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Mr. Keith Nowell
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Ste. 250
Alameda, CA 94502-6577
keith.nowell@acgov.org

Subject: **Soil Management Plan**
3101 35th Avenue, Oakland, CA
ACEH Case No. R00003238; Global ID T10000010421

Dear Mr. Nowell,

I have read and acknowledge the content, recommendations and/or conclusions contained in the attached document or report submitted on my behalf to ACDEH's FTP server and the SWRCB's Geotracker Website.

Sincerely,



Ms. Mona Hsieh
Responsible Party Representative



Soil Management Plan

**3101 35th Avenue
Oakland, California**

December 14, 2017

Prepared for:

Green Oak Builders
888 Brannan Street, #101
San Francisco, CA 94103

Prepared by:

Almar Environmental
407 Almar Avenue
Santa Cruz, California 95060

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1.0 INTRODUCTION

Almar Environmental (Almar) appreciates the opportunity to work on the 3101 35th Avenue project in the City of Oakland, California (Figures 1 through 4). Almar has been retained to prepare this *Soil Management Plan* (SMP) as part of the redevelopment process for the subject site. Previous environmental investigations have identified limited subsurface contamination at the site (see Section 2.2). The purpose of the SMP is to establish procedures that will be followed should surficial or subsurface contamination be encountered during redevelopment activities.

2.0 SITE INFORMATION

The project site is located at 3101 35th Avenue in the city of Oakland, California (Figure 1). The site consists of a roughly rectangular property associated with Alameda County Assessor's parcel number 28-951-12-1. The site is located on the northern corner of the intersection of 35th Avenue and School Street. An Aerial Photograph of the Site Area is included as Figure 2 and a detailed Site Map is included as Figure 3.

2.1 Physical Setting

Based on the U.S. Geological Survey Oakland East, California Quadrangle 7.5 Minute Series Topo Map, the subject property is approximately 160 feet (ft) above mean sea level (msl). The topographic slope of the subject property and surrounding areas is generally to the west, towards the San Francisco Bay (Figure 1).

According to the *Geologic Map and Map Database of the Oakland Metropolitan Area, Alameda, Contra Costa, and San Francisco Counties, California*, the site lies upon Pleistocene alluvial fan and fluvial deposits (Qpaf) (Graymer, 1996). Site specific soils, encountered during previous investigations have been identified as predominately Clayey Gravel to Gravelly Clay (CL) of varying consistency and plasticity from the ground surface until the total depths explored (approximately 30 feet bgs) (Almar, 2015). Subsurface soils encountered during this current investigation are described in detail in Section 3.2.1 and depicted on the boring logs (Appendix C).

The nearest surface water to the site is the seasonal Peralta Creek, located approximately 800 feet north and north west of the subject site. The larger San Francisco Bay is located approximately 2.5 miles west of the site (Figure 1). Based upon topography of the area, regional groundwater flow is expected to be to the west/southwest (towards the San Francisco Bay). Site specific groundwater data is unavailable. However, an active leaking underground storage tank case is located directly across School Street from the subject site (Figure 2). The site is a former Exxon Service Station associated with 3055 35th Avenue (ACHCSA Case #RO0000271). Significant groundwater studies have been conducted at this site, including over 50 groundwater monitoring events since 1999. During the most recent groundwater monitoring event conducted at this site, static groundwater was encountered at between 12 and 16 feet bgs and has been shown to consistently flow in a west to west by southwest direction (Weber Hayes, 2015).

2.2 Site History

The subject site appears to have operated as a gasoline service station from at least 1929 until the early 1980s. In the later years the service station was owned and operated by Texaco. Texaco sold

the property in 1982. It appears that the USTs associated with the former Texaco station were previously located near the southern corner of the property (Figure 3) and were removed sometime prior to 1982. From the mid 1980s until the late 1990s the site was an auto parts sales and auto glass repair facility. The building and associated canopy appear to have remained unoccupied from at least 1995 until the buildings were demolished in 2014. The property is currently a vacant lot surrounded by a chain link fence.

