors	Cancer	nc	2,200
		Hazard	>SOL	
	Inhalation of outdoor air vapors	Cancer	nc	
		Hazard	>SOL	
Xylenes	Inhalation of indoor air vapors	Cancer	nc	1,900
		Hazard	>SOL	
	Inhalation of outdoor air vapors	Cancer	nc	
		Hazard	>SOL	
MTBE	Inhalation of indoor air vapors	Cancer	nc	92
		Hazard	35000	
	Inhalation of outdoor air vapors	Cancer	nc	
		Hazard	>SOL	

nc - chemical not considered carcinogenic
>SOL: RBLS exceeds the solubility of chemical in water
SAT: RBSP exceeds the saturation of chemical in soil
Source: Oakland, 2000.

Table 7

Subsurface Soil RBSLs: Residential Land Use: Tier 2 Clayey Silts

Pathway		*Risk Type (Cancer / Hazard)*	*Tier 2 RBSL mg/kg*	*Site Maximum mg/kg*
Benzene	Inhalation of indoor air vapors	Cancer	1.9	0.59
		Hazard	6.2	
	Inhalation of outdoor air vapors	Cancer	160	
		Hazard	650	
Toluene	Inhalation of indoor air vapors	Cancer	nc	0.58
		Hazard	930	
	Inhalation of outdoor air vapors	Cancer	nc	
		Hazard	SAT	
E-benzene	Inhalation of indoor air vapors	Cancer	nc	1.1
		Hazard	SAT	
	Inhalation of outdoor air vapors	Cancer	nc	
		Hazard	SAT	
Xylenes	Inhalation of indoor air vapors	Cancer	nc	1.5
		Hazard	SAT	
	Inhalation of outdoor air vapors	Cancer	nc	
		Hazard	SAT	
MTBE	Inhalation of indoor air vapors	Cancer	nc	<LDL
		Hazard	14,000	
	Inhalation of outdoor air vapors	Cancer	nc	
		Hazard	SAT	

nc - chemical not considered carcinogenic

>SOL: RBLS exceeds the solubility of chemical in water

SAT: RBSP exceeds the saturation of chemical in soil

Source: Oakland, 2000.

<LDL - less than laboratory detection limits, generally 0.1 to 0.05 for MTBE

Table 8

Surface Soil RBSLs: Residential Land Use: Tier 2 Clayey Silts

Pathway		*Risk Type (Cancer / Hazard)*	*Tier 2 RBSL mg/kg*	*Site Maximum mg/kg*
Benzene	Soil Ingestion, dermal contact, and vapor inhallatoin	Cancer	19	<0.005
		Hazard	63	
Toluene	Soil Ingestion, dermal contact, and vapor inhallatoin	Cancer	nc	<0.005
		Hazard	7,100	
E-benzene	Soil Ingestion, dermal contact, and vapor inhallatoin	Cancer	nc	<0.005
		Hazard	3,900	
Xylenes	Soil Ingestion, dermal contact, and vapor inhallatoin	Cancer	nc	<0.005
		Hazard	53,000	
MTBE	Soil Ingestion, dermal contact, and vapor inhallatoin	Cancer	nc	<0.05
		Hazard	200	

nc - chemical not considered carcinogenic
>SOL: RBLS exceeds the solubility of chemical in water
SAT: RBSP exceeds the saturation of chemical in soil
Source: Oakland, 2000.

Table 9

Groundwater Screening Levels: Drinking Water Resource Not Threatened

(All Concentrations Expressed in mg/l)

Chemical	Site Maximum	Ceiling Level		Indoor Air Impacts		Aquatic Life Protection (upon discharge to surface water)	Surface Water Concentration
		Nuisance Odor (upon discharge to surface)	Upper Limit	Coarse Soils	Fine Soils		
TPH-gasoline	**25000**	5000	**50000**	na	na	500	na
Benzene	**3800**	20000	50000	84	**5800**	46	71
Toluene	**290**	400	**50000**	76000	530000 (sol)	130	200000
Ethyl-Benzene	**2200**	300	**50000**	170000 (sol)	170000 (sol)	290	29000
Xylenes	**1900**	5300	**50000**	150000	160000 (sol)	13	na
MTBE	**92**	1800	**50000**	50000	490000	8000	na

Components Shown in Red are not considered valid or complete for this site (see text)

Table 10
Surface Soil Screening Levels (<10 feet deep)
(All Concentrations Expressed in mg/kg)

Chemical	Site Maximum	Ceiling	Urban Area Ecotoxicity	Direct Exposure				Indoor Air				Groundwater Protection		
				Residential		Com. / Ind.		Residential		Com. / Ind.				
				Cancer	Non-cancer (HQ = 0.2)	Cancer	Non-cancer (HQ = 0.2)	Coarse Soils	Fine Soils	Coarse Soils	Fine Soils	Target GW Conc** (µg/l)	DAF	Soil Level
TPH-gasoline	95	500	na	na	na	na	na	na	na	na	na	500	834	400
Benzene	0.59	500	25	0.18	1.4	0.39	4.8	0.18*	0.18*	0.39*	0.39*	46	44.8	2.1
Toluene	0.58	500	150	na	120	na	400	30	310	89	520 (sat)	130	64.2	8.4
Ethyl-Benzene	1.1	230	na	na	300(sat=230)	na	1200(sat=230)	76	230 (sat)	220	230 (sat)	290	82.1	24
Xylenes	1.5	210	na	na	270(sat=210)	na	890(sat=210)	210 (sat)	210 (sat)	210 (sat)	210 (sat)	13	78.5	1
MTBE	<0.5***	100	na	34	140	79	2100	3.4	68	12	290	1800	5.59	10

Components Shown in Red are not considered valid or complete for this site (see text)
* Indoor Air exposure pathway levels for benzene set as direct exposure levels (RWQCB, 2001)
** Target groundwater concentration based on lowest component of Table 9, rather than lowest relevant component
*** No MTBE detected in soil above water table. Highest laboratory detection limit shown.
Groundwater Protection Soil Level = Dilution-attenuation factor (DAF) x Target Groundwater Concentration x 0.001 mg/ml

Table 11

Suburface Soil Screening Levels (>10 feet deep to water table)

(All Concentrations Expressed in mg/kg)

Chemical	Site Maximum	Ceiling		Direct Exposure Construction/Trenchworker		Indoor Air Residential		Indoor Air Com. / Ind.		Groundwater Protection		
		Res.	Com./Ind.	Cancer	Non-cancer (HQ = 0.2)	Coarse Soils	Fine Soils	Coarse Soils	Fine Soils	Target GW Conc** (µg/l)	DAF	Soil Level
TPH-gasoline	95	5000	5000	na	na	na	na	na	na	500	834	400
Benzene	0.59	1000	1100	16	58	0.18	0.18	0.39	0.39	46	44.8	2.1
Toluene	0.58	520	520	na	4700(sat=520)	30	310	89	520(sat)	130	64.2	8.4
Ethyl-Benzene	1.1	230	230	na	12000(sat=230)	76	230(sat)	220	230(sat)	290	82.1	24
Xylenes	1.5	210	210	na	11000(sat=210)	210(sat)	210(sat)	210(sat)	210(sat)	13	78.5	1
MTBE	<0.5***	500	1000	2900	4900	3.4	68	12	290	1800	5.59	10

