November 14, 2011

Ms. Karel Detterman
Alameda County Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502

Subject: **Perjury Statement and Report Transmittal**

1600 – 1630 Park Street
Alameda, California 94501
AEI Project No. 298931
ACEH RO#0000008

Dear Ms. Detterman:

I declare under penalty of perjury, that the information and/or recommendations contained in the attached report for the above-referenced site are true and correct to the best of my knowledge.

If you have any questions or need additional information, please do not hesitate to call me at (510) 523-1925 or Mr. Peter McIntyre at AEI Consultants, (925) 746-6004.

Sincerely,

John Buestad
President

JB/pm

Attachment

cc: Mr. Peter McIntyre, AEI Consultants, 2500 Camino Diablo, Walnut Creek, CA 94597

AEI Consultants
Environmental & Engineering Services
2500 Camino Diablo, Walnut Creek, CA 94597
Tel: 925.746.6000 Fax: 925.746.6099

November 14, 2011

Alameda County Environmental Health Department
Attn: Ms. Karel Detterman
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502

Subject: **ICAP Comment Letter Response and Pilot Test Workplan Details**
1630 Park Street, Alameda, CA
AEI Project No. 298931
ACEHD File No. RO0000008

Dear Ms. Karel Detterman:

AEI Consultants (AEI) has prepared this document as an addendum to the Interim Corrective Action Plan (ICAP) dated September 28, 2011 and to address the comments outlined in the Alameda County Environmental Health Department (ACEHD) letter dated November 4, 2011 (hereinafter referred to as the "letter"). AEI has been retained by Foley Street Investments, LLC, owner and developer of the site, to provide environmental engineering and consulting services relating to the above referenced fuel leak case. Responses to items in the letter are presented below. The reader is referred to the above referenced letter and ICAP document for details and original comments.

1) Request for Information: The June 2011 *Phase I Environmental Site Assessment* (ESA) prepared by AEI for the subject site and several surrounding properties was uploaded to the ACEHD web portal on November 10, 2011. The *Phase II Subsurface Investigation Report*, August 16, 2011, was uploaded to the web portal several months ago.

2) Pilot Test Workplan: The letter requests additional justification as to the rationale for selection of High Vacuum Dual Phase Extraction (HVDPE) for further evaluation along with additional details on the methods of the pilot testing that will be performed at the site.

a) As outlined in ICAP, several active remedial options were thoroughly evaluated as possible alternatives, including HVDPE, excavation and dewatering, and in-situ chemical oxidation (ISCO) via ozone sparging coupled with vapor extraction for vapor control. The objective of remedial action prior to development of the property is to effect sufficient mass removal such that property development can start on June 1, 2012.

Two important criteria in the selection of a remedial alternative for further evaluation are likely costs and likelihood of success of sufficient hydrocarbon mass removal. Both of these criteria have potentially significant unknowns to be considered. As stated in the ICAP, excavation and dewatering is generally considered an option with a high likelihood of success for mass removal. However, based on conditions at the site, the costs of excavation have a higher than normal likelihood of increasing significantly. Firstly, the majority of impacted soils is within the capillary fringe and extends to depths of approximately 11 to 12 feet, and upwards of 15 feet toward the down-gradient side of the property (GP11). Depth to water in June 2011 in existing monitoring wells and in soil borings in July was approximately 7.5 to 8.5 feet bgs. This corresponds to excavating to a minimum of 4 feet to upwards of 7 feet below the water table. Secondly, due to the sandy soil throughout the site and depth of the excavation below the water table, additional shoring for most or all of the excavation sidewalls could be needed. These costs could add significantly to those estimated. In the event that the HVDPE pilot test is not successful, the geotechnical investigation and engineering to determine the shoring and dewatering needs, and expense for these studies, may be undertaken if excavation is to be further considered.