2.3 Summary of Previous Environmental Investigations

Phase I Environmental Site Assessment (ESA) – January, 2005

On January 31, 2005 as part of a property transfer, a Phase I ESA was prepared for the subject site by Martin & Associates of Oakland, California (Martin). Part of the conclusions of that report found:

“No evidence of (current) storage tanks or pipelines was identified. Former USTs were reportedly removed when gasoline service station activities were discontinued in the early 1980s. No further action or investigation is recommended regarding storage tanks or pipelines at the project.”

Based upon these findings and recommendations, the current property owner proceeded with purchasing the property.

Phase I Environmental Site Assessment (ESA) – October, 2014

On October 3, 2014 a second Phase I ESA, as part of a loan process, was prepared for the subject site by Piers Environmental Services, Inc. of Mill Valley, California (Piers). Part of the conclusions of that report found:

*This assessment has revealed evidence of a **Recognized Environmental Condition (REC)** from the prior use of the Property. The Property operated as a gasoline service station from at least 1929 to 1982, apparently with several generations of tank locations.*

*The gasoline service station closed before environmental regulations existed that required the tanks to be removed and inspected by the regulatory agencies. PIERS was unable to obtain any information concerning tank removals. **Therefore, PIERS recommends performing a geophysical survey in the known tank locations to determine if the tanks have been removed.***

A groundwater monitoring well, MW-6, from an adjacent down-gradient LUST case at 3055 35th Avenue has detected 1,800 parts per billion (ppb) of Total Petroleum Hydrocarbons (TPH) as gasoline and 230 ppb of benzene, significantly above the Water Quality Objective of 1,000 ppb and one ppb, respectively.

*PIERS contacted Mr. Keith Nowell of the ACEH regarding the 3055 35th Avenue LUST case and the consultant’s claim that, based on well MW-6 in front of the Property, contamination from the Property was migrating to the 3055 35th site. **Therefore, PIERS recommends conducting a limited soil and groundwater site investigation to determine if the gasoline and benzene concentrations detected in well MW-6 are due to an on-site source of contamination from the Property.***

A Phase II investigation of soil and groundwater conditions and additional effort to determine if there are any tanks remaining at the Property should be completed.

UST Removal Activities – January, 2015

Based upon the findings of the Piers Phase I ESA, an underground survey of the property was conducted and three (3) 350 gallon USTs were identified on the property. Two of the tanks contained gasoline and were located along the western property boundary, along School Street. The third tank was a waste oil tank located near the center of the property. The tank locations are shown on Figure 3. The tanks were subsequently removed under permit by Environmental Restoration Services of Menlo Park, California (ERS). Confirmation soil samples were collected by ERS from below each of the former tanks and the two associated former pump island locations. Elevated concentrations of Total Petroleum Hydrocarbons as gasoline (TPHg) were detected in soil samples collected from below the former western most pump island (Table 1A and Figure 4). A detailed summary of the tank removal and initial sampling activities is documented in ERS's *Underground Tank Technical Closure Report*.

Interim Remedial Action by Overexcavation – April, 2015

Based upon the findings of the elevated hydrocarbon concentrations documented during the tank removal activities, ERS prepared and implemented an *Interim Remedial Action Workplan* for the subject site. Interim remedial activities consisted of overexcavated hydrocarbon impacted soils in the area of the former dispenser location. In total, approximately 25 cubic yards of non-hazardous petroleum impacted soils were excavated and transported to Newby Island Landfill under non-hazardous manifests. Interim remedial activities are documented in ERS's *Report of Interim Remedial Action*.

Data Gap Investigation Workplan and Site Conceptual Model – June, 2015

On June 25th, 2015 Almar prepared a *Data Gap Investigation Workplan and Site Conceptual Model* for the site. This Workplan identified several data gaps which remained unaddressed prior to the being eligible for closure under the State's Low Threat Closure Policy (LTCP). The Workplan, in addition to presenting an initial site conceptual model for the site, set forth a series of tasks to close those data gaps. The ACEH reviewed the Workplan and issued a directive letter approving the proposed scope of work. As such, the Workplan was implemented in November 2015 (see below).