Components Shown in Red are not considered valid or complete for this site (see text)

* Indoor Air exposure pathway levels for benzene set as direct exposure levels (RWQCB, 2001)

** Target groundwater concentration based on lowest component of Table 9, rather than lowest relevant component

*** No MTBE detected in soil above water table. Highest laboratory detection limit shown.

Groundwater Protection Soil Level = Dilution-attenuation factor (DAF) x Target Groundwater Concentration x 0.001 mg/ml

Appendix C

Site Underground Utility Maps

PERSONNEL: D. Bissini

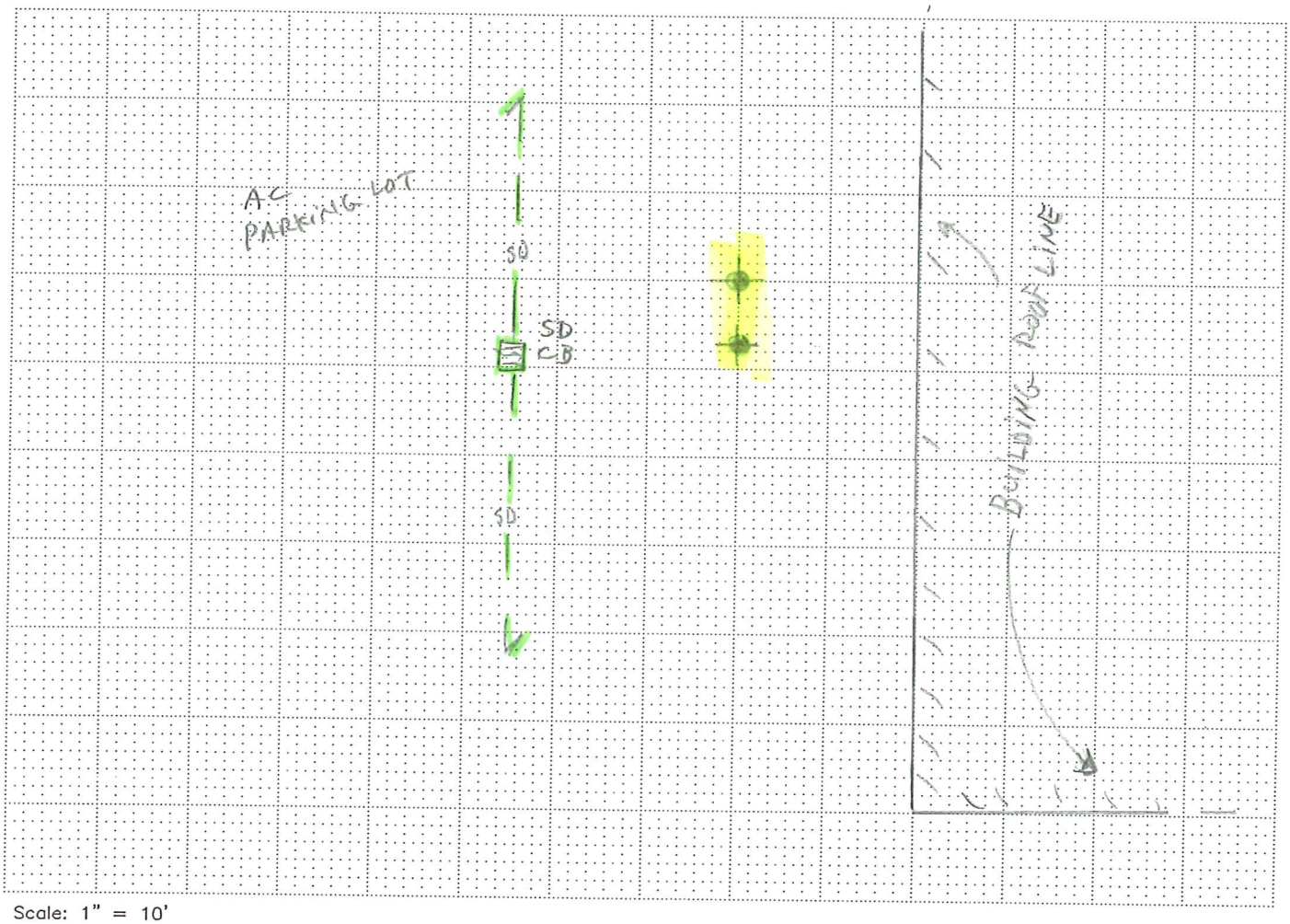
JOB: 13-1034.13 | DATE: 10-24-13

NORCAL GEOPHYSICAL CONSULTANTS INC.

CLIENT: Broadbent & Associates

LOCATION: Former ARCO 402
1450 Fruitvale Ave, Oakland, Calif

BORING: SB-1A & SB-1B



Scale: 1" = 10'

EXPLANATION

- Original Boring Location
- Final Boring Location
- Existing Well Location
- GPR Traverse
- OR — Localized GPR Anomaly
- Utility Alignment

Utilities

- _ T (Telephone, Comm.)
- _ E (Electric)
- _ NG (Natural Gas)
- _ CA (Compressed Air)
- _ STM (Steam)
- _ SS (Sanitary Sewer)
- ✓ SD (Storm Drain)
- _ W (Water)
- _ FS (Fire Supression)
- _ UU (Undifferentiated Utility)

Surface

- _ RC (Reinforced Concrete)
- ✓ AC (Asphalt)
- _ C (Concrete)
- _ Soil
- _ Gravel
- _ other