The third option considering, ISCO via ozone sparging, is a viable alternative. One concern with this approach is the possibility of generating potentially hazardous and recalcitrant byproducts in the subsurface, notably soluble hexavalent Chromium (Cr VI) and other metals caused by the oxidation of naturally occurring metals in site soils. Although this does not occur at all sites, based on communication with ACEHD staff (Barbara Jakub, summer 2011), Cr VI has created a significant secondary pollutant problem at a site in Alameda at which similar soils exists. Due to the need for extensive laboratory bench scale and field pilot testing to evaluate the possibility of byproduct generation along with the standard pilot testing for system design, this option is also being held in reserve pending the outcome of HVDPE pilot testing.

While we agree with ACEHD that HVDPE may or may not be successful and/or the time to adequately abate the remaining petroleum source material may be longer than estimated, the most reliable way to evaluate it's likelihood for success is to undertake a pilot test. Until pilot testing has been completed, estimates for the length of treatment time are speculative. Upon completion of the HVDPE pilot test, a FS/CAP will be prepared with the information requested in comment 2a of the letter.

b) Pilot Test Details

i. Extracted vapors will be treated with an onsite propane fired thermal oxidizer. The vapor abatement device operated by CalClean, Inc. has a various locations permit from the Bay Area Air Quality Management District (BAAQMD). Groundwater is removed from the effluent stream in a knock-out tank from which it is pumped into a temporary holding tank. Groundwater will treated through three (3) carbon canisters prior to

discharge to the sanitary sewer. A permit from East Bay Municipal Utility District (EBMUD) has been obtained by CalClean. Appropriate samples will be obtained from sampling ports along the treatment train and analyzed in accordance with EBMUD permit conditions prior to discharge. Copies of the BAAQMD and EBMUD permits can be provided by CalClean upon request.

ii. The dual phase extraction (DPE) wells will be constructed such that the screen interval crosses the vertical extent of impacted soil. This corresponds to a depth of approximately 6-7 feet bgs to 12 to 13 feet bgs in the pilot test target area. This corresponds to approximately 1 foot above the water table which is expected to be sufficient to allow adequate air flow through the targeted interval once water levels drop due to water extraction. The air sparge well will be constructed such that the top of the screen interval will be approximately 5 to 8 feet below the bottom of the impacted soil. The screen will be no longer than 5 feet, corresponding to a screen interval of approximately 18 to 23 feet bgs. The exact well screen intervals of the wells will be determined based on continuous logging of the borings by the professional geologist onsite during installation.

    The location of the DPE wells were selected to be in areas with high concentrations of gasoline petroleum hydrocarbons in soil and groundwater and to be close enough to each other to measure changes in water levels and induced vacuum to allow for estimation of effective radius of influence. DPE-1 will be approximately 15 feet from PDE-2 and 20 feet from DPE-3; DPE-2 and DPE-3 will be approximately 10 feet apart. DPE-1 will be approximately 35 feet from MW-3 (located down-gradient) and approximately 18 feet from MW-2 (cross-gradient) which will allow for water level measurements from these 2 monitoring wells for estimation of drawdown. The former UST excavation was lined with plastic sheeting and although shortcutting of airflow through an excavation can be a concern, the plastic sheeting will reduce the likelihood of shortcutting. In addition, the site is paved throughout the test area, limiting but not eliminating, the likelihood of significant shortcutting to the surface. The AS well was placed beneath the area of highly impacted soil and at appropriate distances from the extraction wells such that changes in pressure could be monitored during air acceptance test and to assess whether increased hydrocarbon recovery rates occur during sparging.

iii. It is planned that individual well step test will be performed on at least 2 but ideally each of the three wells, depending on field results. Constant vacuum testing will be performed on all wells following step test evaluation. During the step test and constant operating conditions, hydrocarbon recovery rates (concentration and flow rates) as well as induced vacuum and water level changes will be observed. Observed behavior may include a rapid decline in recovery, slower asymptotic decline, or relatively constant or increasing recovery over the test period. If declines are observed during individual well tests, the test would

proceed to the following well. Once individual well test are completed, all wells will be extracted from at the pre-determined apparent optimal settings to dewater the impacted soils and evaluate hydrocarbon recovery rates over the targeted treatment area. This phase of testing is expected to run for a period of at least 5 days to allow for adequate dewatering, up to a total pilot test duration of 30 days. If during this composite test, hydrocarbon recovery declines are observed, operating parameters may be adjusted (such as stinger depth, well-head bleed air, applied vacuum). If recovery rates do not increase after such adjustments, the test may cease for a few hours to a few days to allow for rebound. In the event that very low hydrocarbon recovery is observed throughout the test, very low vapor flow rates are observed, or dewatering cannot be achieved, and after careful consideration of the data, the pilot test may be terminated. Below is a summary table of wells and monitoring points that will be utilized to gather data during individual wells tests.

