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By Alameda County Environmental Health at 3:12 pm, Mar 06, 2013

February 28, 2013

Mr. Mark Detterman  
Alameda County Environmental Health  
1131 Harbor Bay Parkway  
Alameda, CA 94502

**Re: Kerry & Associates – Palace Garage  
14336 Washington Avenue  
San Leandro, California  
ACEH Case No. RO0000208**

Dear Mr. Detterman,

I declare, under penalty of perjury, that the information and/or recommendations contained in the **Revised Draft Corrective Action Plan** are true and correct to the best of my knowledge.

Sincerely,



Mr. Jeffrey Kerry



February 28, 2013

Mr. Mark Detterman  
Alameda County Environmental Health  
1131 Harbor Bay Parkway  
Alameda, CA 94502

**Re: Revised Draft Corrective Action Plan  
Kerry & Associates – Palace Garage  
14336 Washington Avenue  
San Leandro, California  
ACEH Case No. RO0000208  
SFRWQCB LUFT Case No. 01-1133**

Dear Mr. Detterman:

On behalf of Kerry & Associates, Closure Solutions, Inc. (Closure Solutions) has prepared this *Revised Draft Corrective Action Plan* (Draft CAP) for the Palace Garage site located at 14336 Washington Avenue, San Leandro, California (the Site, Figure 1). Preparation of a Draft CAP was requested by Alameda County Environmental Health (ACEH) in a letter dated January 24, 2013 (Attachment A). The purpose of the Draft CAP is to describe details and procedures for the installation and operation of a temporary dual-phase extraction (DPE) system at the Site. Presented below is the site background, a summary of previous site assessment activities and current site conditions, a comparison and evaluation of remedial alternatives, the recommended corrective action, and our proposed scope of work and schedule to implement corrective action.

## 1.0 SITE BACKGROUND

### 1.1 Site Description

The Site is an automotive body repair shop located on Washington Avenue in San Leandro, California (Figures 1 and 2). Land use in the vicinity of the property is primarily industrial/commercial. ACEH records show that one underground storage tank (UST) existed at the Site at the time of removal in 1991.

### 1.2 Regional Geology and Hydrogeology

According to the United States Geological Survey (USGS) San Leandro 7.5 Minute Topographic Quadrangle Map (dated 1969, photo revised 1980), Site elevation is approximately 40 feet above mean sea level (msl) (Figure 1). The topography of the Site and surrounding properties are

nearly flat with a slight overall slope to the west. Near surface geology is classified as Holocene age alluvial fan and fluvial deposits with a general fining upwards of soil types.

The Site is located within the Santa Clara Valley East Bay Plain Groundwater Basin. An aquifer identified as the Newark Aquifer equivalent is located between approximately 30 and 130 feet below ground surface (bgs). Aquifers of limited extent occur within the equivalent at depths of less than 50 feet bgs. These aquifers are described as having relatively high vertical resistance to flow. This aquifer equivalent is separated from underlying aquifers by the Yerba Buena Mud, an aquitard comprised of relatively homogenous estuarine mud typically 50 feet in thickness which pinches out eastward towards the Hayward Fault. Groundwater flow in the shallow units generally flows from east to west towards the San Francisco Bay with an average horizontal gradient of 0.002 feet per foot. No surface water bodies have been identified within a 2,000 foot radius of the Site (Closure Solutions, 2008). The San Francisco Bay is located approximately 2.5 miles west of the Site.

### 1.3 Local Geology

Soils beneath the Site consist of clays, silty clays and clayey silts between near ground surface and approximately 16 feet bgs, poorly graded sands and gravels between approximately 16 and 21 feet bgs, and clays between approximately 21 and 25 feet bgs, the total depth explored. The saturated water bearing zone encountered beneath the Site is considered to be unconfined, with depth to groundwater measured in the existing well network ranging seasonally between 12 to 16 feet bgs. Groundwater flow direction has ranged from west to south-southwest with an average gradient of 0.003 feet per foot (ft/ft).

## 2.0 SUMMARY OF PREVIOUS ASSESSMENTS

A 550-gallon gasoline underground storage tank (UST) was removed from the Site in 1991. Subsequent investigations included the installation of three monitoring wells (MW-1 through MW-3) and the drilling of 15 borings (B-1 through B-15). Based on data obtained from the wells and borings, impacted unsaturated-zone soil is confined to the area of the former dispenser pad and UST. The primary groundwater flow direction is toward the southwest.

In December 2002, Professional Service Industries, Inc. (PSI) conducted a soil and groundwater investigation to evaluate the lateral extent of petroleum hydrocarbons in the soil and groundwater at the Site. Borings B-16 and B-17 were advanced to between 20 and 24 feet below ground surface (bgs). Boring B-16 was converted into monitoring well MW-4. Concentrations of total petroleum hydrocarbons as gasoline (TPHg) and gasoline related contaminants were detected only in soil from boring B-17 and groundwater from wells MW-1 and MW-2. The locations of the monitoring wells and soil borings are presented on Figure 2.

Closure Solutions conducted a Sensitive Receptor Survey to identify all water supply wells and sensitive receptors within a 2,000-foot radius of the Site. The closest water supply wells are two industrial wells approximately 450 feet northwest (cross-gradient) of the Site. The closest domestic well is approximately 1,500 feet southeast (cross-gradient) of the Site. The closest down-gradient well is an irrigation well approximately 1,400 feet southwest of the Site. No surface water bodies were identified within a 2,000 foot radius of the Site. Results of the Sensitive Receptor Survey are presented in the *Sensitive Receptor Survey* report dated August 27, 2008.

Closure Solutions prepared and submitted a *Site Conceptual Model* (SCM) dated September 30, 2008 for the Site. The preparation of the SCM was requested by Alameda County Environmental Health (ACEH) in their letter dated September 2, 2008.

In an email dated June 12, 2009, Mr. Steve Plunkett with the ACEH approved the reduction of groundwater monitoring to a semi-annual basis conducted in second and fourth quarters. Mr. Plunkett also approved the recommendation to eliminate the fuel oxygenates from the suite of laboratory analytes.

On October 15, 2009, Closure Solutions discussed the Site status with ACEH. Data gaps presented in the SCM and other information that ACEH would require for site closure were identified. Closure Solutions submitted the *Soil Vapor Probe and Additional Assessment Work Plan* on November 13, 2009 to address the work necessary to move the Site toward closure.

On May 14, 2010, Closure Solutions submitted a letter to the ACEH stating that Closure Solutions intended to proceed with the proposed scope of work pursuant to CCR Title 23, Division 3, Chapter 16, Section 2722 (e) which states “Implementation of the proposed workplan may begin sixty (60) calendar days after submittal, unless the responsible party is otherwise directed in writing by the regulatory agency”. On May 21, 2010, the ACEH responded to Closure Solutions’ letter of intent via email explaining that the ACEH has been largely precluded from generating letters on cases due to the work load imposed by SWRCB Resolution 2009-0042 and they will attempt to raise the review interval for the Site.

On July 26, 2010, a representative from Closure Solutions was on site to oversee the installation and sampling of three temporary soil vapor probes (SV-1 through SV-3) and advancement of one down-gradient soil boring (SB-18). A *Soil Vapor Testing and Additional Assessment Report* describing field activities and discussing analytical soil and soil vapor results was submitted to the ACEH on August 30, 2010.

On January 24, 2012, Closure Solutions supervised the advancement of two soil borings, collection of additional soil and groundwater data, and installation of wells MW-5 and MW-6.

The work was completed in order undertake further corrective actions at the site. Collected soil and groundwater samples were analyzed for gasoline range organics (GRO), benzene, toluene, ethylbenzene, and xylenes (BTEX constituents). Additionally, bio-attenuation parameters were analyzed for groundwater collected from well MW-5. A discussion of analytical results is presented in the *Groundwater Monitoring Well Installation Report* submitted on March 30, 2012.

After completing the monitoring well installation, a DPE pilot test was performed from February 21 through 25, 2012. The pilot test was conducted to evaluate whether DPE would be a viable technology to remediate soil and groundwater beneath the Site. High groundwater extraction rates were encountered during pilot testing conducted from MW-1. As a result, subsurface soils could not be effectively dewatered to allow remediation via vapor extraction. Pilot testing from well MW-6 produced average groundwater extraction rates that were roughly two-thirds less than those observed during testing from MW-1. Subsequently, the technology was successful in lowering the groundwater table in the vicinity of well MW-6 and exposing the capillary fringe or “smear” zone. The test was performed for a total of approximately 44 hours, and removed approximately 104 lbs of vapor-phase hydrocarbons from the subsurface. Based on the results of testing performed from MW-6, DPE appears to be a viable option for Site remediation.

Closure Solutions continues to conduct groundwater monitoring and sampling on a semi-annual basis during second and fourth quarters. A summary of soil and groundwater Site characterization data is presented as Tables 1 and 2.

### 3.0 CURRENT SITE CONDITIONS

Clayey soils with low hydraulic conductivity and effective porosity have been identified from near ground surface to approximately 12 feet bgs with the first water bearing zone located from approximately 12 to 20 feet bgs. Groundwater elevations appear to fluctuate seasonally between approximately 13 and 16 feet bgs. A review of the last six years of groundwater monitoring data suggests the fine-grained soils present beneath the Site may be restricting the vertical movement of petroleum hydrocarbon constituents. The approximate lateral extent of TPHg/GRO impacted soil is illustrated on Figure 2.

As noted in a letter from the ACEH dated May 18, 2011, during periods of high groundwater elevation, reported concentrations of dissolved petroleum constituents in the vicinity of the source area (monitoring well MW-1) are greater than during periods of low groundwater elevation, suggesting loading of dissolved petroleum hydrocarbons to groundwater. Approximately six months following a period of high groundwater elevation, concentrations in down-gradient well MW-2 undergo an increase; however the reported concentrations are an

order of magnitude lower. Concentrations in recently installed well MW-5, located down-gradient from well MW-2, have been below laboratory reporting limits for all constituents analyzed. The available analytical data suggest that the groundwater plume is defined in the down-gradient direction by MW-5 and the source area remains in the vicinity of MW-1 and MW-6.