NOTES

Equipment:
- ✓ GPR (Radar)
- ✓ RD 4000
- _ M Scope
- _ other

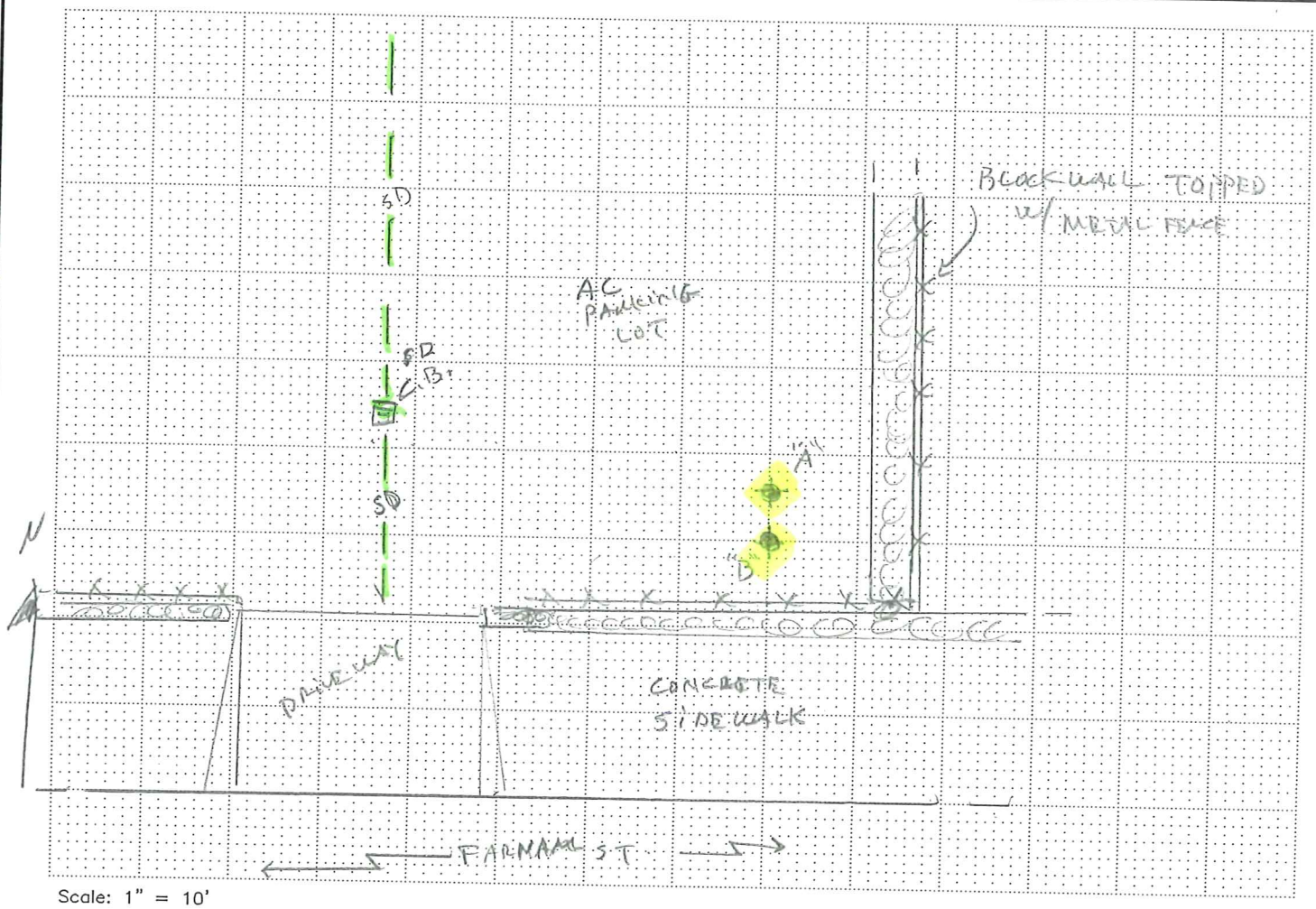
Procedure:
- _ EMC (Conduction)
- ✓ EMI (Induction)
- ✓ Ambient
- ✓ GPR

Surface Conditions:
- _ Wet
- ✓ Dry
- _ other

REMARKS

SD CB - STORM DRAIN CATCH BASIN

PERSONNEL: D. Bissini	CLIENT: Broadbent & Associates
JOB: 13-1034.13 DATE: 10-24-13	LOCATION: Former ARCO 402, 1450 Fruitvale Ave, Oakland, CA
NORCAL GEOPHYSICAL CONSULTANTS INC.	BORING: SG-2A & SG-2B



Scale: 1" = 10'

EXPLANATION

- Original Boring Location
- Final Boring Location
- Existing Well Location
- GPR Traverse
- OR — Localized GPR Anomaly
- Utility Alignment

Utilities

- _ T (Telephone, Comm.)
- _ E (Electric)
- _ NG (Natural Gas)
- _ CA (Compressed Air)
- _ STM (Steam)
- _ SS (Sanitary Sewer)
- ✓ SD (Storm Drain)
- _ W (Water)
- _ FS (Fire Supression)
- _ UU (Undifferentiated Utility)

Surface

- ✓ RC (Reinforced Concrete)
- ✓ AC (Asphalt)
- ✓ C (Concrete)
- _ Soil
- _ Gravel
- _ other