Extraction Well	Test Well	Data and purpose
DPE-1	DPE-2	Water levels and induced vacuum
	DPE-3	Water levels and induced vacuum
	MW-2	Water levels and induced vacuum
	MW-3	Water levels and induced vacuum
	VP-1	Induced vacuum
	VP-2	Induced vacuum
	VP-3	Induced vacuum
DPE-2	DPE-1	Water levels and induced vacuum
	DPE-3	Water levels and induced vacuum
	MW-1	Water levels and induced vacuum
	MW-2	Water levels and induced vacuum
	VP-1	Induced vacuum
	VP-2	Induced vacuum
	VP-3	Induced vacuum
DPE-3	DPE-1	Water levels and induced vacuum
	DPE-2	Water levels and induced vacuum
	MW-1	Water levels and induced vacuum
	MW-2	Water levels and induced vacuum
	VP-1	Induced vacuum
	VP-2	Induced vacuum
	VP-3	Induced vacuum

The three vapor monitoring probes (VP-1 to VP-3) noted in the above table are shown on revised Figure 9 (attached). These probes will be installed prior to the pilot test. Each probe will be installed in small diameter geoprobe type borings to a depth approximately 5 feet (just above the capillary fringe) and will be constructed of a ¼ inch stainless steel or poly tubing with an approximately 6 inch screen on the bottom. The annulus around and to approximately 6 inches above the screen will be filled with sand pack, above which the temporary probe will be completed with a hydrated bentonite seal to the surface. The probes will be used to collect induced vacuum measurements at distances of 5 and 10 feet (VP-1 and VP-2, respectively) from DPE-1 and across the former tank hold (VP-3) to evaluate possible effects of the backfill material on induced vacuums. Upon completion of the pilot test, it is planned that

the temporary probes will be removed, unless further usefulness is identified.

iv. The step test will be performed on at least 2 but ideally all 3 wells to evaluate the affect on mass recovery rates of increasing applied vacuum. Each step of the test will include operating the system connected to only one wells and varying applied vacuum levels. Tentatively, the applied vacuum increments will be approximately 10 inches of mercury (in. Hg), 20 in. Hg, and 25 in. Hg (which is the practical applied vacuum maximum). Each step will typically last 2 to 4 hours during which air flow, organic vapor concentrations (measured with a flame ionizing detector), applied vacuum, and water flow, will be measured at regular intervals (every 15 to 30 minutes). As the effectiveness of DPE is dependent on drawing down water levels within the well being used, an appropriate stinger depth will be evaluated prior to the step test by first lowering the stinger incrementally until air flow begins and water removal rates appear to stabilize. Air and water flow rates during HVPDE testing are controlled by primary three operational parameters (applied vacuum, stinger depth, and well-head bleed air), field judgment will be required to find the optimum stinger depth and bleed air to hold constant during the step test. Once optimum settings have been identified, extraction will continue on the individual well for 6 to 24 hours, depending on results, to monitor hydrocarbon recovery over time. During the individual well step tests, induced vacuum will be measured at other extraction wells and water level measurements collected before, during, and after the step test in nearby wells.

v. It is expected that 2 to 3 days may be required to perform the sequence of individual well step tests. Once completed and optimum applied vacuum and individual well stinger depths are determined, constant rate operation is planned for at least one of the wells (DPE-1) to gather data for aquifer testing and estimation of cone of depression. To evaluate drawdown, prior to extraction (and prior to step testing) water levels will be measured in all wells. Water levels in nearby wells will be measured with a manual water level meter; in at least 2 monitoring wells (MW-1, MW-2 and/or MW-3) pressure transducer dataloggers (MiniTroll™ or similar) will be installed to collect detailed water level data.