Soil, Water, and Soil Gas Investigation – November, 2015

On December 4, 2015 Almar prepared a *Soil, Water, and Soil Gas Investigation & Updated LTCP Data Gap Analysis* for the site. This report documented the installation and sampling of three temporary borings for soil and groundwater as well as the installation and sampling of three soil gas sample points. Based upon the results of the investigation, the ACEH requested an additional investigation be conducted to further assess the extent of subsurface contamination at the site and adequately characterize the site as it pertains to the requirements contained within the LTCP. As such, Almar prepared a Workplan and subsequent Workplan Addendum to satisfy these requirements. The Workplan and Addendum were subsequently approved by the ACEH in their May 9, 2016 Directive Letter .

Soil, Water, and Soil Gas Investigation – July, 2016

On July 5, 2016 Almar prepared a *Soil, Water, and Soil Gas Investigation* report for the site. The report documented the installation and sampling of soil and grab groundwater samples from five (5) additional temporary borings (DP-6 through DP-10) and the installation and collection of soil gas samples from one (1) temporary soil gas sampling point (SG-4). The purpose of this investigation was to 1.) Further define

the extent of contaminants of concern in subsurface soils and groundwater identified in previous investigation, 2.) Determine if subsurface soils and groundwater have been impacted by the presence of subsurface hydraulic lifts formerly located near the northern property line, and 3.) Confirm the presence of PCE in soil vapor, previously detected in samples collected from the sand filled former tank pit. The results of this investigation found:

1. The vertical and lateral extent of CoCs in subsurface soils appear to be fully defined and contamination does not exist at concentrations exceeding either ESLs or recommended LTCP values.
2. The groundwater contaminate plume emanating from the subject site appears to be defined in the downgradient direction by wells RW-13 and RW-14 located on the former Exxon Station property and is less than 100 feet in length.
3. The results of this current sampling event confirmed the results of the previous sampling, as PCE was detected at a similar concentration of 310 $\mu\text{g}/\text{m}^3$ in SG-4.

Based upon these results, Almar recommended the case be reviewed for closure under the State's Low Threat Closure Policy (LTCP).

Case Review, Meeting with Oversight Agency, and Further Soil Gas Delineation – October, 2016

Based upon the findings and recommendations of the above referenced report, the ACEH called a meeting to discuss the case status. In the meeting the ACEH verbally agreed with Almar's recommendation that the case likely qualified for closure under the LTCP. However, further delineation of soil gas contaminants was necessary. As such, Almar prepared a *Soil Gas Sampling Proposal* which outlined a specific set of tasks to install and sample six (6) additional soil gas sampling points at the subject site. The proposal was approved by the ACEH in an email correspondence dated October 3, 2016 and the investigation was implemented in October 2016. The results of the investigation indicated that the fuel release case did appear to qualify for case closure under the LTCP.

Fuel Release Case Closure and Opening of Voluntary Remedial Action Case – 2017

Based upon the findings to date, the ACEH agreed that the fuel release case associated with the site qualified for case closure under the LTCP. As such, the case was processed for closure and a Closure Letter was issued on July 18, 2017 (Appendix A). However, because PCE was known to exist in soil vapor at concentrations exceeding regulatory action levels, the Responsible Party agreed to enter the Voluntary Remedial Action Program (VRAP) to 1.) further delineate the extent of PCE in soil vapor and 2.) prepare corrective action measures to mitigate the intrusion of PCE vapors into the proposed on-site development. An additional soil gas delineation investigation was completed by Almar in June of 2016.

Corrective Action Plan and Voluntary Remedial Action Case Closure – 2017

Following the results of the above described soil gas delineation investigation, a *Draft Corrective Action Plan* was prepared for the site by Almar on August 7, 2017. The Draft CAP was reviewed, approved, and conditional case closure was granted by the ACEH in their November 17, 2017 Directive Letter (Appendix A). One of the conditions of the closure was that a Site Management and Contingency Plan for Redevelopment Construction (SMP) be prepared prior to beginning redevelopment activities. The requested SMP is presented in the following sections.