NOTES

Equipment:
- ✓ GPR (Radar)
- ✓ RD 4000
- _ M Scope
- _ other

Procedure:
- _ EMC (Conduction)
- ✓ EMI (Induction)
- ✓ Ambient
- ✓ GPR

Surface Conditions:
- _ Wet
- ✓ Dry
- _ other

REMARKS

SD
CB — STORM DRAIN CATCH BASIN

PERSONNEL: D. Bissiri

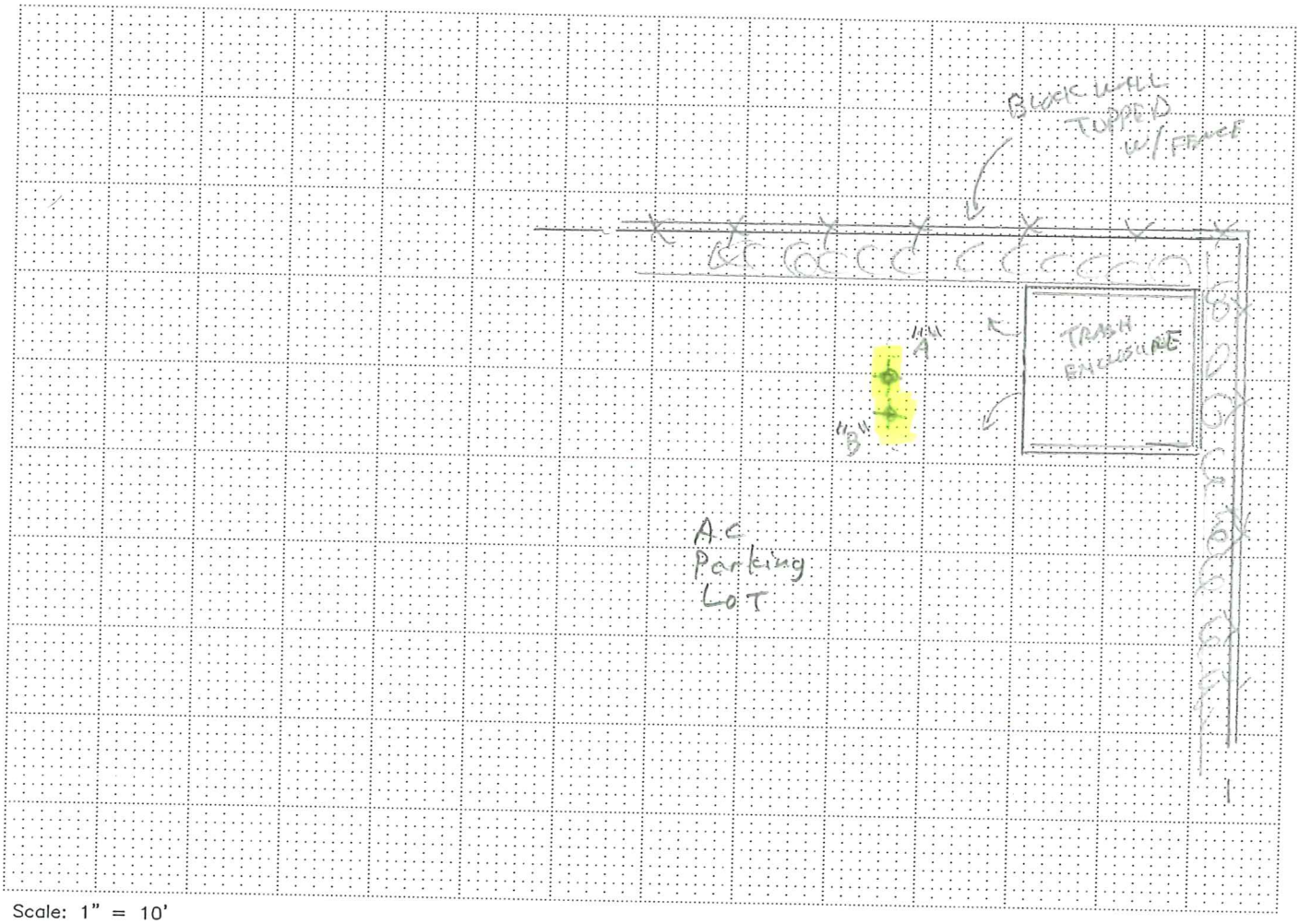
JOB: 13-1034.13 | DATE: 10-24-13

NORCAL GEOPHYSICAL CONSULTANTS INC.

CLIENT: Broadbent & Associates

LOCATION: Former ARCO 402
1450 Fruitvale Ave, Oakland, Calif

BORING: SG-3A & SG-3B



Scale: 1" = 10'

EXPLANATION

- Original Boring Location
- Final Boring Location
- Existing Well Location
- GPR Traverse
- OR — Localized GPR Anomaly
- Utility Alignment

Utilities

- _ T (Telephone, Comm.)
- _ E (Electric)
- _ NG (Natural Gas)
- _ CA (Compressed Air)
- _ STM (Steam)
- _ SS (Sanitary Sewer)
- _ SD (Storm Drain)
- _ W (Water)
- _ FS (Fire Supression)
- _ UU (Undifferentiated Utility)

Surface

- RC (Reinforced Concrete)
- AC (Asphalt)
- _ C (Concrete)
- _ Soil
- _ Gravel
- _ other

NOTES

Equipment:
- GPR (Radar)
- RD 4000
- M Scope
- _ other

Procedure:
- _ EMC (Conduction)
- _ EMI (Induction)
- Ambient
- _ GPR

Surface Conditions:
- _ Wet
- Dry
- _ other

REMARKS

PERSONNEL: D. Bissiri

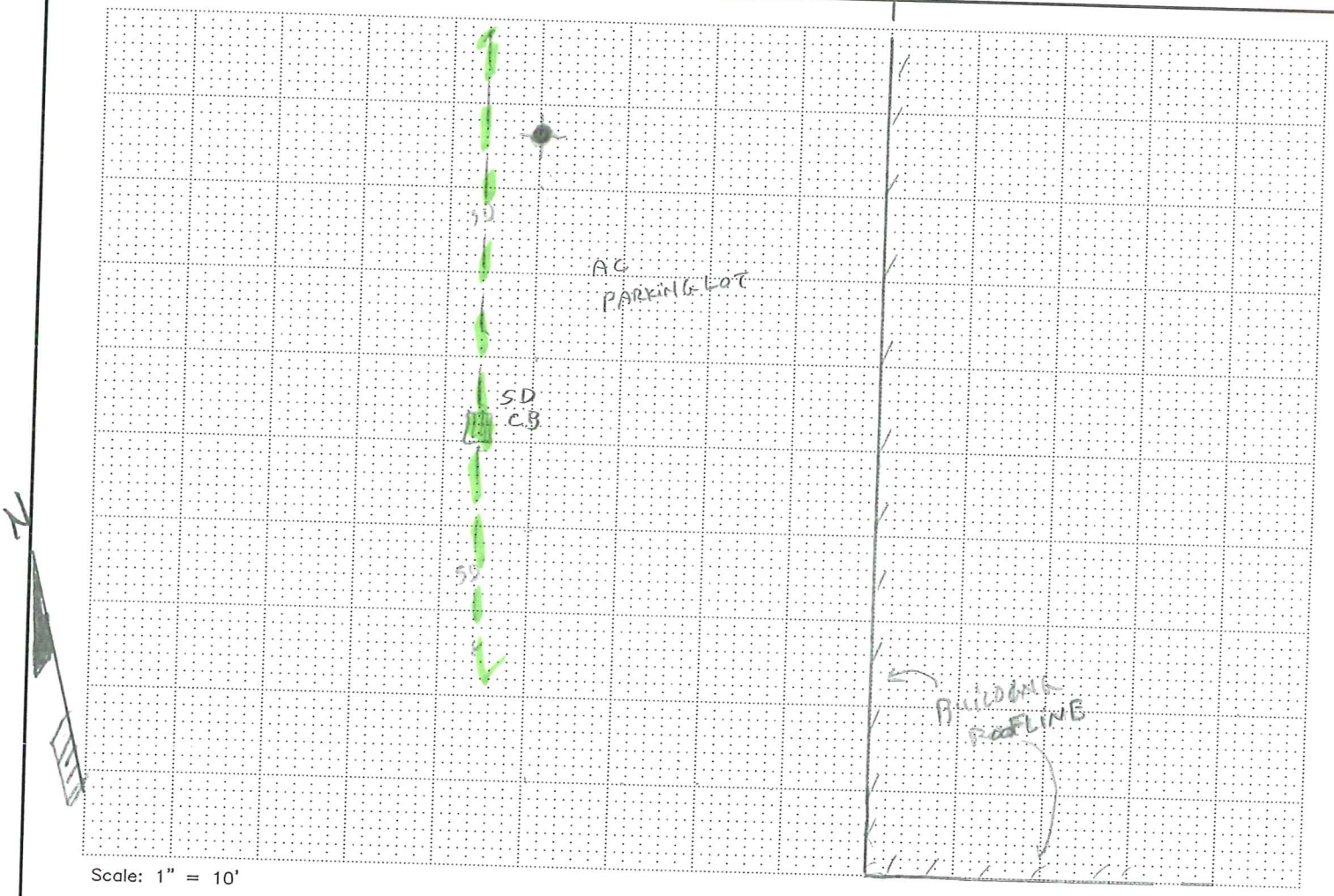
JOB: 13-1034.13 | DATE: 10-24-13

NORCAL GEOPHYSICAL CONSULTANTS INC.

CLIENT: Broadbent & Associates

LOCATION: Former ARCO 402
1450 Fruitvale Ave, Oakland, Calif.