The closest water supply wells identified are two industrial supply wells approximately 450 feet northwest (up-gradient) of the Site. The closest drinking water well is approximately 1,500 feet southeast (cross-gradient) of the Site, and the closest down-gradient well is an irrigation well approximately 1,400 feet southwest of the Site. No surface water bodies have been identified within a 2,000-foot radius of the Site. Based on available data, Closure Solutions believes it is unlikely that the petroleum hydrocarbon contamination detected at the Site presents a significant threat to nearby sensitive receptors.

As previously stated, the Site is currently occupied by an automotive body repair shop, and will likely continue to remain so for the foreseeable future. Surrounding land use is primarily industrial/commercial. Based on the location of the site, redevelopment of the area into non-commercial use is highly unlikely.

### 3.1 Site Specific Remediation Goals

On December 8, 1995, Mr. Walter Pettit (Executive Officer, State Water Resources Control Board [SWRCB]) issued an advisory to all Regional Water Quality Control Boards indicating that oversight agencies should proceed aggressively to close low risk cases. Based on the recently adopted 2012 *Low-Threat UST Closure Policy*, conditions at the Site do not qualify for closure due to elevated concentrations of petroleum hydrocarbons identified during previous assessment activities. The following corrective action objectives are proposed to maintain beneficial uses of groundwater resources and to protect human health.

#### 3.1.1 Soil Remedial Objectives

A summary of soil results compared to environmental screening levels (ESLs) from the *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater - Interim Final- November 2007 (revised May 2008)* prepared by the SFRWQCB are presented in the following table.

**Chemicals of Potential Concern in Shallow Soil and Environmental Screening Levels**

<b>Detected Analyte</b>	<b>Highest Reported Concentration</b>	<b>Shallow Soil Residential ESL</b>	<b>Shallow Soil Commercial ESL</b>
TPHg/GRO	4,700 mg/kg	100 mg/kg	180 mg/kg
Benzene	22 mg/kg	0.12 mg/kg	0.27 mg/kg
Toluene	160 mg/kg	9.3 mg/kg	9.3 mg/kg
Ethylbenzene	89 mg/kg	2.3 mg/kg	4.7 mg/kg
Xylenes	480 mg/kg	11 mg/kg	11 mg/kg
MTBE	<10 mg/kg	8.4 mg/kg	8.4 mg/kg

Table B (SFRWQCB 2008), ESL, shallow soils groundwater not current or potential drinking water source.

As identified in the above table, concentrations of GRO and BTEX compounds are present at the Site at concentrations above the environmental screening levels for shallow soil for a residential and commercial land use. While MTBE is below the laboratory reporting limit, the reporting limit is greater than the ESL. To be conservative, Closure Solutions considers MTBE concentrations in soil to be equal to the reporting limit. The remedial objective for soil is to reduce residual hydrocarbon concentrations that may serve as a significant secondary source and prevent public exposure to the impacted soils within technical and economic constraints. Therefore remedial alternatives will be reviewed to address the impacted soil remaining on the Site.

**3.1.2 Groundwater Remedial Objectives**

During the groundwater monitoring and sampling event on November 8, 2012 (Second Semi-Annual Event 2012), groundwater was found to be impacted with GRO and BTEX constituents. The following table presents the contaminant concentrations found during the Second Semi Annual Event 2012, as well as the water quality objectives for each constituent.

For the purposes of this Draft CAP, Closure Solutions considers the Water Quality Objective for constituents of concern to be the Primary MCL or secondary MCL, if established. If a primary MCL has not been established, the San Francisco RWQCB’s environmental screening level (ESL) is used. Constituents that do not exhibit concentrations above the Water Quality Objectives are not considered to be constituents of concern.

Contaminant	Current Concentration	Water Quality Objective	Water Quality Objective Basis
TPHg/GRO	9,700 ug/L	100 ug/L	SFRWQCB Environmental Screening Level
Benzene	210 ug/L	1.0 ug/L	California Primary MCL
Toluene	270 ug/L	150 ug/L	California Primary MCL
Ethylbenzene	2,800 ug/L	300 ug/L	California Primary MCL
Total Xylenes	3,320 ug/L	1,750 ug/L	California Primary MCL

The constituents of concern for the Site are considered to be GRO and BTEX compounds.

The groundwater remedial objective is to eliminate hazardous and nuisance conditions associated with the presence of dissolved hydrocarbons in the subsurface environment at the site within physical and economic constraints. Specifically, groundwater-based objectives include (a) reducing the dissolved-phase mass and (b) controlling plume migration.

The overall remedial objective for the Site is to ensure that the threat to human health and ecological receptors is adequately abated, which would enable the case to be eligible for closure under the Low-Threat Policy.

#### 4.0 REMEDIATION ALTERNATIVES EVALUATION AND COMPARISON

Elevated concentrations of GRO and BTEX constituents are present in the shallow soil and groundwater beneath the Site. The goal is to implement a cost effective remedial technology that will meet soil and groundwater cleanup objectives within a reasonable time period. Remedial options considered for the site are as follows:

- No Action / Natural Attenuation
- Ozone Sparging
- Excavation
- Dual Phase Extraction



## 4.1 Evaluation of Alternatives

The selection of an appropriate corrective action for remediation of petroleum hydrocarbons beneath the Site is further evaluated based on the following criteria:

**Regulatory Agency Acceptance.** This criterion is used to assess the likelihood of acceptance of the various alternatives by regulatory agencies having jurisdiction over corrective action.

**Reduction of Toxicity, Mobility, or Volume.** This criterion establishes preference for alternatives that will produce permanent and significant reductions. The evaluation focuses on the amount of chemicals to be destroyed or treated, the irreversibility of the treatment, and the type and quantity of residual material that will remain after treatment.

**Technical Feasibility.** Technical feasibility refers to the ease of construction given the Site constraints, the reliability of the technology, and the ability to monitor the effectiveness of an alternative.

**Cost.** This criterion is used to assess the overall remediation lifecycle costs, including capital (non-recurring) costs, recurring annual costs, as well as system destruction and abandonment costs. Costs associated with additional assessment, closure negotiation and project management are not included in this evaluation.

## 4.2 Comparison of Selected Alternatives

### 4.2.1 No Action / Natural Attenuation

This alternative would rely on natural attenuation, rather than active remediation, to achieve the remedial objectives. Natural attenuation processes include biodegradation, dispersion, dilution, sorption, volatilization, chemical or biological stabilization, transformation or destruction of contaminants. Under this alternative, no additional work would be conducted.

**Regulatory Agency Acceptance.** While the plume appears to be defined by previous assessment activities conducted across the Site, this alternative is unlikely to be accepted by the regulatory agencies at this time due to the elevated concentrations of petroleum hydrocarbons described in Section 3.0, and because contaminants are unlikely to reach water quality objectives within a reasonable time frame.

**Reduction of Toxicity, Mobility, and Volume.** The toxicity, mobility, and volume of TPHg/GRO and BTEX constituents in soil and groundwater would likely be reduced through natural attenuation processes.

**Technical Feasibility.** Site assessment data indicates that residual soil and groundwater contamination resulting from a release related to the former UST is present beneath the Site. However, the extent has been relatively defined through assessment activities and is unlikely to

impact sensitive receptors or deep groundwater resources. Nevertheless, because elevated concentrations of petroleum hydrocarbons in soil and groundwater remain on-Site, the technical feasibility of no action is limited due to the amount of time necessary to achieve water quality objectives through natural attenuation.

**Cost.** Costs for this alternative include preparation of a No Further Action Request, miscellaneous project closeout costs, and continued groundwater monitoring and reporting until closure is granted. No other significant costs are associated with this alternative, as No Action infers that no further investigation or remediation will be conducted.

#### 4.2.2 Ozone Sparging

This alternative consists of installing an ozone sparge system and ozone sparge well network to inject ozone into the subsurface. Ozone sparging promotes oxidation of petroleum hydrocarbons to non-toxic byproducts by introducing ozone into the groundwater. An ozone sparge system delivers measured amounts of ozone from an ozone generator to sparge wells located within the impacted zone. Ozone sparge wells are installed at specific locations and depths to target areas of contamination. Ozone is delivered to the sparge wells via individual lines plumbed to each of the wellheads.

**Regulatory Agency Acceptance.** Ozone sparging was first implemented as a remedial technology in the late 1990's, and has since gained widespread regulatory acceptance as a remedial technology for addressing dissolved groundwater concentrations. Prior to implementing full-scale ozone sparging, a bench-scale test should be performed to confirm that no detrimental secondary chemical reactions will result from discharge of ozone into the subsurface.

**Reduction of Toxicity, Mobility, and Volume.** Implementation of ozone sparging would reduce contaminant mass in the groundwater and thereby reduce overall toxicity.

**Technical Feasibility.** Ozone Sparging relies on the placement of numerous ozone sparge wells (injection points) in the source area as well as across the dissolved plume. Ozone sparging has been shown to be highly effective at reducing contaminant mass in the subsurface; however, the success of ozone sparging is highly dependent upon injection point spacing and subsurface lithology. Ozone sparging is most effective in moderately to highly permeable lithologies, such as those found in the water-bearing zone at the Site, however, ozone would likely be less effective at treating hydrocarbons retained in the fine grained, less permeable soil identified in the “smear zone” above the water-bearing zone.