3.0 SOIL MANAGEMENT PLAN OVERVIEW

3.1 SMP Applicability

As noted above, soil impacted with concentrations of COPCs may be present at various on-site locations. This SMP presents protocol for the following construction activities that may encounter COPCs:

- Demolition of existing concrete surfaces;
- Shallow excavation, and grading;
- Subsurface utility installation, maintenance, or repair, and;
- Building slab construction and other subsurface work.

A representative of Almar will be on-Site, as necessary, during the redevelopment process to oversee and ensure that all local, state, and federal laws are followed. Additionally, Contractors and their Subcontractors shall follow the soil management protocols presented in this SMP. If Contractors or their Subcontractors observe conditions indicative of contamination anywhere on-Site, they will follow the protocols presented in this document. Any observed or suspected contamination shall be reported to the Environmental Consultant (Almar) immediately.

3.2 Lead Regulatory Oversight Agency for Environmental Site Cleanup

Soil vapor, and to a lesser extent, soil and groundwater beneath the Site has been determined to be impacted from historic land use practices. Alameda County Department of Environmental Health's (ACDEH) Local Oversight Program for Hazardous Materials Releases (LOP) is the lead regulatory oversight agency for the environmental investigation and cleanup actions at the Site under Site Cleanup Program Case (SCP) No. RO0003238. Due to the presence soil and groundwater contamination at the Site corrective actions will be necessary to safely prepare the Site for redevelopment. The scope of corrective actions, which include installing a passive soil vapor mitigation system as outlined in the CAP, will be followed during construction.

3.3 SMP Purpose & Objectives

This SMP is designed to provide Green Oak Builders and the demolition and construction team with guidance for the proper handling and management of any contaminated soil that could be encountered during the demolition activities. It should be noted that due to the depth of first encountered groundwater (greater than 15 feet bgs), groundwater is not expected to be encountered during redevelopment activities.

The goals of this SMP are to provide detailed information regarding known environmental conditions at the Site and establish a decision-making structure to assist the construction team in the identification and management of contaminated soils, if they are encountered. The objectives of this SMP are as follows:

- Communicate information to Site construction workers about work scope limitations and Site environmental conditions;
- Present protocols for appropriate community protection;

- Present guidelines for health and safety precautions for on-Site workers who may access soils that could contain residual chemicals of concern;
- Present notification and reporting requirements;
- Present protocols for management of any contaminated media generated during the demolition activities; and;
- Present contingency procedures in the event that localized areas of unanticipated chemically-affected soil or other subsurface features of environmental concern are encountered during the demolition activities.

4.0 RESPONSIBILITY FOR SMP IMPLEMENTATION

Representatives for the property Owner will oversee implementation of the SMP at the Site. A copy of this SMP will be maintained at the Site at all times. The Owner and General Contractor(s) will make all third-party subcontractors working at the Site aware of the requirements of the SMP, and provide an electronic copy and hard-copy to all subcontractors that are performing activities covered by this SMP and who may encounter suspect subsurface conditions during execution of their work.

The project Environmental Consultant (Almar) will be present to assist the Owner and contractors with the implementation of this SMP when activities are being conducted in areas where contamination is known or suspected, or when any new, unknown conditions are encountered.

4.1 Activities Covered by the SMP

The following activities constitute the work covered under this SMP.

- **Encounters with Contaminated Subsurface Soils** – any activity – accidental or otherwise - occurring beneath the grade level of the existing ground surface;
- **Utility Line Encounters** – any subterranean encounter with electrical, telephone, water, sanitary sewer or storm drains that occurs during the redevelopment process, and;
- **Other** – other subgrade encounters or activities not expressly listed above.

4.2 Construction Team Contact Information

Prior to the initiation of construction activities that are covered under this SMP, the Owner will confirm the Owner's project representative and project Environmental Consultant listed below. Regular and 24-hour emergency contact information for these individuals will be confirmed and updated as necessary. A project contact sheet will be provided to the General Contractor and posted in an accessible and suitable location at the Site.