vi. During the pilot test, the following information will be collected: applied vacuum, stinger depth, well head vacuum, water flow rates, air flow rates, total hydrocarbon concentrations in extracted vapor, water levels and induced vacuum in nearby wells and monitoring points. The pilot test reporting will include tabular and graphical descriptions of the data. Stinger depths will be determined in the field for each well based on water flow rates, vapor flow rates, induced vacuums, and hydrocarbon recovery rates.

vii. Vapor samples will be collected from the treatment train from a sampling port located between the vacuum pump and prior to the abatement device (thermal oxidizer). Samples will be field analyzed with a flame

ionizing detector (FID). During the step test, FID measurements will be collected at approximately 30 minute intervals (or shorter), including at the beginning and end of the test; selected samples will also be collected into Tedlar bags for laboratory analysis for TPH-g, MTBE, and BTEX by EPA method 8015 and 8021 (or 8260) to calibrate FID readings. At the same location in the treatment train, vapor flow rates are measured with an orifice flow tube such that hydrocarbon recovery rates can be calculated.

viii. A groundwater monitoring event will be conducted prior to mobilization for the pilot test to establish pre-extraction conditions. A quarterly monitoring program will be initiated thereafter. Dissolved oxygen monitoring (along with temperature, conductivity, and pH) using a flow through cell will be performed during purging of the wells. During monitoring, the wells will be purged and samples collected in accordance with standard practices; samples will be analyzed for TPH-g/d/mo by EPA method 8015 and for MBTE and BTEX by EPA method 8021. Based on the results of the June 2011 samples analyses, which did not detected selected fuel additives, analyses for these constituents is not planned. Metals analyses is not currently planned, however if ACEHD has information justifying their analyses, they can be added to the analytical suite. Extracted groundwater will be periodically sampled during the pilot test to evaluate mass removed in the dissolved phase (though typically a small fraction of the overall mass removal rate); such samples will be collected from a sampling port located between the knock-out tank and prior to the storage tank. Extracted water samples will be analyzed for TPH-g/d/mo by EPA method 8015 and for MBTE and BTEX by EPA method 8021.

ix. The oxidizer will be located on mobile equipment to be placed outside of the building, reasonably close to the target treatment wells, along the northeastern wall of the existing building. Safe operating distance from the building, power lines, and other overhead obstructions will be maintained.

x. The soil volume (V) treated during the pilot test will be estimated upon completion of the pilot test and will be dependent on the effective radius of influence. Once the effective radius of influence is estimated, pore volume exchange rates (E) can be estimated by dividing the product of the effective porosity (ε) and treated volume (V) by the flow rate (Q) [$E=(\varepsilon V)/Q$]. The exchange rate and radius of influence will be utilized to determine optimum spacing for additional extraction wells (if HVDPE is deemed successful).

xi. As outlined in the ICAP, the full lateral extent of petroleum impacted soil has not been fully defined, specifically in a southerly and southeasterly direction from the former UST area. AEI recommended that additional characterization may be prudent to further define this data gap prior to final remedial option selecting and design. Approximately 1510 cubic yards of highly impacted soil was estimated in the ICAP, however this

volume estimate would be refined prior to remedial option selection once the extent of impact defined.

Based on the results of the 2008 investigation, impacted soil does extend beneath the sidewalk. Excavation would not be a feasible method to remove such soil. If HVDPE can achieve a sufficient effective radius of influence, petroleum mass beneath the sidewalk and street could be removed from wells located at the edge of the property. Alternatively, natural attenuation, localized chemical oxidation, and/or enhance bioremediation may be sufficient to reduce such concentrations in areas of impact to levels that are sufficiently protective of human health and the environment. Once the results of HVDPE pilot testing are evaluated, a consideration of offsite impacted soil and groundwater will be included in the FS/CAP.

c) Preferential Pathway Study: A preferential pathway study of utility lines and trenches will be conducted on and around the site as requested in the letter. The results will be evaluated for the potential for such underground features to affect the spread of contamination. In addition, a well survey will be conducted utilizing the resources referenced in the letter. These studies will be conducted concurrently with the pilot test such that this information can be utilized in a timely manner to assess the need for further investigation (if warranted) and to design a full-scale remedial approach.

d) Groundwater Monitoring Data: A copy of field data sheets from the June 23, 2011 groundwater monitoring conducted by AEI during environmental due diligence is attached to this addendum.

e) Data Presentation: The recommendations and information requested in this comment will be including in future reports to the extent that such presentations will provide useful insight into plume behavior and/or success of remedial efforts.