**Cost.** The initial cost to implement this alternative is relatively high due to the cost of installing the ozone sparge well network and associated conveyance piping, as well as the purchase of the ozone sparge system. Despite the high capital cost, the recurring costs are relatively low when

compared with most active remediation systems. The electrical service requirements for this type of system are minimal, no waste stream is produced, and operation and maintenance activities are limited and straightforward. Based on our experience at similar sites, Closure Solutions estimates that designing, installing, and operating an ozone sparge system at the site for approximately 3 years would cost between \$300,000 and \$400,000.

#### 4.2.3 Excavation

This alternative consists of performing limited excavation and disposal of impacted soil that lies within the TPHg/GRO 1,000-milligram per kilogram (mg/kg) soil contour shown on Figure 2. To perform excavation activities, clean surface soil to approximately 6 feet bgs would be excavated and stockpiled onsite, and reused as fill material. Soil from approximately 6 feet bgs to 13 feet bgs would be excavated and disposed of at an appropriate disposal facility. The excavation activities would be conducted in the summer months when groundwater is at its lowest point. If groundwater is encountered in the excavation, it would be pumped from the excavation and stored onsite pending characterization and disposal.

**Regulatory Agency Acceptance.** While excavation would remove hydrocarbon-impacted soil onsite, it would not directly remediate dissolved hydrocarbons in groundwater; therefore, it is uncertain whether or not this alternative would gain regulatory acceptance.

**Reduction of Toxicity, Mobility, and Volume.** The excavation and removal of impacted soil identified during previous investigations would significantly and permanently remove the volume of impacted soil and further reduce future groundwater impact.

**Technical Feasibility.** Limited excavation and disposal of impacted soil is a technically feasible alternative that could be performed by implementing appropriate construction practices utilized by properly licensed, experienced individuals. However, considering the size of the proposed open excavation and the proximity to nearby Site buildings, excavation would most likely require engineered shoring to protect the structural integrity of the buildings, as excavation sidewall collapse would be a significant concern. The location of the excavation (in an alley between the two adjoining buildings) provides inadequate space for the equipment necessary to complete the excavation and stockpile the soils. Additionally, the location of the excavation is used extensively by the businesses operating on the Site. Excavation activities would most likely limit access to the area, detrimentally disrupting day-to-day operations of the businesses operating at the Site.

**Cost.** The cost to implement this alternative is estimated to be between \$175,000 and \$275,000. The initial cost to implement this alternative is relatively high due to the cost of soil transportation (import of clean soil and disposal of contaminated soil), as well as the potential need for engineered shoring. Despite the high capital cost, there are no recurring costs.

#### 4.2.4 Dual Phase Extraction

This alternative consists of installing and operating a DPE system at the Site. Closure Solutions conducted a DPE pilot test at the Site from February 21 through February 25, 2012 to evaluate DPE as a potential remedial option. Based on the results of the pilot test, it appears that this technology could successfully remediate the remaining residual hydrocarbons in soil and groundwater beneath the Site in a relatively short period of time. Vapor-phase hydrocarbon removal rates achieved during testing indicated that sufficient extractable mass exists in the subsurface, and that it can be successfully removed via DPE. Closure Solutions recommends implementing longer-term DPE operation at the Site using a temporary DPE system. This approach offers flexibility in the overall remedial approach by allowing for extension of the remedial action as needed without the expense of full scale DPE system installation. To implement DPE at the Site, Closure Solutions recommends installing at least one additional appropriately-screened well and using a trailer-mounted DPE system to control costs.

**Regulatory Agency Acceptance.** Considering that DPE actively addresses removal of hydrocarbons in soil as well as dissolved hydrocarbons in groundwater, it is likely that this alternative would gain regulatory acceptance.

**Reduction of Toxicity, Mobility, and Volume.** The contaminant mass would be aggressively removed and permanently destroyed using this alternative.

**Technical Feasibility.** Based on the results of the DPE pilot test, it appears that this technology could successfully remediate the remaining residual hydrocarbons in soil and groundwater beneath the Site in a relatively short period of time. Vapor-phase hydrocarbon removal rates achieved during testing demonstrate that sufficient extractable mass exists in the subsurface, and that it can be successfully removed via DPE. Groundwater extraction rates observed during testing from one well (MW-6) were within acceptable limits, and appeared to decrease over time.

**Cost.** Implementing DPE operation at the Site using a temporary, trailer-mounted DPE system would be a more cost-effective than installing a permanent system. This approach offers flexibility in the overall remedial approach by allowing for extension of the remedial action as needed without the expense of full scale DPE system installation. The cost to implement this alternative for approximately 6 months is estimated to be between \$200,000 and \$300,000. The future costs include design, permitting, well installation, equipment purchase/rental, and O&M costs.

## 5.0 RECOMMENDED CORRECTIVE ACTION

Given the success of the DPE test, Closure Solutions recommends implementing a DPE operation at the Site using a temporary DPE system. Closure Solutions proposes connecting the system to one dedicated DPE well, with the option of potentially connecting to well MW-6 in

addition, depending on extracted hydrocarbon concentrations and groundwater production rates. Upon regulatory concurrence with the Revised Draft CAP, Closure Solutions will proceed with the installation of one DPE well at the site. Once the well installation activities are completed, Closure Solutions will proceed with installing and operating a temporary DPE system. The following sections present a brief work plan describing installation of the DPE well, vendor selection, system permitting, installation of the temporary DPE system, and system operating procedures.

## 6.0 DPE WELL INSTALLATION

Closure Solutions proposes to install one 4-inch diameter on-site DPE well in the vicinity of monitoring well MW-6. The well will be installed to a depth of approximately 20 feet below ground surface (bgs), and is anticipated to be screened from approximately 5-20 feet bgs. The approximate well location is shown on Figure 3.

### 6.1 Preliminary Field Activities

Prior to initiating field activities, Closure Solutions will obtain the necessary drilling, permits, prepare a site-specific Health and Safety Plan (HASP) for the proposed work, and clear the Site for subsurface utilities. The utility clearance will include notifying Underground Service Alert (USA) of the pending work a minimum of 48 hours prior to initiating drilling activities, and securing the services of a private utility locating company to confirm the absence of underground utilities at the boring location.

A HASP will be prepared for use by personnel implementing the Work Plan. The HASP will address hazards associated with the proposed soil boring. A copy of the HASP will be available on-Site at all times. The subcontractor(s) performing field activities will be provided with a copy of the HASP prior to initiating work. A safety tailgate meeting will also be conducted daily to review the Site hazards and drilling work scope.

### 6.2 DPE Well Installation and Shallow Soil Sampling

Closure Solutions personnel will supervise the drilling of one DPE well to a total depth of approximately 20 feet bgs. The proposed location of the DPE well is based on the results of the pilot test performed in February 2012, during which the DPE radius of influence was calculated to be approximately 35'. A hollow stem auger (HSA) drilling rig will be used to advance the boring. As requested in the ACEH's January 24, 2013 letter and further confirmed with the ACEH in recent discussions, Closure Solutions will address the lack of soil analytical data from near surface to 10 feet bgs by collecting soil samples during boring advancement at a minimum of every 3 vertical feet up to 10 feet bgs, then every 5 feet to the total expected boring depth of

20 feet bgs. Additionally, samples will be collected at areas of obvious hydrocarbon impact, and at significant changes in lithology. Collected samples will be classified by Closure Solutions field personnel according to the Unified Soil Classification System (USCS) and examined using visual and manual methods for parameters including odor, staining, color, grain size, and moisture content and field screened for the presence of residual petroleum hydrocarbon vapor concentrations using a photo-ionization detector (PID).

The well will be constructed with 4-inch diameter schedule 80 polyvinyl chloride (PVC) blank casing and a 0.010-inch slotted PVC well screen. The well screened interval will be 15 feet in length, extending from approximately 5 feet to 20 feet bgs. The well will be completed with #2/12 graded sand filter pack placed within the annulus of the well from the bottom of the boring to approximately 1 foot above the top of the well screen, followed by a 2-foot well transition seal consisting of bentonite, and neat cement to ground surface.

The wellhead will be completed at ground surface with a locking well cap and 12-inch diameter traffic-rated bolt-down well vault. The vault will be installed in concrete and slightly above the surrounding surface grade to provide positive relief away from the wellhead. A California-licensed land surveyor will then survey the wellhead elevation with respect to mean sea level (msl) and in accordance with GeoTracker requirements.

### 6.3 Sample Handling and Analysis

Each soil sample collected during soil boring advancement for possible chemical analysis will be covered at each end with Teflon™ sheeting, capped with plastic end caps, labeled, and placed in an ice-filled cooler for preservation. Soil samples will be submitted under chain-of-custody protocol to SunStar Laboratories of Lake Forest, California, a California State-certified analytical laboratory. Soil samples will be analyzed for the following: gasoline range organics (GRO), benzene, toluene, ethylbenzene, xylenes, and the fuel oxygenates methyl tertiary butyl ether (MTBE) and naphthalene by EPA Method 8260B.

### 6.4 Waste Disposal

Investigation derived waste (IDW) will be temporarily stored on-Site in 55-gallon, DOT-approved 17H drums, pending characterization and disposal. The IDW will be characterized in accordance with waste disposal or recycling facility acceptance requirements. Closure Solutions will coordinate the transport and disposal of the IDW at an approved facility.

## 6.5 Geotracker

In accordance with GeoTracker requirements, Closure Solutions will upload to GeoTracker all soil and groundwater analytical and gauging data, and copies of the boring logs and final report related to this investigation.

## 6.6 DPE Well Installation Report

Upon completion of field activities and receipt of all laboratory analytical data, Closure Solutions will finalize and provide the ACEH with a brief summary report documenting installation of the DPE well.

## 7.0 DPE SYSTEM INSTALLATION AND OPERATION

Upon completion of DPE well installation activities, Closure Solutions proposes to install and operate a temporary DPE system for the purpose of remediating the remaining residual hydrocarbons in soil and groundwater beneath the Site.