Project Role	Company Name	Name	Contact Information
Owner Representative	Green Oak Builders	Mona Hsieh	(510) 928-7888 mona.hsieh@yahoo.com
Construction Contractor	Kendu Construction	Kenneth Lam	(510) 220-0988
Project Environmental Consultant	Almar Environmental	Forrest Cook	(831) 420-7923 Cook.forrest@gmail.com

4.3 Worker Health and Safety

In addition to following the SMP, each Contractor and subcontractor is responsible for the safety of its employee and site visitors including but not limited to adherence to a health and safety plan and use of property-trained personnel:

- **Preparation of a Site-Specific Health and Safety Plan (HASP).** A HASP will be prepared for the project, as appropriate, in accordance with California Occupational Safety and Health Administration (CAL-OSHA) Construction Safety Orders within Title 8 of the California Code of Regulations (CCR). The General Contractor is responsible for notifying subcontractors and visitors of pertinent environmental conditions to ensure adequate protection for workers and visitors while on Site. Subcontractors may either adopt the General Contractor's HASP or prepare their own HASP. In the event that unanticipated conditions occur at the Site, the HASP will be modified accordingly.
- **Use of Properly-Trained Personnel.** Each contractor engaged in contact and management of contaminated soils or other environmental concerns (if encountered) will use properly trained personnel in accordance CCR, Title 29, Part 1910.120 Hazardous Waste Operations and Emergency Response (HAZWOPER) standards.

4.4 Community Protection During Site Redevelopment

Land use in the vicinity of the Site is mixed commercial and residential. During the development of the Site, the Owner and contractors will implement measures to control potential risks to the surrounding community from fugitive dust emissions. These activities will be implemented when there is the potential for exposed soil to affect the nearby community. It is anticipated that air monitoring will not be required as there will not likely be exposed soil surfaces.

4.5 Agreement and Acknowledgement Statement

Prior to commencement of any Site activities, the General Contractor and subcontractors of the Owner will read this plan and sign the Agreement and Acknowledgement Statement (Appendix B) to certify that they have read, understood, and agreed to abide by its provisions.

5.0 AGENCY NOTIFICATION & REPORTING REQUIREMENTS

The Owner will notify the ACDEH LOP and other agencies as applicable during Site activities in accordance with the protocols described below.

5.1 ACDEH Notification

The Owner will notify the ACDEH LOP and the ACDEH Certified Unified Program Agency (CUPA) during Site redevelopment activities in accordance with the protocols below.

5.1.1 Twenty-four (24) Hour Notification

The ACDEH LOP will be notified within 24 hours of discovery if any of the following potentially hazardous conditions are encountered:

- Releases spills or releases of hazardous substances or petroleum hydrocarbons to soil or water that are considered, based on best professional judgment and/or physical evidence (including but not limited to olfactory, visual, field instrument, and lab data), to be an immediate threat to human health and the environment; and/or;
- Discovery of unknown conditions (underground storage tanks, sumps, vaults, piping, etc.) or newly found contamination.

In the event of the discovery of USTs, vaults, hoists, & pipelines, the ACDEH CUPA must also be notified within 24 hours of the discovery.

5.1.2 Seventy-two (72) Hour Notification

The ACDEH LOP will be notified 72 hours in advance of ground disturbing activities in areas of known contamination or suspected contamination.

5.1.3 ACDEH LOP and CUPA Contact Information

The primary points of contact for the ACDEH LOP and CUPA are provided below. All agency notifications must be made by phone and email. An ACDEH contact sheet will be provided to the General Contractor and posted in an accessible and suitable location at the Site.

Keith Nowell, ACDEH LOP Case Supervisor	(510) 567-6764; keith.nowell@acgov.org
Dilan Roe, ACDEH LOP Program Manager	(510) 567-6767; dilan.roe@acgov.org
ACDEH CUPA	(510) 567-6700 dehalamedacers@acgov.org

5.2 Other Agency Notifications

In addition to the ACDEH notification requirements discussed above, other agency notifications may be required. Contact information for other agency notifications that may be required is provided below. Prior to the initiation of construction activities that are covered under this SMP, the Owner will confirm the contact information listed below. An agency contact sheet will be provided to the General Contractor and posted in an accessible and suitable location at the Site.