BORING: MW-4



Scale: 1" = 10'

EXPLANATION

- Original Boring Location
- Final Boring Location
- Existing Well Location
- GPR Traverse
- OR — Localized GPR Anomaly
- Utility Alignment

Utilities

- _ T (Telephone, Comm.)
- _ E (Electric)
- _ NG (Natural Gas)
- _ CA (Compressed Air)
- _ STM (Steam)
- _ SS (Sanitary Sewer)
- ✓ SD (Storm Drain)
- _ W (Water)
- _ FS (Fire Supression)
- _ UU (Undifferentiated Utility)

Surface

- _ RC (Reinforced Concrete)
- ✓ AC (Asphalt)
- _ C (Concrete)
- _ Soil
- _ Gravel
- _ other

NOTES

Equipment:
- ✓ GPR (Radar)
- _ RD 4000
- _ M Scope
- _ other

Procedure:
- _ EMC (Conduction)
- ✓ EMI (Induction)
- _ Ambient
- ✓ GPR

Surface Conditions:
- _ Wet
- ✓ Dry
- _ other

REMARKS

SD CB – STORM DRAIN CATCH BASIN

PERSONNEL: D. Bissiri

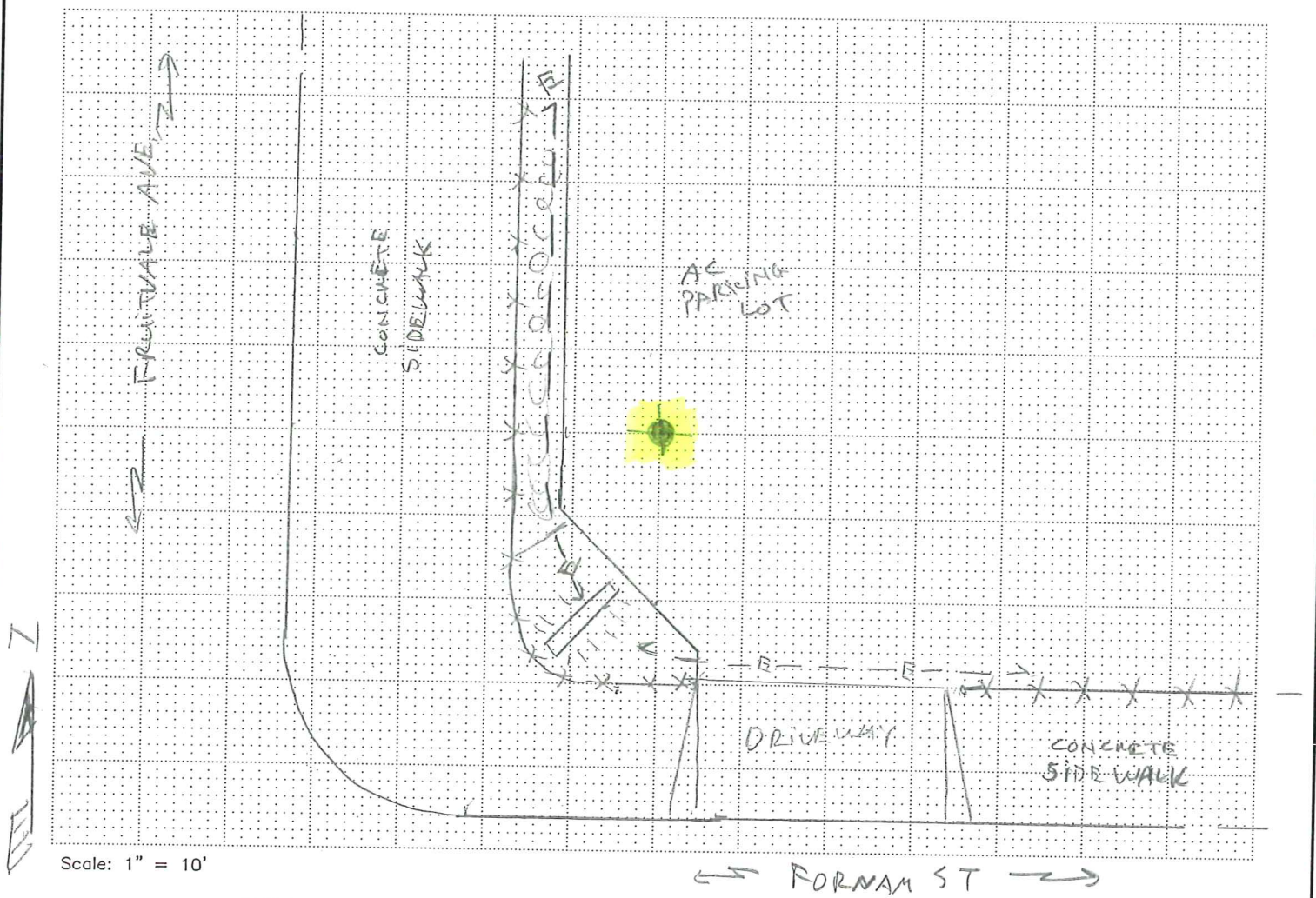
JOB: 13-1034.13 | DATE: 10-24-13

NORCAL GEOPHYSICAL CONSULTANTS INC.

CLIENT: Broadbent & Associates

LOCATION: Former ARCO 402
1450 Fruitvale Ave, Oakland, Calif

BORING: MW-5



Scale: 1" = 10'

EXPLANATION

- Original Boring Location
- Final Boring Location
- Existing Well Location
- GPR Traverse
- OR → Localized GPR Anomaly
- Utility Alignment

Utilities

- _ T (Telephone, Comm.)
- E (Electric)
- _ NG (Natural Gas)
- _ CA (Compressed Air)
- _ STM (Steam)
- _ SS (Sanitary Sewer)
- _ SD (Storm Drain)
- _ W (Water)
- _ FS (Fire Supression)
- _ UU (Undifferentiated Utility)

Surface

- RC (Reinforced Concrete)
- AC (Asphalt)
- C (Concrete)
- _ Soil
- _ Gravel
- _ other

NOTES

Equipment:
- GPR (Radar)
- RD 4000
- M Scope
- _ other

Procedure:
- _ EMC (Conduction)
- _ EMI (Induction)
- Ambient
- GPR

Surface Conditions:
- _ Wet
- Dry
- _ other

REMARKS

PERSONNEL: D. Bissiri

JOB: 13-1034.13 | DATE: 10-24-13

NORCAL GEOPHYSICAL CONSULTANTS INC.