The DPE system installation scope of work will include the following:

- Obtaining the required building permits for DPE system installation from the City of San Leandro;
- Obtaining the required air permit for operation of the DPE system from the Bay Area Air Quality Management District (BAAQMD);
- Obtaining the required permit for discharge of treated groundwater to the sanitary sewer from the East Bay Municipal Utility District (EBMUD);
- Contracting with a qualified, licensed contractor to install subsurface piping to the DPE well and MW-6, construct a temporary equipment enclosure, and assist with placement of equipment within the enclosure;
- Upgrading the existing Site electrical service or establishing temporary service with Pacific Gas and Electricity (PG&E) to provide three-phase electrical power for the DPE system; and
- Completing the plumbing and electrical connections to the DPE system in preparation for system operation.

Prior to commencing system installation activities, Closure Solutions will work with the site tenants to identify a suitable location for the temporary equipment enclosure and will schedule installation activities to minimize disruption to business activities. It is anticipated that system installation activities can be completed in less than two weeks. A site plan showing the conceptual layout of the DPE system is included as Figure 3. Details of the proposed DPE system installation scope of work are presented below.

## 7.1 Permitting

Closure Solutions will prepare and submit the necessary permit application packages and pay the required fees to the City of San Leandro, the BAAQMD, and EBMUD to obtain the permits required for the installation and operation of the DPE system. Based on our experience with similar projects, approval of the BAAQMD and EBMUD permits could take several months.

## 7.2 Piping and Equipment Enclosure Installation

Upon receipt of approved permits, Closure Solutions will engage the services of a qualified California-licensed contractor and oversee installation of subsurface piping and a temporary equipment enclosure for the DPE system. Prior to beginning trenching activities, the existing asphalt surface will be saw-cut using a walk-behind concrete saw, broken up and removed for disposal. To minimize the possibility of damaging existing subsurface lines and conduits, all trenching will be completed by hand digging to a depth of approximately 16 inches below ground surface. Once trenching is completed, 2-inch diameter Schedule 40 PVC piping will be placed in the trench from the equipment compound location and stubbed up inside 24-inch diameter well vaults installed over the DPE well and MW-6. Piping will be manifolded inside the equipment compound for connection to the DPE system. After subsurface piping installation is completed, the trenching will be backfilled with excavated soil and compacted. Once backfill and compaction activities are completed, the trenched areas will be repaved with asphalt to match the existing surface.

## 7.3 Electrical Service Upgrade

To provide the necessary power to operate the DPE system, Closure Solutions will coordinate with PG&E to have the existing site electrical service serving the property upgraded to provide 200 amps of three-phase power for the DPE system. If the existing electrical service cannot be upgraded to provide the required power, Closure Solutions will arrange with PG&E to have a dedicated power drop installed for the DPE system. A qualified California-licensed electrical contractor will be subcontracted to complete installation of the required electrical service components and connection to the DPE system.



## 7.4 Equipment Installation and Operation

DPE will be performed using a trailer-mounted 20 or 25-horsepower liquid-ring blower and thermal oxidizer capable of achieving vacuum rates of up to 28 inches of mercury vacuum (in. Hg), and flow rates of up to 400 cubic feet per minute (cfm). During operation, soil vapor and groundwater will be extracted from the wells by applying vacuum to the well casings through the 2-inch diameter subsurface piping. Within each extraction well vault, a 1.5-inch diameter clear ‘stinger’ hose will be connected to the 2-inch PVC piping and inserted through a rubber coupling installed on top of each of the well heads. During operation, the stinger hose will be incrementally lowered into the groundwater to maintain water flow and avoid a ‘deadheading’ situation (where groundwater stops flowing up the stinger). After extraction from the wells, the soil vapor/groundwater process stream will be passed through a vapor/liquid separator, where groundwater will be separated out and soil vapor will be routed to the thermal oxidizer for abatement. Groundwater will be pumped from the vapor/liquid separator, through a particulate filter, then through two 1,000-lb activated carbon vessels and a flow totalizer before being discharged to the sanitary sewer under permit from EBMUD. To minimize costs and avoid the need for installation of subsurface sanitary sewer piping, treated groundwater will be discharged to the sewer via an on-site sanitary sewer cleanout.

During operation of the DPE system, Closure Solutions will periodically collect soil vapor samples at the influent and effluent ports of the thermal catalytic oxidizer for the purpose of calculating vapor-phase hydrocarbon mass removal rates and verify that the DPE system is operating in compliance with specified permit conditions. In addition, water samples will be collected on a regular basis from the influent and effluent of the two 1,000-lb activated carbon vessels as required by EBMUD discharge permit conditions.

## 7.5 Summary Report

Upon completion of DPE system installation activities, Closure Solutions will finalize and submit a report documenting system installation and start-up activities.

## 7.6 GeoTracker

In accordance with GeoTracker requirements, Closure Solutions will upload the DPE System Installation and Startup Report to the GeoTracker website.

## 8.0 SCHEDULE

Upon receipt of Draft CAP approval from the ACEH, Closure Solutions will begin the process of obtaining the necessary permits for installation of the DPE system and coordinating with PG&E for the required utility upgrades. We anticipate that permitting and utility coordination will take approximately 6 months to complete. Once permits are obtained and utility upgrades are performed, Closure Solutions will oversee installation of the DPE system at the Site, which is anticipated to take approximately two months to coordinate and complete.

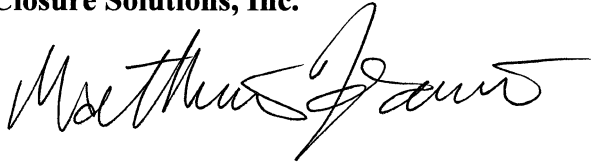
## 9.0 LIMITATIONS

This report is based on Site conditions, data, and other information available as of the date of the report, and the conclusions and recommendations herein are applicable only to the time frame in which the report was prepared. Background information used to prepare this report including, but not limited to, previous field measurements, analytical results, Site plans and other data have been furnished to Closure Solutions by Kerry & Associates and their previous consultants. Closure Solutions has relied on this information as furnished, and is neither responsible for nor has confirmed the accuracy of this information. Analytical data used to prepare this report has been provided by an approved California Certified Laboratory. Closure Solutions has not performed an independent review of the data and is neither responsible for nor has confirmed the accuracy of this data.

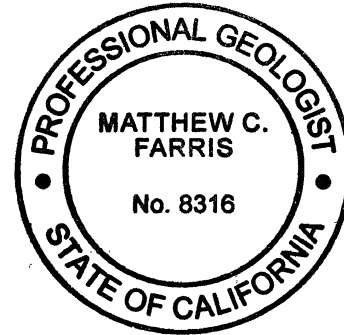
If you have any questions regarding this report, please contact Mr. Matthew Farris at (916) 760-7579 or at mfarris@closureolutions.com.

Sincerely,

**Closure Solutions, Inc.**



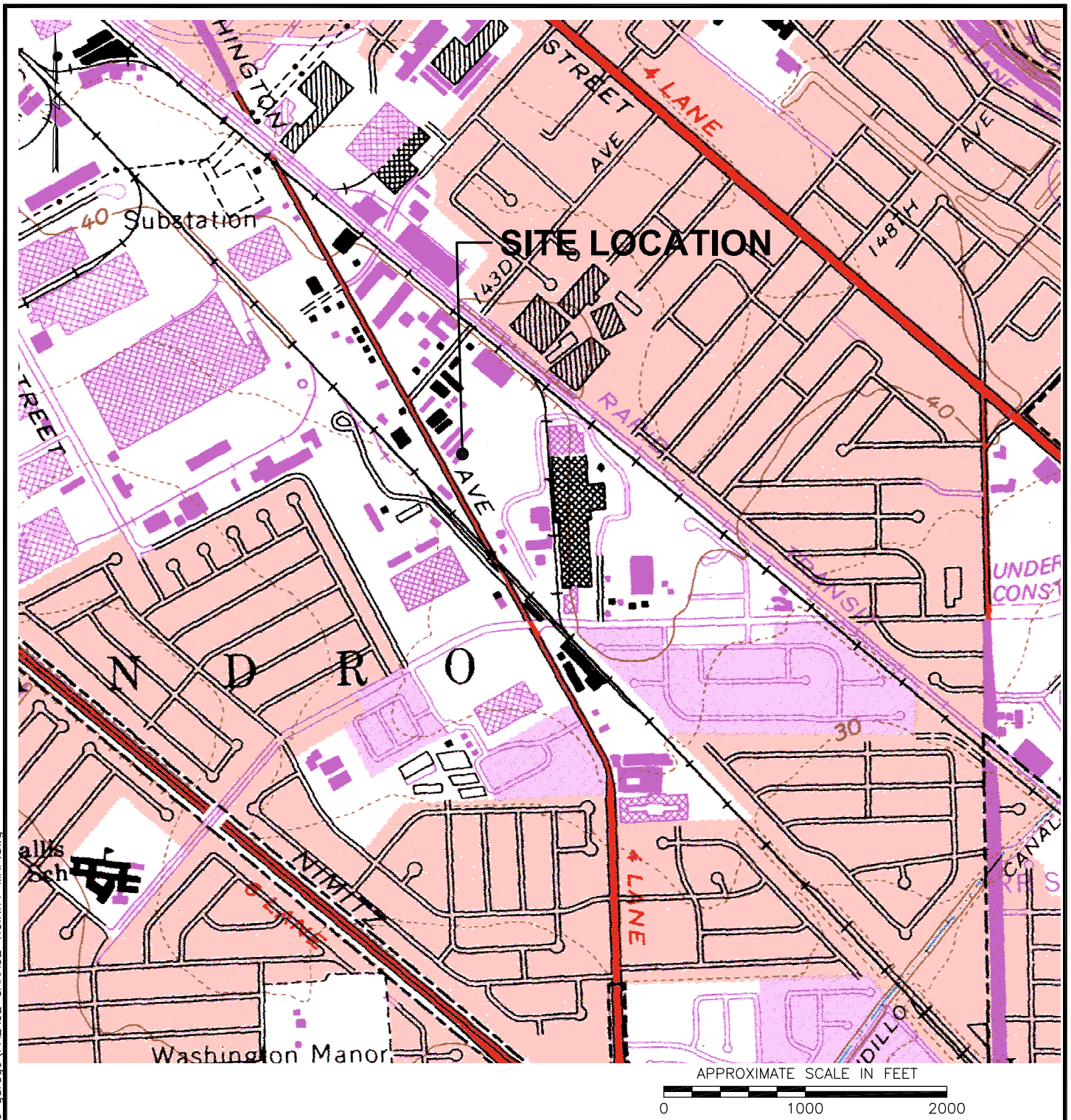
Matthew Farris, P.G.  
Project Geologist