Conditions Posing an Immediate Threat. For life-threatening or serious hazardous materials incidents, the following number will be contacted immediately upon discovery.	
Local police, fire and rescue services	911
Releases to Water. For spills or releases of hazardous substances or petroleum hydrocarbons to surface water, the following agencies will be contacted immediately upon discovery.	
National Spill Response Center	(800) 424-8802
United States Coast Guard – San Francisco Sector (if spill is going to reach navigable waters)	(415) 399-3547
California Office of Emergency Services	(800) 852-7550; (916) 845-8911
California Regional Water Quality Control Board – San Francisco Bay Region	(510) 622-2300
Local Emergency Response Agency	911
VOC-Impacted Soil. If VOC-impacted soil is discovered during Site grading activities, the following agency will be notified.	
Bay Area Air Quality Management District (BAAQMD)	(415) 749-4900
Dust Complaints. For dust complaints during ground disturbing activities, the following agencies will be notified.	
City of Oakland Building Department	Alan Lu; (510) 690-6748
BAAQMD	(415) 749-4900

5.3 RCI Records Keeping & Reporting Requirements

Any excavation, disposal and import activities (if any) will be documented in daily field reports by the Contractor and/or Environmental Consultant and will kept at the Site and made available to ACDEH upon request. Documentation will include at a minimum the following, as applicable:

- **Underground Structures** – type, contents, characterization, and destination (abandoned in place or disposed of off-Site);
- **Impacted Soil** – origin, volume, characterization, and destination (transported to temporary soil locations within the Site, disposed of off-Site, and/or re-used on Site);
- **Imported Soil** – origin, volume, characterization, and destination (location on-Site);
- **Off-site Disposal Records** – date, time, trucking company, driver and vehicles used for the trip, equipment decontamination and tarping, waste/material type, volume, copies of bills-of-lading, and hazardous waste manifests; and
- **Dust Complaint Logs** – time, name and contact information, complaint description, earthwork activities associated with complaint, and measures taken to mitigate dust;
- **Analytical Reports** – copies of waste characterization laboratory analytical results.

Following completion of the work covered by this SMP, the Environmental Consultant will prepare a report for submittal to ACDEH that documents compliance with this SMP including soil sampling, removal and management of unknown structures, chemical analysis and proper disposal of contaminated materials and soil import. The report will include at a minimum the information described in Section 5.3 above.

6.0 ENVIRONMENTAL SITE CONDITIONS

Soil vapor, and to a less extent soil and groundwater, has been impacted at the Site from historic Site use. A summary of known environmental conditions in soil and groundwater is provided below. Tabulated results of analytical data are provided in Tables 1A through 3B.

6.1 Soil

Subsurface soils at the Site consist primarily of Clayey Gravel to Gravelly Clay (CL) of varying consistency and plasticity from the ground surface until the total depths explored (approximately 30 feet bgs). Known and suspected soil contamination includes the following:

- **Petroleum Impacts.** Petroleum impacted soils were historically impacted in the area of the site near the former dispenser islands (Figure 3). However, the majority of contaminants were removed during over excavation activities in 2015. It is not anticipated that petroleum-related impacted soil will be encountered in near-surface soil during redevelopment activities.

6.2 Groundwater

First encountered groundwater has been encountered at depths of approximately 15 feet below the existing ground surface. Petroleum hydrocarbons and associated BTEX compounds are present in groundwater beneath the Site at concentrations exceeding regulatory screening levels. Due to the depth of groundwater, it is not expected to be encountered during any of the site redevelopment activities.

6.3 Soil Vapor

Subsurface soil vapor at the site is known to be impacted with the following:

- **VOC impacts.** Soil vapor in the area of the site near the former dispenser islands and former Texaco tank pit (Figure 3) is known to have been historically impacted with halogenated VOCs, specifically tetrachloroethene (PCE).