CLIENT: Broadbent & Associates

LOCATION: Former ARCO 402
1450 Fruitvale Ave, Oakland, Calif

BORING: MW-6

Scale: 1" = 10'

EXPLANATION

- Original Boring Location
- Final Boring Location
- Existing Well Location
- GPR Traverse
- OR — Localized GPR Anomaly
- Utility Alignment

Utilities

- _ T (Telephone, Comm.)
- _ E (Electric)
- _ NG (Natural Gas)
- _ CA (Compressed Air)
- _ STM (Steam)
- _ SS (Sanitary Sewer)
- _ SD (Storm Drain)
- _ W (Water)
- _ FS (Fire Supression)
- _ UU (Undifferentiated Utility)

Surface

- _ RC (Reinforced Concrete)
- _ AC (Asphalt)
- _ C (Concrete)
- _ Soil
- _ Gravel
- _ other

NOTES

Equipment:
- _ GPR (Radar)
- _ RD 4000
- _ M Scope
- _ other

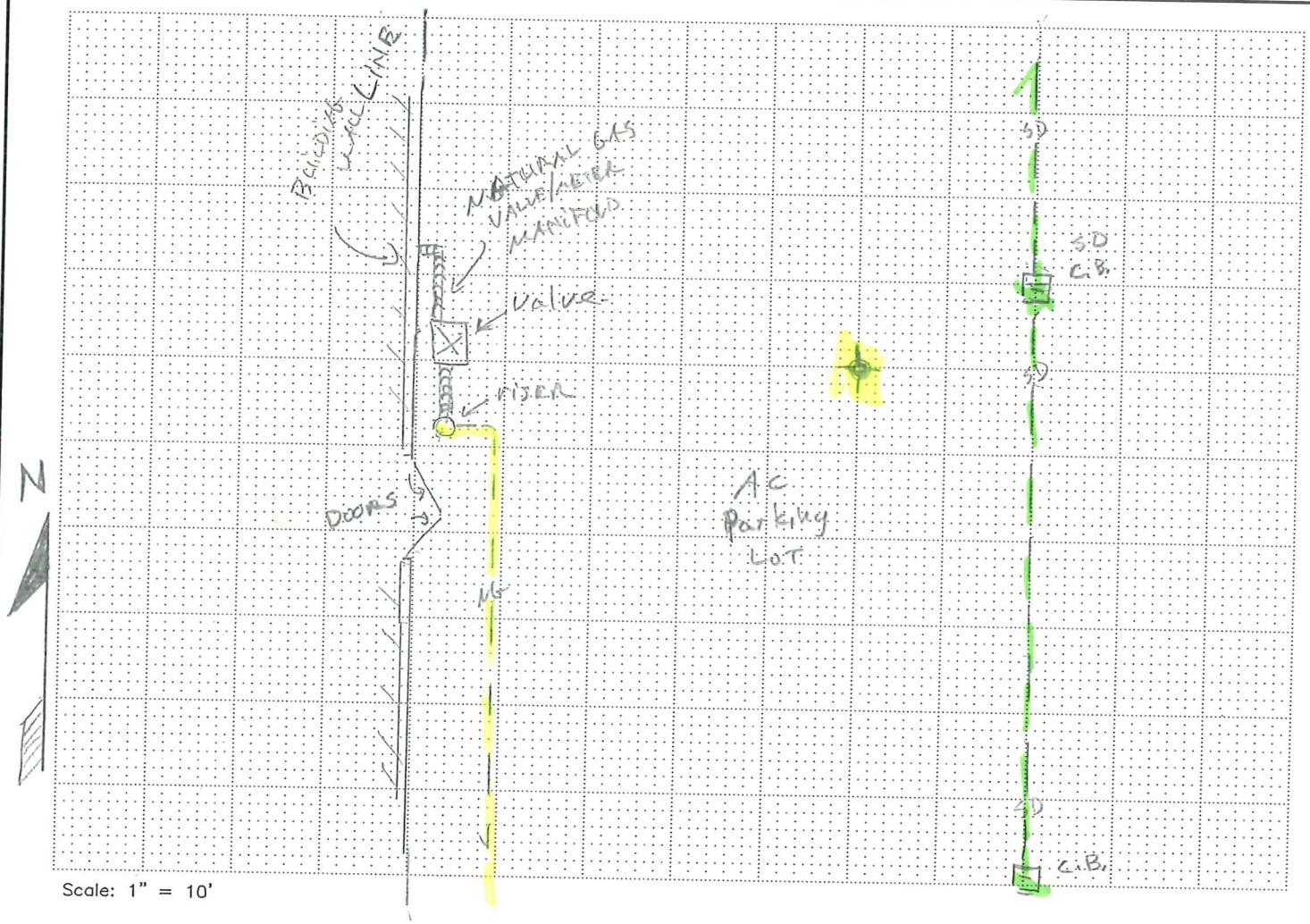
Procedure:
- _ EMC (Conduction)
- _ EMI (Induction)
- _ Ambient
- _ GPR

Surface Conditions:
- _ Wet
- _ Dry
- _ other

REMARKS

SD CB – Storm Drain Catch Basin

PERSONNEL: D. Bissell	CLIENT: Broadbent & Associates
JOB: 13-1034.13 / DATE: 10-24-13	LOCATION: Former ARCO 402, 1450 Fruitvale Ave, Oakland Calif.
NORCAL GEOPHYSICAL CONSULTANTS INC.	BORING: MW-7



EXPLANATION

- Original Boring Location
- Final Boring Location
- Existing Well Location
- GPR Traverse
- OR — Localized GPR Anomaly
- Utility Alignment

Utilities

- _ T (Telephone, Comm.)
- _ E (Electric)
- _ NG (Natural Gas)
- _ CA (Compressed Air)
- _ STM (Steam)
- _ SS (Sanitary Sewer)
- _ SD (Storm Drain)
- _ W (Water)
- _ FS (Fire Supression)
- _ UU (Undifferentiated Utility)

Surface

- _ RC (Reinforced Concrete)
- _ AC (Asphalt)
- _ C (Concrete)
- _ Soil
- _ Gravel
- _ other