**ATTACHMENTS:**

- |              |   |
|--------------|---|
| Figure 1     | Vicinity Map  |
| Figure 2     | TPHg/GRO in Soil from 13 to 16 feet bgs with Isoconcentration Contour |
| Figure 3     | Proposed DPE Well and System Location Plan                            |
| Table 1      | Soil Analytical Data  |
| Table 2      | Groundwater Elevation and Analytical Data                             |
| Attachment A | ACEH correspondence   |

cc: Mr. Jeff Kerry, Kerry & Associates  
Mr. Gerald Donnelly



20101130.14161396 D:\Client Drawings\Closure\palace garage VICINITY MAP.dwg

REFERENCE:  
 USGS 7.5 MIN QUAD MAP TITLED: SAN LEANDRO, CALIFORNIA DATED: 1959 REV: 1980

## FIGURE 1 SITE LOCATION MAP

PALACE GARAGE  
 1436 WASHINGTON AVENUE  
 SAN LEANDRO, CALIFORNIA



**CLOSURE SOLUTIONS, INC.**

4600 Northgate Boulevard • Suite 230  
 Sacramento • California • 95834  
 Phone: (800) 988-7880

20120724.10434583 D:\Client Drawings\Closure\palace\_garage\palace\_garage\PALACE\_GRO\_IN\_SOIL.dwg

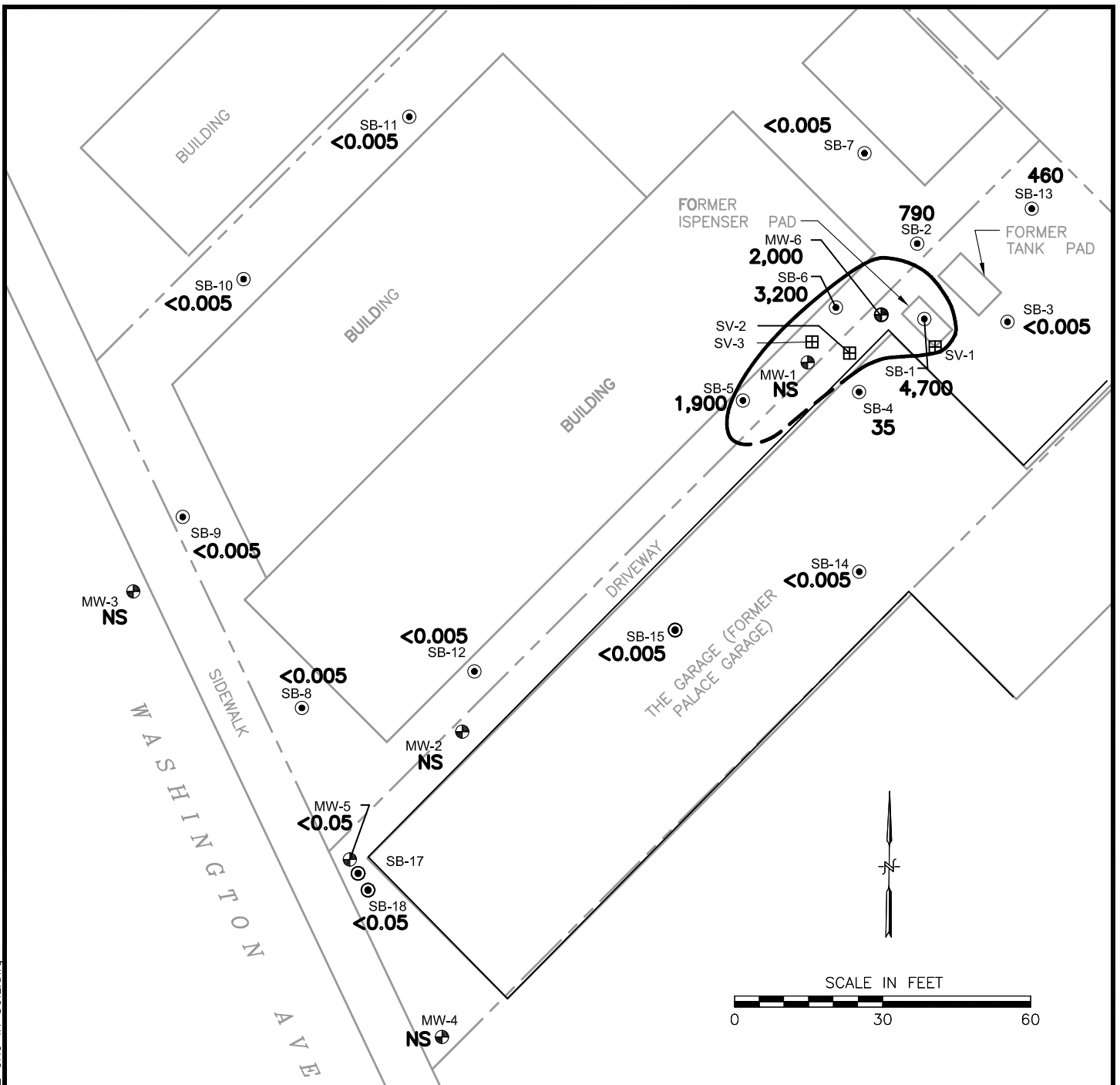



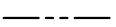
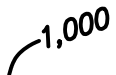


FIGURE 2

TPHg/GRO IN SOIL FROM 13 TO 16 FEET BGS WITH ISOCONCENTRATION CONTOUR

PALACE GARAGE  
14336 WASHINGTON AVENUE  
SAN LEANDRO, CALIFORNIA

**LEGEND:**

-  GROUNDWATER MONITORING WELL LOCATION
-  SOIL BORING LOCATION
-  SOIL VAPOR PROBE
-  PROPERTY LINE
-  1,000 TPHg GRO/TPHg CONCENTRATION CONTOUR INTERVAL DASHED WHERE INFERRED (mg/kg)
- 35** GRO/TPHg CONCENTRATION (mg/kg)
- NS** NOT SAMPLED

**NOTES:**

1. BASEMAP SOURCE: MORROW SURVEYING, 2/05/03



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20130226.16154533 D:\Client Drawings\Closure\palace\_garage\palace\_site\_plan.dwg