In the interest of time, AEI has been requested to install the proposed AS and DPE wells during the week of November 14. The HVDPE pilot test will likely be scheduled during that week to occur within the following several weeks. The ACEHD will be notified of the schedule for the pilot test once a schedule has been established, prior to which we welcome additional comments or questions regarding the pilot test or site conditions.

We appreciate your time and consideration in this matter. Please contact Peter McIntyre at 925-746-6004 or pmcintyre@aeiconsultants.com with addition questions or comments.

Sincerely,
AEI Consultants

Adrian Angel
Project Manager

Peter J. McIntyre, PG, REA
Sr. Vice President, Geologist

REGISTERED GEOLOGIST
PETER J. MCINTYRE
Exp. 5/31/12
No. 7702
STATE OF CALIFORNIA

Attachment: June 2011 Groundwater Monitoring Field Data Sheets
Revised Figure 9

DATE: 6-23-11

AEI CONSULTANTS
MONITORING WELL DEVELOPMENT LOG

PAGE: ____ OF: ____

Project Name: 297553
Location: 1630 Park Street, Alameda, CA
Project No.: 297553
Start Time: 1200
End Time: 1240

Technician: John Sigg
Project Manager: Bryan Campbell
Conditions: 70° / Clear
Development Method: Surging and pumping with a submersible pump

MONITORING WELL DATA

Well ID: MW-1
Well Diameter: 2 inches
Constructed Depth of Well: 20 feet
Screened Interval: 5 - 20 feet bgs
Slot Size: 0.020
Filter Pack Material/Size:
Depth of Well (feet): 20
Depth to Water (feet): 7.54

Well Volumes Purged:
Calculated Gallons Purged:
2" (0.16 gal/ft) <or> 4" (0.65 gal/ft)
Actual Volume Purged (gallons): 16
Free Product Present? NO
Free Product Thickness (feet):
Well Depth Before Development: 15.95
Well Depth After Development: 15.98

FIELD PARAMETERS MEASURED

Time	Volume Removed (gallons)	Temp (deg C)	pH	Conductivity (µS/cm)	DO (mg/L)	ORP (meV)	Appearance of Purge Water
1200	2						Brown
	4						LT Brn
	6						"
	8						Cloudy
	10						Clear
1215	12						"
1230	13	20.47	7.48	524	3.57	-45.1	"
	14	19.50	7.34	503	4.03	-60.9	"
	15	19.69	7.27	514	5.23	-62.7	"
1240	16	19.75	7.24	515	5.08	-53.8	"

COMMENTS (i.e., pumped dry, sample odor, well recharge time & percent, etc.)

1st 3 gal Sandy

Slight Sewer Smell

DATE: 6-23-11

AEI CONSULTANTS
MONITORING WELL DEVELOPMENT LOG

PAGE: ____ OF: ____

Project Name: 297553
Location: 1630 Park Street, Alameda, CA
Project No.: 297553
Start Time: 1045
End Time: 1140

Technician: JOHN SIGG
Project Manager: Bryan Campbell
Conditions: 65° / Clear
Development Method: Surging and pumping with a submersible pump

MONITORING WELL DATA

Well ID:	**MW-2**	Well Volumes Purged:	
Well Diameter:	2 inches	Calculated Gallons Purged: 2" (0.16 gal/ft) <or> 4" (0.65 gal/ft)	
Constructed Depth of Well:	20 feet		
Screened Interval:	5 - 20 feet bgs	Actual Volume Purged (gallons):	16
Slot Size:	0.020	Free Product Present?	NO
Filter Pack Material/Size:		Free Product Thickness (feet):	
Depth of Well (feet):	20	Well Depth Before Development:	18.16
Depth to Water (feet):	7.35	Well Depth After Development:	18.18