NOTES

Equipment:
- _ GPR (Radar)
- _ RD 4000
- _ M Scope
- _ other

Procedure:
- _ EMC (Conduction)
- _ EMI (Induction)
- _ Ambient
- _ GPR

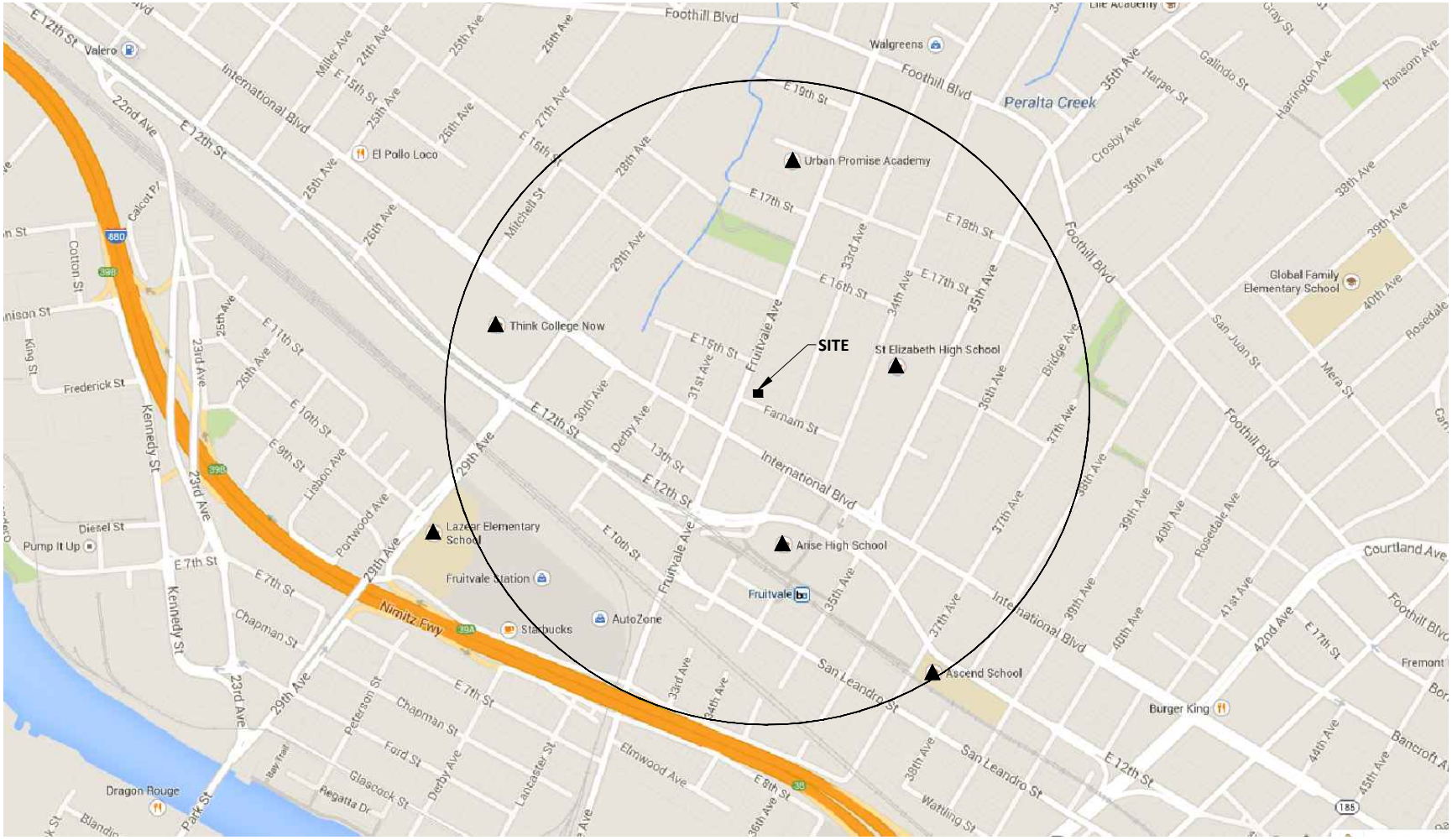
Surface Conditions:
- _ Wet
- _ Dry
- _ other

REMARKS

SD – STORM DRAIN
CB – CATCH BASIN

Appendix D

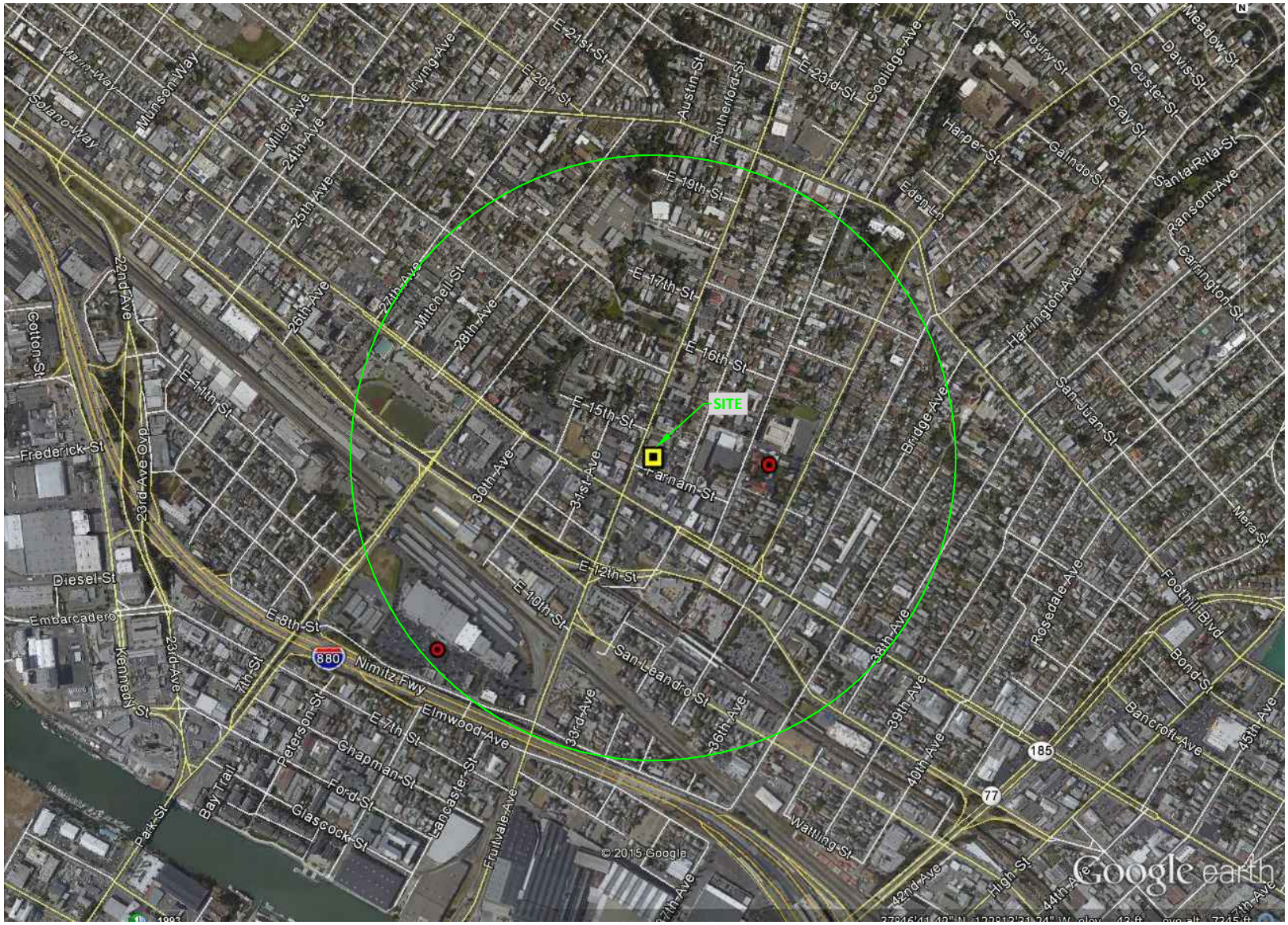
Sensitive Receptor Survey Table and Aerial Maps



N

▲ School Locations

0 1000 2000 SCALE (ft)	BROADBENT 4820 Business Center Drive, Suite 110 Fairfield, CA 94534 Project No.: 08-88-602 Date: 02/25/2014	ARCO Former Station № 402 1450 Fruitvale Avenue Oakland, California	Schools Within 2,000 Feet Radius	Drawing D



Well Locations

N

0 1000 2000

SCALE (ft)

BROADBENT
4820 Business Center Drive, Suite 110
Fairfield, CA 94534
Project No.: 08-88-602 Date: 02/25/2014

ARCO Former Station № 402
1450 Fruitvale Avenue
Oakland, California

Outside Well Locations

Drawing
D

Appendix E

Soil Analytical & Soil Vapor Tables

Table 1
Soil Analytical Results
November 2013
Former ARC Station No. 402
1450 Fruitvale Avenue, Oakland, California