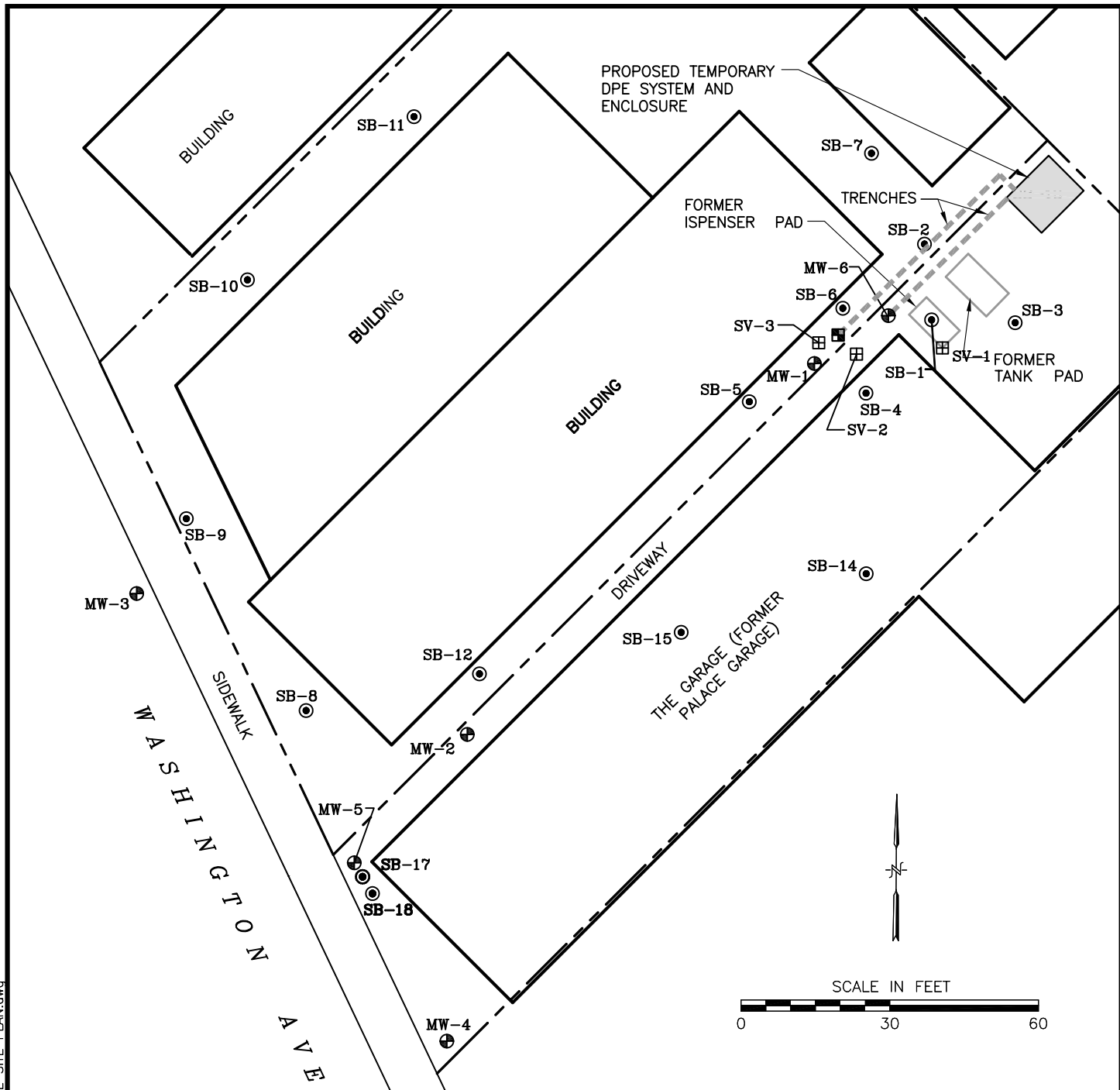


FIGURE 3

## PROPOSED DPE WELL AND SYSTEM LOCATION PLAN

PALACE GARAGE  
14336 WASHINGTON AVENUE  
SAN LEANDRO, CALIFORNIA



4600 Northgate Boulevard • Suite 230  
Sacramento • California • 95834  
Phone: (800) 988-7880

### LEGEND:

- PROPOSED DPE WELL LOCATION
- PROPERTY LINE
- + GROUNDWATER MONITORING WELL LOCATION
- SOIL BORING LOCATION
- ⊞ SOIL VAPOR PROBE

### NOTES:

1. BASEMAP SOURCE: MORROW SURVEYING, 2/05/03

**Table 1**  
Soil Analytical Data

Former Palace Garage  
14336 Washington Avenue  
San Leandro, California

Sample ID	Date Sampled	Depth (feet bgs)	TPHg/GRO (mg/kg)	B (mg/kg)	T (mg/kg)	E (mg/kg)	X (mg/kg)	MTBE (mg/kg)
SB-1	2/1/1999	10-10.5	440	0.51	2.6	8.1	47	<0.5
SB-1	2/1/1999	15-15.5	4,700	12	21	88	480	<10
SB-2	2/1/1999	10-10.5	<1.0	0.016	0.012	<0.005	0.016	<0.05
SB-2	2/1/1999	15-15.5	790	0.64	4.8	5.3	18	<0.5
SB-3	2/1/1999	10-10.5	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05
SB-3	2/1/1999	15-15.5	<1.0	<0.005	0.021	<0.005	0.01	<0.05
SB-4	2/1/1999	10-10.5	<1.0	<0.005	0.01	<0.005	0.007	<0.05
SB-4	2/1/1999	15-15.5	35	0.029	0.32	0.13	0.22	<0.05
SB-5	3/23/1999	10-10.5	2.8	0.092	0.023	0.064	0.11	<10
SB-5	3/23/1999	15-15.5	1,900	4.3	14	35	170	<1
SB-6	3/23/1999	10-10.5	880	3.5	16	18	89	<10
SB-6	3/23/1999	15-15.5	3,200	22	160	89	460	<0.05
SB-7	3/23/1999	10-10.5	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05
SB-7	3/23/1999	15-15.5	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05
SB-8	7/29/1999	14-14.5	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05
SB-9	7/29/1999	15-15.5	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05
SB-10	7/29/1999	14-14.5	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05
SB-11	7/29/1999	15-15.5	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05
SB-12	7/29/1999	15-15.5	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05
SB-13	7/29/1999	7.5-8	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05
SB-13	7/29/1999	15-15.5	460	6.3	3.3	13	42	<0.5
SB-14	7/29/1999	15-15.5	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05
SB-15	7/29/1999	15-15.5	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05
SB-16-15	5/19/2000	15	<0.06	<0.005	<0.005	<0.005	<0.005	<0.005
SB-17-19	5/19/2000	19	0.292	<0.005	<0.005	<0.005	<0.005	<0.005
SB-18-16.5	7/26/2010	16.5	<0.5	<0.005	<0.005	<0.005	<0.010	--
MW-5	1/24/2012	13	<0.50	<0.005	<0.005	0.0076	0.0364	--
MW-6	1/24/2012	10	3,600	0.59	0.56	77	361	--
	1/24/2012	13	2,000	0.19	0.5	40	170	--

**ABBREVIATIONS:**

TPHg/GRP	=	Total Petroleum Hydrocarbons as gasoline/ Gasoline Range Organics (C6-C12)
B	=	Benzene
T	=	Toluene
E	=	Ethylbenzene
X	=	Total xylenes
feet bgs	=	Feet below ground surface
mg/kg	=	Milligrams per kilogram (parts per million [ppm])
<	=	Not detected at or above specified laboratory reporting limit

**LIMITATIONS:**

Background information, including but not limited to previous field measurements, analytical results, Site plans, and other data have been obtained from previous consultants, and/or third parties, in the preparation of this report. Closure Solutions has relied on this information as furnished. Closure Solutions is not responsible for, nor has it confirmed the accuracy of data collected or generated by

**Table 2**  
**Groundwater Elevation and Analytical Data**

Palace Garage  
14336 Washington Avenue  
San Leandro, California

Well ID	Date Sampled	Casing Elevation (Feet MSL)	Depth To Water (Feet)	Groundwater Elevation (Feet)	TPHg/ GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	Naphthalene (µg/L)
MW-1	12/31/2002	37.59	13.62	23.97	48,000	1,030	2,380	1,690	9,220	---
	9/22/2006		13.33	24.26	44,000	870	2,200	720	9,700	---
	12/21/2006		13.94	23.65	17,000	240	980	180	5,000	---
	3/29/2007		13.71	23.88	2,000	30	85	23	550	---
	9/27/2007		15.53	22.06	540	14	3.9	44	87	---
	12/20/2007		15.69	21.90	280	4.3	1.3	15	37	---
	2/21/2008		13.72	23.87	19,000	300	150	1,100	4,900	---
	5/15/2008		14.60	22.99	7,200	140	50	370	2,040	---
	8/7/2008		15.62	21.97	820	13	3.1	44	100	---
	11/13/2008		16.14	21.45	670	10	2.1	31	110	---
	6/19/2009		15.15	22.44	1,490	85.8	13.4	164	310	---
	11/3/2009		15.98	21.61	75	6.0	0.70	12	40.5	---
	5/4/2010		13.40	24.19	18,000	300	61	880	4,070	---
	11/8/2010		15.83	21.76	170	4.9	ND<0.50	7.7	24	---
	4/22/2011		12.34	25.25	3,800	250	48	810	3,260	---
	12/15/2011		14.77	22.82	1,500	21	0.88	29	4.6	---
	5/9/2012		13.56	24.03	20,000	190	27	810	3,150	---
	11/8/2012		15.68	21.91	630	2.8	1.4	30	51.9	---
	<b>2/7/2013</b>		<b>13.99</b>	<b>23.60</b>	---	---	---	---	---	---



**Table 2**  
**Groundwater Elevation and Analytical Data**  
Palace Garage  
14336 Washington Avenue  
San Leandro, California

Well ID	Date Sampled	Casing Elevation (Feet MSL)	Depth To Water (Feet)	Groundwater Elevation (Feet)	TPHg/ GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	Naphthalene (µg/L)
MW-2	12/31/2002	37.12	13.38	23.74	1,670	1,030	11.00	23	16.4	---
	9/22/2006		13.25	23.87	1,800	53	1.40	14	7.5	---
	12/21/2006		13.89	23.23	--	--	--	--	--	---
	3/29/2007		13.57	23.55	2,100	51	1.30	--	4.5	---
	9/27/2007		15.37	21.75	1,600	58	0.99	12	3.7	---
	12/20/2007		15.40	21.72	1,500	63	1.1	16	4.9	---
	2/21/2008		13.60	23.52	710	23	ND<0.50	6.2	1.1	---
	5/15/2008		14.47	22.65	1,600	84	1.4	28	9.8	---
	8/7/2008		15.48	21.64	2,100	86	1.6	22	9.0	---
	11/13/2008		15.99	21.13	2,300	46	1.1	15	4.5	---
	6/19/2009		15.03	22.09	931	60.1	ND<2.0	30	3.1	---
	11/3/2009		15.87	21.25	220	22	0.55	9.4	5.05	---
	5/4/2010		12.92	24.20	950	14	0.57	9.1	13.2	---
	11/8/2010		15.71	21.41	1,900	45	1.6	44	9.28	---
	4/22/2011		12.27	24.85	1,400	30	1.2	29	5.78	---
	12/15/2011		14.86	22.26	4,300	160	26	480	790	---
	5/9/2012		13.44	23.68	4,300	21	0.65	23	7.77	---
	11/8/2012		15.54	21.58	1,700	68	2.6	63	14.4	---
	<b>2/7/2013</b>		<b>13.90</b>	<b>23.22</b>	---	---	---	---	---	---