FIELD PARAMETERS MEASURED

Time	Volume Removed (gallons)	Temp (deg C)	pH	Conductivity (µS/cm)	DO (mg/L)	ORP (meV)	Appearance of Purge Water
1045	2						Brown
	4	Dry					
	6						Lt Brown
	8	Dry					Cloudy
	10						"
	11						Clear
1115	12						"
1130	13	19.64	7.48	663	4.28	-262.2	"
	14	19.73	7.67	650	3.05	-173.7	"
	15	19.71	7.63	647	4.17	-155.4	"
1140	16	19.72	7.60	641	4.86	-143.7	"

COMMENTS (i.e., pumped dry, sample odor, well recharge time & percent, etc.)

1st 2 gal Sandy

Slight Sewer Smell

DATE: 6-23-11

AEI CONSULTANTS
MONITORING WELL DEVELOPMENT LOG

PAGE: ____ OF: ____

Project Name: 297553
Location: 1630 Park Street, Alameda, CA
Project No.: 297553
Start Time: 0745
End Time: 0845

Technician: JOHN SIGG
Project Manager: Bryan Campbell
Conditions: 60° / Clear
Development Method: Surging and pumping with a submersible pump

MONITORING WELL DATA

Well ID:	MW-3	Well Volumes Purged:	
Well Diameter:	2 inches	Calculated Gallons Purged: 2" (0.16 gal/ft) <or> 4" (0.65 gal/ft)	
Constructed Depth of Well:	20 feet	Actual Volume Purged (gallons):	11
Screened Interval:	5 - 20 feet bgs	Free Product Present?	NO
Slot Size:	0.020	Free Product Thickness (feet):	
Filter Pack Material/Size:		Well Depth Before Development:	15.55
Depth of Well (feet):	20	Well Depth After Development:	15.58
Depth to Water (feet):	7.50		

FIELD PARAMETERS MEASURED

Time	Volume Removed (gallons)	Temp (deg C)	pH	Conductivity (µS/cm)	DO (mg/L)	ORP (meV)	Appearance of Purge Water
0745	2						BROWN
	3	DRY					LT BROWN
0800	4						BROWN
	6	DRY					LT BROWN
0815	7						CLOUDY
	8						CLEAR
0900	9	18.69	7.74	643	9.70	-91.9	11
	10	18.73	7.62	711	6.01	-93.9	11
	11	18.59	7.63	696	5.43	-101.8	11

COMMENTS (i.e., pumped dry, sample odor, well recharge time & percent, etc.)

SLIGHT SEWER SMELL

1ST 2 GALLONS SANDY

DATE: 6-23-11

AEI CONSULTANTS
MONITORING WELL DEVELOPMENT LOG

PAGE: ____ OF: ____

Project Name: 297553
Location: 1630 Park Street, Alameda, CA
Project No.: 297553
Start Time: 0940
End Time: 1025

Technician: JOHN SIGG
Project Manager: Bryan Campbell
Conditions: 65° / Clear
Development Method: Surging and pumping with a submersible pump

MONITORING WELL DATA

Well ID: MW-4
Well Diameter: 2 inches
Constructed Depth of Well: 23 feet
Screened Interval: 8 - 23 feet bgs
Slot Size: 0.020
Filter Pack Material/Size:
Depth of Well (feet): 23
Depth to Water (feet): 8.52

Well Volumes Purged:
Calculated Gallons Purged:
2" (0.16 gal/ft) <or> 4" (0.65 gal/ft)
Actual Volume Purged (gallons): 22
Free Product Present? NO
Free Product Thickness (feet):
Well Depth Before Development: 22.47
Well Depth After Development: 22.50