Well Identification	Soil Sample Depth (feet bgs)	Date Collected	GRO (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes* (mg/kg)	MTBE (mg/kg)	ETBE (mg/kg)	TAME (mg/kg)	TBA (mg/kg)	DIPE (mg/kg)	EDB (mg/kg)	Ethanol (mg/kg)	Naphthalene (mg/kg)
MW-4	3.5	11/14/2013	ND<0.39	ND<0.0010	ND<0.0010	ND<0.0010	ND<0.0020	ND<0.0020	ND<0.0020	ND<0.0020	ND<0.051	ND<0.0020	ND<0.0010	ND<0.20	ND<0.0020
MW-4	6.5	11/14/2013	ND<0.40	ND<0.00095	ND<0.00095	ND<0.00095	ND<0.0019	ND<0.0019	ND<0.0019	ND<0.0019	ND<0.047	ND<0.0019	ND<0.00095	ND<0.19	ND<0.0019
MW-4	7.5	11/18/2013	0.99	0.0095	0.0057	0.26	0.06	ND<0.0052	ND<0.0052	ND<0.0052	ND<0.13	ND<0.0052	ND<0.0026	ND<0.52	0.21
MW-4	19.5	11/18/2013	1.8	ND<0.10	ND<0.10	0.66	ND<0.20	ND<0.25	ND<0.25	ND<0.25	ND<5.0	ND<0.25	ND<0.10	ND<15	ND<0.25
MW-5	7.5	11/18/2013	ND<0.37	ND<0.0010	ND<0.0010	ND<0.0010	ND<0.0020	ND<0.0020	ND<0.0020	ND<0.0020	ND<0.050	ND<0.0020	ND<0.0010	ND<0.20	ND<0.0020
MW-5	15.5	11/18/2013	1.3	ND<0.00099	ND<0.00099	ND<0.00099	ND<0.0020	ND<0.0020	ND<0.0020	ND<0.0020	ND<0.050	ND<0.0020	ND<0.00099	ND<0.20	ND<0.0020
MW-5	19.5	11/18/2013	ND<0.39	ND<0.00099	ND<0.00099	ND<0.00099	ND<0.0020	ND<0.0020	ND<0.0020	ND<0.0020	ND<0.050	ND<0.0020	ND<0.00099	ND<0.20	ND<0.0020
MW-6	7.5	11/19/2013	ND<0.38	ND<0.00099	ND<0.00099	ND<0.00099	ND<0.0020	ND<0.0020	ND<0.0020	ND<0.0020	ND<0.049	ND<0.0020	ND<0.00099	ND<0.20	ND<0.0020
MW-6	15.5	11/19/2013	16	ND<0.0010	ND<0.0010	ND<0.0010	ND<0.0020	ND<0.0020	ND<0.0020	ND<0.0020	ND<0.050	ND<0.0020	ND<0.0020	ND<0.20	ND<0.0020
MW-7	7.5	11/19/2013	ND<0.38	ND<0.00099	ND<0.00099	ND<0.00099	ND<0.0020	ND<0.0020	ND<0.0020	ND<0.0020	ND<0.049	ND<0.0020	ND<0.00099	ND<0.20	ND<0.0020
MW-7	15.5	11/19/2013	39	ND<0.00099	ND<0.00099	0.0053	ND<0.0020	ND<0.0020	ND<0.0020	ND<0.0020	ND<0.050	ND<0.0020	ND<0.00099	ND<0.20	ND<0.0020
LTCP Criteria - 0 to 5 feet bgs			NA	**8.2**	NA	**89**	NA	NA	NA	NA	NA	NA	NA	NA	**45**
LTCP Criteria - 5 to 10 feet bgs			NA	**12**	NA	**134**	NA	NA	NA	NA	NA	NA	NA	NA	**45**
LTCP Criteria -Utiliity Worker			NA	**14**	NA	**314**	NA	NA	NA	NA	NA	NA	NA	NA	**219**

Notes:

feet bgs = feet below ground surface
mg/kg = milligrams per kilogram
GRO = gasoline range organics (C6-C12)
MTBE = methyl tert-butyl ether
ETBE = ethyl tert-butyl ether
TAME = tert-amyl methyl ether
TBA = tert butyl alcohol
DIPE = di isopropyl ether
1,2-DCA = 1,2-dichloroethane
EDB = 1,2-dibromomethane

ND<X.XX = not detected above reporting limit of X.XX
NA = not analyzed
LTCP = Low Threat UST Closure Policy, California State Water Resources Control Board (SWRCB), August 17, 2012
LTCP Criteria listed in Table 1, page 8 of the LTCP for a commercial/industrial exposure scenario

Table 4
Soil Vapor Analytical Results
December 17, 2013
Former ARC Station No. 402
1450 Fruitvale Avenue, Oakland, California

Soil Vapor Probe Identification	Probe Sample Depth (feet bgs)	Date Collected	GRO ($\mu g/m^3$)	Benzene ($\mu g/m^3$)	Toluene ($\mu g/m^3$)	Ethylbenzene ($\mu g/m3$)	Total Xylenes* ($\mu g/m^3$)	MTBE ($\mu g/m^3$)	Naphthalene ($\mu g/m^3$)	Carbon Dioxide (%)	Methane (%)	Oxygen (%)
SG-1A	3-3.5	12/17/2013	ND<8,100	ND<13	ND<15	ND<17	ND<17	ND<14	ND<21	1.7	0.00035	18.0
SG-1B	5-5.5	12/17/2013	46,000	ND<13	ND<15	ND<17	ND<17	ND<14	ND<21	1.1	0.0042	8.0
SG-2A	3-3.5	12/18/2013	ND<8,000	ND<13	ND<15	ND<17	ND<17	ND<14	ND<21	<0.98	0.0038	28.0
SG-2B	5-5.5	12/18/2013	ND<7,800	ND<13	ND<15	ND<17	ND<17	ND<14	ND<21	1.1	0.00076	20.0
SG-3A	3-3.5	12/17/2013	ND<8,000	ND<13	ND<15	ND<17	ND<17	ND<14	ND<21	1.0	0.00029	19.0
SG-3B	5-5.5	12/17/2013	ND<7,600	ND<13	ND<15	ND<17	ND<17	ND<14	ND<21	2.1	0.00027	18.0
ESLs			**2,500,000**	**420.0**	**1,300,000**	**4,900**	**440,000**	**47,000**	**360**	NA	NA	NA

Notes:

feet bgs = feet below ground surface
$\mu g/m^3$= micrograms per cubic meter
GRO = gasoline range organics (C6-C12)
MTBE = methyl tert-butyl ether

ND<X.XX = not detected above reporting limit of X.XX $\mu g/m^3$
NA = not analyzed
ESLs - Tier 1 Environmental Screening Levels, *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater,* California Regional Water Quality Control Board (CRWQCB), Interim Final, December 2013. Commercial/Industrical exposure scenario; Table E-2