**Table 2**  
**Groundwater Elevation and Analytical Data**

Palace Garage  
14336 Washington Avenue  
San Leandro, California

Well ID	Date Sampled	Casing Elevation (Feet MSL)	Depth To Water (Feet)	Groundwater Elevation (Feet)	TPHg/ GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	Naphthalene (µg/L)
MW-3	12/31/2002	37.01	13.29	23.72	<50	<0.5	<0.5	<0.5	<1.0	---
	9/22/2006		13.14	23.87	<50	<0.5	<0.5	<0.5	<1.5	---
	12/21/2006		--	--	--	--	--	--	--	---
	3/29/2007		13.47	23.54	<50	<0.5	<0.5	<0.5	<1.5	---
	9/27/2007		15.29	21.72	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	---
	12/20/2007		15.30	21.71	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	---
	2/21/2008		---	---	---	---	---	---	---	---
	5/15/2008		14.35	22.66	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---
	8/7/2008		15.39	21.62	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	---
	11/13/2008		15.90	21.11	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	---
	6/19/2009		14.94	22.07	ND<50	ND<1.0	ND<1.0	ND<1.0	ND<2.0	---
	11/3/2009		15.76	21.25	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---
	5/4/2010		13.20	23.81	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.5	---
	11/8/2010		15.62	21.39	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.5	---
	4/22/2011		12.17	24.84	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.5	---
	12/15/2011		14.63	22.38	150	1.5	ND<0.50	3.0	12.2	---
	5/9/2012		13.36	23.65	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.5	---
	11/8/2012		15.48	21.53	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.5	---
	<b>2/7/2013</b>			<b>13.79</b>	<b>23.22</b>	---	---	---	---	---

**Table 2**  
**Groundwater Elevation and Analytical Data**

Palace Garage  
14336 Washington Avenue  
San Leandro, California

Well ID	Date Sampled	Casing Elevation (Feet MSL)	Depth To Water (Feet)	Groundwater Elevation (Feet)	TPHg/ GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	Naphthalene (µg/L)
MW-4	12/31/2002	37.09	13.45	23.64	<50	<0.5	<0.5	<0.5	<1.0	---
	9/22/2006		13.40	23.69	<50	<0.5	<0.5	<0.5	<1.5	---
	12/21/2006		13.86	23.23	<50	<0.5	<0.5	<0.5	<1.5	---
	3/29/2007		13.69	23.40	<50	<0.5	<0.5	<0.5	<1.5	---
	9/27/2007		15.48	21.61	ND<50	1.5	ND<0.50	0.71	0.74	---
	12/20/2007		15.28	21.81	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	---
	2/21/2008		13.56	23.53	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---
	5/15/2008		14.58	22.51	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---
	8/7/2008		15.57	21.52	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	---
	11/13/2008		16.09	21.00	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	---
	6/19/2009		15.15	21.94	ND<50	ND<1.0	ND<1.0	ND<1.0	ND<2.0	---
	11/3/2009		16.03	21.06	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---
	5/4/2010		13.11	23.98	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.5	---
	11/8/2010		15.89	21.20	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.5	---
	4/22/2011		12.40	24.69	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.5	---
	12/15/2011		15.03	22.06	86	ND<0.50	ND<0.50	ND<0.50	1.3	---
	5/9/2012		13.51	23.58	ND<50	ND<0.50	0.84	ND<0.50	ND<1.5	---
	11/8/2012		15.64	21.45	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.5	---
	<b>2/7/2013</b>		<b>13.98</b>	<b>23.11</b>	---	---	---	---	---	---

**Table 2**  
**Groundwater Elevation and Analytical Data**  
Palace Garage  
14336 Washington Avenue  
San Leandro, California

Well ID	Date Sampled	Casing Elevation (Feet MSL)	Depth To Water (Feet)	Groundwater Elevation (Feet)	TPHg/ GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	Naphthalene (µg/L)
MW-5	2/2/2012	37.27	15.06	22.21	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.50	---
	5/9/2012		13.68	23.59	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.50	---
	resurvey 10/11/12	36.96								---
	11/8/2012		15.62	21.34	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.50	---
	<b>2/7/2013</b>		<b>13.91</b>	<b>23.05</b>	<b>ND&lt;50</b>	<b>ND&lt;0.50</b>	<b>ND&lt;0.50</b>	<b>ND&lt;0.50</b>	<b>ND&lt;1.50</b>	<b>ND&lt;1.0</b>
MW-6	2/2/2012	37.34	14.63	22.71	17,000	340	57	1,900	2,100	---
	5/9/2012		13.26	24.08	34,000	170	310	1,700	3,920	---
	11/8/2012		15.36	21.98	9,700	210	270	2,800	3,320	---
	<b>2/7/2013</b>		<b>13.63</b>	<b>23.71</b>	<b>7,700</b>	<b>250</b>	<b>240</b>	<b>2,800</b>	<b>4,790</b>	<b>1,100</b>

**Table 2**  
**Groundwater Elevation and Analytical Data**

Palace Garage  
 14336 Washington Avenue  
 San Leandro, California

Well ID	Date Sampled	Casing Elevation (Feet MSL)	Depth To Water (Feet)	Groundwater Elevation (Feet)	TPHg (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)
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ABBREVIATIONS:

- TPHg/ GRO total petroleum hydrocarbons as gasoline. Gasoline range organics
- B Benzene
- T Toluene
- E Ethylbenzene
- X Total xylenes
- µg/L Micrograms per liter (parts per billion [ppb])
- Not analyzed/measured/applicable
- ND< Not detected at or above specified laboratory reporting limit
- Bold** Current sampling event
- MSL mean sea level

LIMITATIONS:

Background information, including but not limited to previous field measurements, analytical results, Site plans, and other data have been obtained from previous consultants, and/or third parties, in the preparation of this report. Closure Solutions has relied on this information as furnished. Closure Solutions is not responsible for, nor has it confirmed the accuracy of data collected or generated by others.

**Attachment A**

**ACEH Correspondence**



ENVIRONMENTAL HEALTH SERVICES  
ENVIRONMENTAL PROTECTION  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502-6577  
(510) 567-6700  
FAX (510) 337-9335

January 24, 2013

Mr. Jeff Kerry  
Kerry & Associates  
151 Callan Avenue, Suite 300  
San Leandro, CA 94577  
(sent via electronic mail to:  
[djkerry1@aol.com](mailto:djkerry1@aol.com))

Mr. Jeffery Kerry  
Jeffery & Dolores Kerry Trust & Jame Donnelley et. al.  
19655 North Ripon Road  
Ripon, CA 95366

Subject: Request for a Revised Draft Corrective Action Plan; Fuel Leak Case No. RO00000208; Palace Garage (Global ID #T0600101043), 14336 Washington Avenue, San Leandro, CA 94578

Dear Mr. Kerry:

Alameda County Environmental Health (ACEH) staff has reviewed the case file including the *Feasibility Study / Corrective Action Plan*, dated July 24, 2012 (received August 1, 2012), and the *Fourth Quarter 2012 Groundwater Monitoring Report*, dated, November 30, 2012. The reports were prepared and submitted on your behalf by Closure Solutions, Inc. (Closure Solutions). Thank you for submitting the reports. ACEH notes that the Feasibility Study / Corrective Action Plan (FS/CAP) indicates that costs associated with remedial excavation or trailer-mounted Dual-Phase Extraction (DPE) are of the same order of magnitude, and is in general agreement that with appropriately screened DPE extraction wells, appears to offer a higher probably of success at the subject site. Data gaps are also present at the site and can be addressed in the revised Draft CAP.

Based on ACEH staff review of the case file, we request that you address the following technical comments and send us the reports described below.

#### **TECHNICAL COMMENTS**

- 1. Request for Revised Draft Corrective Action Plan** – Public participation is a requirement for the Corrective Action Plan process. Therefore, we request that you submit a revised Draft Corrective Action Plan (Draft CAP) for ACEH review; this is requested to include a work plan describing DPE installation and operation procedures, vendor selection, and permitting. Upon ACEH concurrence with a Draft CAP, ACEH will notify potentially affected members of the public who live or own property in the surrounding area of the proposed remediation described in the Draft CAP. Public comments on the proposed remediation will be accepted for a 30-day period.

ACEH requests you prepare a revised Draft CAP that meets the provisions of section 2725 of the UST regulations (CCR, Title 23, Chapter 16, section 2600, et seq.) and includes the following minimum information:

- Proposed (short-term) cleanup objectives and (long-term) cleanup goals, and the basis for both goals, and the time to reach the goals
- Summary of site characterization data
- Receptor information including likely future land use scenarios, adjacent land use and sensitive receptors, and potential groundwater receptors

- Evaluation of a minimum of three active remedial alternatives including discussion of feasibility, detailed cost effectiveness, estimated time to reach cleanup goals, and limitations for each remedial alternative
  - Detailed description of proposed remediation including confirmation sampling and monitoring during implementation
  - Post-remediation monitoring
  - Schedule for implementation of cleanup
2. **Request for Draft Fact Sheet and List of Recipients** – Following the submittal of the referenced Draft CAP, a Fact Sheet describing the selected remedial alternative must be prepared and sent out to the affected stakeholders in the vicinity of the subject site, including vicinity residents. In an effort to expedite review of the Draft CAP and to move this case forward, please generate a Draft Fact Sheet, using the attached example, and submit a List of Interested Parties who will be receiving the Fact Sheet, by the date listed below.
3. **Data Gap Identification** – The following data gaps exist at the site. Please include in your revised Draft CAP a plan to address these data gaps:
- a. **Lack of Soil Analytical Data in Upper 5 and 10 Foot Intervals** – At present there has been no collection of soil analytical data in the 0 to 5 foot depth range, and very limited data in the 5 to 10 foot depth range (beginning at a depth of 10 feet). Please refer to the Low-Threat Closure Policy for more details. As a consequence, ACEH requests the collection and analysis of multiple soil samples in both depth ranges.
  - b. **Collection of All Appropriate Analytical Data** – Please analyze soil and groundwater for naphthalene by appropriate methodology.
4. **Request for Quarterly Groundwater Monitoring** – Please collect and analyze groundwater from new wells MW-5 and MW-6 on a quarterly basis for a period of one year. This is subject to modification depending on the consistency of results. Please submit groundwater monitoring reports by the dates identified below.