6.4 Discovery of Unexpected Conditions

Due to historic Site including use as a commercial fueling facility, redevelopment activities may reveal unexpected conditions such as previously unidentified areas of contamination or evidence of underground structures such as USTs, vaults, hoists, sumps, maintenance pits, pipelines, etc.

7.0 PRE-FIELD ACTIVITIES

The pre-field activities include a description of planning and organizational aspects of the demolition activities.

7.1 Site Security and Access

During redevelopment activities, the Site will be secured to provide protection and safety to on-Site personnel and equipment, and to prevent unauthorized access to areas of the demolition activity. The existing fence surrounding the Property will be kept closed and secured. During non-working hours, the fencing will be fully closed and locked. During redevelopment activities, access will be restricted to authorized personnel only.

7.2 Traffic Control

Caution will be exercised during entrance and exiting of the work area to ensure safe and uninterrupted traffic flow. Entrance into and departure from the Site by trucks will be facilitated by a flagman, or comparable contractor personnel, as necessary. Once trucks have left the Site, they will follow specific haul routes to the disposal facilities.

7.3 Permits

All necessary permits for redevelopment activities, transportation, and/or air quality have been obtained for the building construction. These permits will be kept on-Site and made available for inspection during working hours. The procedures proposed for construction activities will comply with federal, State and local rules and regulations, regardless of whether permitting is required.

7.3 Notifications and Utility Clearance

The proposed excavation areas will be marked in white paint prior to contacting Underground Service Alert (USA) at least 48 hours prior to excavating, as required by law. A private utility locating service will be contracted prior to conducting the field activities to mark and/or clear proposed excavation locations relative to the presence and/or marked locations of potential subsurface utilities.

8.0 SOIL MANAGEMENT

Redevelopment activities include excavating soil in conjunction with installation of utility trenches, and building foundations. Any excess soil generated during grading may be temporarily stockpiled on-Site and either re-distributed for re-compaction on-Site as part of Site grading activities, or transported off-Site for disposal as long as all soil management and handling activities are conducted in accordance with applicable federal, state, and local regulations. During implementation of the project other data may be collected for profiling purposes and to further refine the quantities and classification of potential waste materials that may be generated.

8.1 Contingency Measures for Previously Unidentified Suspect Soils

The following contingency measures will be implemented in the event that previously unidentified suspected chemically-affected soil is identified during site excavation. All contingency measures will be conducted by HAZWOPER-trained environmental professionals in accordance with the HASP.

Additionally, as a precaution, the Environmental Consultant will be present during excavation and grading activities (if any) in areas of historic underground storage tanks, subsurface anomaly detections, and deeper soil contamination in case unexpected contamination or subsurface structures are encountered.

8.1.1 Identification of Contaminated Soil

The Contractor will be instructed to report indicators of contaminated soil, in particular, petroleum hydrocarbons. The three primary physical indicators of petroleum-related contamination in soil include staining, sheen, and petroleum-like odor, as described below:

- **Staining:** Generally, soil that is impacted with petroleum hydrocarbons exhibits gray, black or green staining, although other contaminants and natural conditions may also cause staining.
- **Sheen:** Sheen is another indication of petroleum contamination. Soil exhibiting sheen may appear shiny and reflective. Sheens from heavily impacted soil may appear iridescent with rainbow-like colors.
- **Odor:** Soil impacted with petroleum products, volatile organics, and other types of contamination may release vapors when exposed to the atmosphere. These vapors can be interpreted as an odor. Odor can be subjective, and inhalation of vapors from impacted soil is harmful to human health. Therefore, odor is considered an inadvertent field indicator and should not be used for continuous screening of soil.

If soil exhibiting evidence of contamination is encountered during excavation, the Contractor will cease excavation activities in the area and notify the Environmental Consultant within 24 hours. The Contractor will not conduct any work in the area of concern or replace any known or suspected contaminated soil in the excavation area without prior approval by the ACDEH LOP.