FIELD PARAMETERS MEASURED

Time	Volume Removed (gallons)	Temp (deg C)	pH	Conductivity (µS/cm)	DO (mg/L)	ORP (meV)	Appearance of Purge Water
0940	2						Brown
	4						"
	6						"
	8						LT Brn
	10						"
	12						Cloudy
	14						"
1000	16						Clear
1015	17	18.90	8.29	328	4.17	8.3	"
	18	18.91	7.80	334	7.67	-1.3	"
	19	18.86	7.78	336	3.81	-32.3	"
	20	18.90	7.79	322	8.67	-21.0	"
	21	18.91	7.79	321	8.45	-21.2	"
1025	22	18.90	7.80	322	8.57	-12.9	"

COMMENTS (i.e., pumped dry, sample odor, well recharge time & percent, etc.)

1ST 4 GAL SANDY

DATE: 6-23-11

AEI CONSULTANTS
MONITORING WELL DEVELOPMENT LOG

PAGE: ____ OF: ____

Project Name: 297553
Location: 1630 Park Street, Alameda, CA
Project No.: 297553
Start Time: 0630
End Time: 0730

Technician: John Sigg
Project Manager: Bryan Campbell
Conditions: 60° / clear
Development Method: Surging and pumping with a submersible pump

MONITORING WELL DATA

Well ID: MW-5
Well Diameter: 2 inches
Constructed Depth of Well: 22 feet
Screened Interval: 7 - 22 feet bgs
Slot Size: 0.020
Filter Pack Material/Size:
Depth of Well (feet): 22
Depth to Water (feet): 7.43

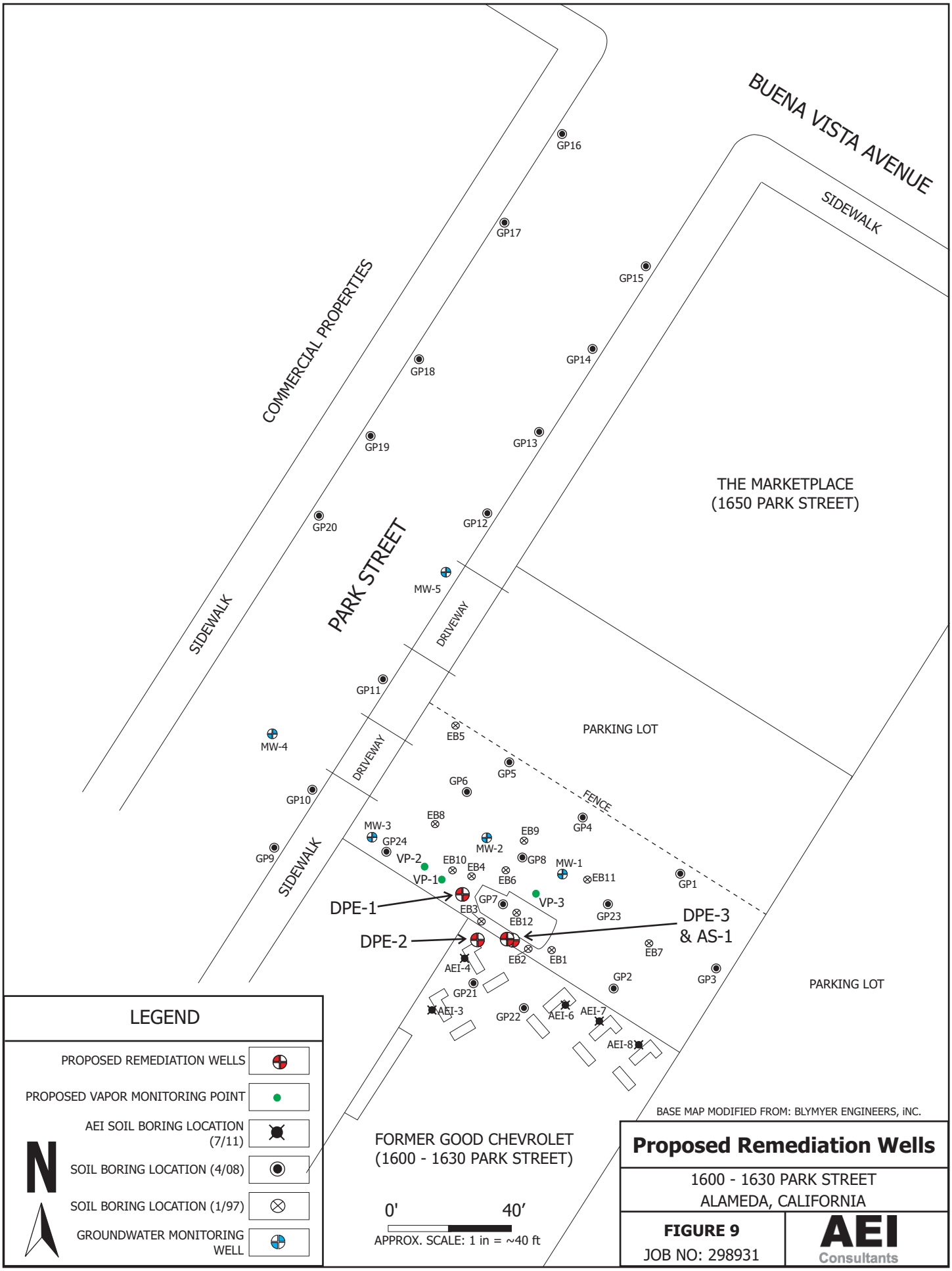
Well Volumes Purged:
Calculated Gallons Purged:
2" (0.16 gal/ft) <or> 4" (0.65 gal/ft)
Actual Volume Purged (gallons): 17
Free Product Present? NO
Free Product Thickness (feet):
Well Depth Before Development: 21.62
Well Depth After Development: 21.65