### **TECHNICAL REPORT REQUEST**

Please upload technical reports to the ACEH ftp site (Attention: Mark Detterman), and to the State Water Resources Control Board's Geotracker website, in accordance with the specified file naming convention below, according to the following schedule:

- **March 1, 2013** – Revised Draft Corrective Action Plan  
File to be named: RO208\_CAP\_yyyy-mm-dd
- **March 8, 2013** – Draft Public Participation Fact Sheet and List of Interested Parties  
File to be named: RO208\_GWM\_R\_yyyy-mm-dd
- **March 8, 2013** – Quarterly Groundwater Monitoring Report  
File to be named: RO208\_GWM\_R\_yyyy-mm-dd
- **June 7, 2013** – Quarterly Groundwater Monitoring Report  
File to be named: RO208\_GWM\_R\_yyyy-mm-dd
- **90 Days After CAP Approval** – Remedial Progress Report  
File to be named: RO208\_REM\_R\_yyyy-mm-dd

These reports are being requested pursuant to California Health and Safety Code Section 25296.10. 23 CCR Sections 2652 through 2654, and 2721 through 2728 outline the responsibilities of a responsible party in response to an unauthorized release from a petroleum UST system, and require your compliance with this request.



Mr. Jeff Kerry  
RO0000208  
January 24, 2013, Page 3

Online case files are available for review at the following website: <http://www.acgov.org/aceh/index.htm>. If your email address does not appear on the cover page of this notification, ACEH is requesting you provide your email address so that we can correspond with you quickly and efficiently regarding your case.

If you have any questions, please call me at (510) 567-6876 or send me an electronic mail message at [mark.detterman@acgov.org](mailto:mark.detterman@acgov.org).

Sincerely,

A handwritten signature in black ink, appearing to read "Mark E. Detterman", with a long horizontal flourish extending to the right.

Mark E. Detterman, PG, CEG  
Senior Hazardous Materials Specialist

Enclosures: Attachment 1 – Responsible Party (ies) Legal Requirements / Obligations  
Electronic Report Upload (ftp) Instructions

cc: Matthew Farris, Closure Solutions, Inc, 4600 Northgate Blvd, Suite 230, Sacramento, CA 95834  
(sent via electronic mail to: [mfarris@closureolutions.com](mailto:mfarris@closureolutions.com))

Donna Drogos, (sent via electronic mail to [donna.drogos@acgov.org](mailto:donna.drogos@acgov.org))  
Mark Detterman (sent via electronic mail to [mark.detterman@acgov.org](mailto:mark.detterman@acgov.org))  
Electronic File, GeoTracker

**Attachment 1**  
**Responsible Party(ies) Legal Requirements/Obligations**

**REPORT/DATA REQUESTS**

These reports/data are being requested pursuant to Division 7 of the California Water Code (Water Quality), Chapter 6.7 of Division 20 of the California Health and Safety Code (Underground Storage of Hazardous Substances), and Chapter 16 of Division 3 of Title 23 of the California Code of Regulations (Underground Storage Tank Regulations).

**ELECTRONIC SUBMITTAL OF REPORTS**

ACEH's Environmental Cleanup Oversight Programs (Local Oversight Program [LOP] for unauthorized releases from petroleum Underground Storage Tanks [USTs], and Site Cleanup Program [SCP] for unauthorized releases of non-petroleum hazardous substances) require submission of reports in electronic format pursuant to Chapter 3 of Division 7, Sections 13195 and 13197.5 of the California Water Code, and Chapter 30, Articles 1 and 2, Sections 3890 to 3895 of Division 3 of Title 23 of the California Code of Regulations (23 CCR). Instructions for submission of electronic documents to the ACEH FTP site are provided on the attached "Electronic Report Upload Instructions."

Submission of reports to the ACEH FTP site is in addition to requirements for electronic submittal of information (ESI) to the State Water Resources Control Board's (SWRCB) Geotracker website. In April 2001, the SWRCB adopted 23 CCR, Division 3, Chapter 16, Article 12, Sections 2729 and 2729.1 (Electronic Submission of Laboratory Data for UST Reports). Article 12 required electronic submittal of analytical laboratory data submitted in a report to a regulatory agency (effective September 1, 2001), and surveyed locations (latitude, longitude and elevation) of groundwater monitoring wells (effective January 1, 2002) in Electronic Deliverable Format (EDF) to Geotracker. Article 12 was subsequently repealed in 2004 and replaced with Article 30 (Electronic Submittal of Information) which expanded the ESI requirements to include electronic submittal of any report or data required by a regulatory agency from a cleanup site. The expanded ESI submittal requirements for petroleum UST sites subject to the requirements of 23 CCR, Division, 3, Chapter 16, Article 11, became effective December 16, 2004. All other electronic submittals required pursuant to Chapter 30 became effective January 1, 2005. Please visit the SWRCB website for more information on these requirements. ([http://www.waterboards.ca.gov/water\\_issues/programs/ust/electronic\\_submittal/](http://www.waterboards.ca.gov/water_issues/programs/ust/electronic_submittal/))

**PERJURY STATEMENT**

All work plans, technical reports, or technical documents submitted to ACEH must be accompanied by a cover letter from the responsible party that states, at a minimum, the following: "I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge." This letter must be signed by an officer or legally authorized representative of your company. Please include a cover letter satisfying these requirements with all future reports and technical documents submitted for this fuel leak case.

**PROFESSIONAL CERTIFICATION & CONCLUSIONS/RECOMMENDATIONS**

The California Business and Professions Code (Sections 6735, 7835, and 7835.1) requires that work plans and technical or implementation reports containing geologic or engineering evaluations and/or judgments be performed under the direction of an appropriately registered or certified professional. For your submittal to be considered a valid technical report, you are to present site specific data, data interpretations, and recommendations prepared by an appropriately licensed professional and include the professional registration stamp, signature, and statement of professional certification. Please ensure all that all technical reports submitted for this fuel leak case meet this requirement.

**UNDERGROUND STORAGE TANK CLEANUP FUND**

Please note that delays in investigation, late reports, or enforcement actions may result in your becoming ineligible to receive grant money from the state's Underground Storage Tank Cleanup Fund (Senate Bill 2004) to reimburse you for the cost of cleanup.

**AGENCY OVERSIGHT**

If it appears as though significant delays are occurring or reports are not submitted as requested, we will consider referring your case to the Regional Board or other appropriate agency, including the County District Attorney, for possible enforcement actions. California Health and Safety Code, Section 25299.76 authorizes enforcement including administrative action or monetary penalties of up to \$10,000 per day for each day of violation.

<b>Alameda County Environmental Cleanup Oversight Programs (LOP and SCP)</b>	<b>REVISION DATE:</b> July 25, 2012
	<b>ISSUE DATE:</b> July 5, 2005
	<b>PREVIOUS REVISIONS:</b> October 31, 2005; December 16, 2005; March 27, 2009; July 8, 2010
<b>SECTION:</b> Miscellaneous Administrative Topics & Procedures	<b>SUBJECT:</b> Electronic Report Upload (ftp) Instructions

The Alameda County Environmental Cleanup Oversight Programs (petroleum UST and SCP) require submission of all reports in electronic form to the county's FTP site. Paper copies of reports will no longer be accepted. The electronic copy replaces the paper copy and will be used for all public information requests, regulatory review, and compliance/enforcement activities.

## REQUIREMENTS

- **Please do not submit reports as attachments to electronic mail.**
- Entire report including cover letter must be submitted to the ftp site as a **single Portable Document Format (PDF) with no password protection.**
- It is **preferable** that reports be converted to PDF format from their original format, (e.g., Microsoft Word) rather than scanned.
- **Signature pages and perjury statements must be included and have either original or electronic signature.**
- **Do not password protect the document.** Once indexed and inserted into the correct electronic case file, the document will be secured in compliance with the County's current security standards and a password. **Documents with password protection will not be accepted.**
- Each page in the PDF document should be rotated in the direction that will make it easiest to read on a computer monitor.
- Reports must be named and saved using the following naming convention:

RO#\_Report Name\_Year-Month-Date (e.g., RO#5555\_WorkPlan\_2005-06-14)

## Submission Instructions

- 1) Obtain User Name and Password
  - a) Contact the Alameda County Environmental Health Department to obtain a User Name and Password to upload files to the ftp site.
    - i) Send an e-mail to [deh.loptoxic@acgov.org](mailto:deh.loptoxic@acgov.org)
  - b) In the subject line of your request, be sure to include "**ftp PASSWORD REQUEST**" and in the body of your request, include the **Contact Information, Site Addresses, and the Case Numbers (RO# available in Geotracker) you will be posting for.**
- 2) Upload Files to the ftp Site
  - a) Using Internet Explorer (IE4+), go to <ftp://alcoftp1.acgov.org>
    - (i) Note: Netscape, Safari, and Firefox browsers will not open the FTP site as they are NOT being supported at this time.
  - b) Click on Page located on the Command bar on upper right side of window, and then scroll down to Open FTP Site in Windows Explorer.
  - c) Enter your User Name and Password. (Note: Both are Case Sensitive.)
  - d) Open "My Computer" on your computer and navigate to the file(s) you wish to upload to the ftp site.
  - e) With both "My Computer" and the ftp site open in separate windows, drag and drop the file(s) from "My Computer" to the ftp window.
- 3) Send E-mail Notifications to the Environmental Cleanup Oversight Programs
  - a) Send email to [deh.loptoxic@acgov.org](mailto:deh.loptoxic@acgov.org) notify us that you have placed a report on our ftp site.
  - b) Copy your Caseworker on the e-mail. Your Caseworker's e-mail address is the entire first name then a period and entire last name @acgov.org. (e.g., firstname.lastname@acgov.org)
  - c) The subject line of the e-mail must start with the RO# followed by **Report Upload**. (e.g., Subject: RO1234 Report Upload) If site is a new case without an RO#, use the street address instead.
  - d) If your document meets the above requirements and you follow the submission instructions, you will receive a notification by email indicating that your document was successfully uploaded to the ftp site.