FIELD PARAMETERS MEASURED

Time	Volume Removed (gallons)	Temp (deg C)	pH	Conductivity (µS/cm)	DO (mg/L)	ORP (meV)	Appearance of Purge Water
0630	2						Brown
	4						Lt. Brn
	6						"
	8						Clear
0645	10						Clear
0715	11	20.39	7.65	620	9.62	29.5	"
	12	20.36	7.60	621	9.03	-14.9	"
	13	20.36	7.61	624	8.95	-39.3	"
	14	20.38	7.63	626	8.74	-63.5	"
	15	20.39	7.66	622	8.63	-73.7	"
	16	20.42	7.67	674	8.86	-87.5	"
0730	17	20.39	7.68	623	8.65	-91.8	"

COMMENTS (i.e., pumped dry, sample odor, well recharge time & percent, etc.)

1st 4 gallons sandy


BUENA VISTA AVENUE
SIDEWALK
COMMERCIAL PROPERTIES
PARK STREET
SIDEWALK
DRIVEWAY
DRIVEWAY
THE MARKETPLACE
(1650 PARK STREET)
PARKING LOT
PARKING LOT
FENCE
GP16
GP17
GP15
GP14
GP18
GP19
GP13
GP20
GP12
MW-5
GP11
EB5
MW-4
GP5
GP6
GP10
EB8
GP4
MW-3
GP24
EB9
MW-2
GP9
VP-2
EB10
EB4
GP8
MW-1
VP-1
EB6
EB11
GP1
DPE-1
GP7
VP-3
EB3
GP23
EB12
DPE-3
& AS-1
DPE-2
EB7
EB2
EB1
AEI-4
GP2
GP3
GP21
AEI-3
GP22
AEI-6
AEI-7
AEI-8
FORMER GOOD CHEVROLET
(1600 - 1630 PARK STREET)
0'
40'
APPROX. SCALE: 1 in = ~40 ft
LEGEND
PROPOSED REMEDIATION WELLS
PROPOSED VAPOR MONITORING POINT
AEI SOIL BORING LOCATION (7/11)
SOIL BORING LOCATION (4/08)
SOIL BORING LOCATION (1/97)
GROUNDWATER MONITORING WELL
N
BASE MAP MODIFIED FROM: BLYMYER ENGINEERS, INC.
Proposed Remediation Wells
1600 - 1630 PARK STREET
ALAMEDA, CALIFORNIA
FIGURE 9
JOB NO: 298931
AEI Consultants