8.1.2 Preliminary Assessment

Preliminary assessment of the previously unidentified suspect soil will include confirmation that access control measures installed by the General Contractor are adequate to provide necessary protection to on-site workers and the public during the evaluation phase. Confirmation will consist of visual assessment of the installed barriers as well as monitoring of the air outside the control area.

Air sampling will be conducted around the perimeter of the secured area using a combination photoionization detector (PID) meter to measure volatile organic compounds (VOCs) in the breathing zone and a lower explosive limit (LEL)/oxygen (O₂) meter to measure concentrations of combustible gases and available oxygen. If the air sampling suggests that the control measures are improperly positioned to provide necessary protection to on-site workers, the barriers will be relocated as necessary.

The Environmental Consultant will conduct a preliminary assessment to determine if the previously unidentified suspect soil is considered a significant risk to human health or the environment. If field observations suggest that the suspect conditions are *de minimis* and: (1) do not present a threat to human health or the environment; or (2) would generally not be subject of an enforcement action if brought to the attention of appropriate governmental agencies; then the Environmental Consultant will terminate the contingency plan process and release the suspect areas to the General Contractor.

8.1.3 Evaluation of Previously Unidentified Suspect Soil

If conditions in the suspect area are not considered *de minimis*, the Environmental Consultant will notify the ACDEH LOP on behalf of the Owner within 24-hours of discovery and evaluate the nature and extent of the potentially chemically-affected soil in accordance with the protocols below.

- **In-Situ Soil Samples.** An in-situ soil sample will be collected from the same location and depth as the previously unidentified suspect soil and 1-foot below this depth. Additional samples will also be collected at the same depths at a minimum of four step-out locations to assess soil conditions around the suspect sample location. The four step-out locations will be located approximately 5 feet to the north, south, east, and west of the suspect sample location. Each sample will be collected using a pre-cleaned hand trowel and transferred into laboratory-supplied glass containers and observed for evidence of odors and staining and screened for VOCs using a PID. If any of the in-situ soil samples show evidence of odors and staining or VOCs are detected above 10 parts per million by volume (ppmv) then environmental sample(s) will be retained for analyses.
- **Stockpiled Soil Samples.** If previously unidentified suspect soil is stockpiled on-Site, samples will be obtained using a pre-cleaned hand trowel and transferred into laboratory-supplied glass containers. One 4-point composite sample will be collected for every 200 cubic yards of material generated per disposal/accepting facility requirements.
- **Laboratory Analysis.** Following soil sample collection, the containers will be labeled for identification and immediately placed in a chilled, thermally insulated cooler containing bagged ice or blue ice. The cooler containing the samples will then be delivered under chain-of-custody protocol to a state-certified laboratory. Discrete and composite samples will be submitted, at a minimum, for laboratory analysis of total petroleum hydrocarbons quantified as gasoline (TPHg) and VOCs by United States Environmental Protection Agency (U.S. EPA) Test Method 8260B and total petroleum hydrocarbons quantified as diesel (TPHd) and motor oil (TPHmo) by U.S. EPA Test Method 8015M. All soil samples submitted for analysis by U.S. EPA Method 8260B. Samples may (if necessary) also be analyzed for Title 22 metals using U.S. EPA Test Method 6010B or other constituents as determined by the Environmental Consultant and the ACDEH LOP or as part of waste characterization testing for off-Site disposal. If necessary, extractable metals tests (i.e., leaching test including waste extraction test [WET] and/or toxicity characteristic leaching procedure [TCLP] procedures) will be conducted on the samples with elevated total metals concentrations to establish if the soils are hazardous based on their leaching characteristics.

After the evaluation is complete, the Environmental Consultant will provide the Owner, General Contractor and the ACDEH LOP with conclusions regarding potential risks of the suspect material to human health and the environment as well as recommendations for proper removal and disposal of the affected soil. All soil removal work will be approved by the ACDEH LOP prior to implementation. If VOC-

affected soil is encountered, notification will be provided to BAAQMD as required in the guidelines and notification requirements set by Regulation 8, Rule 40 of the BAAQMD Rules and Regulations for aeration of contaminated soil.

8.2 Reuse of Concrete & Soil Importation

Reuse of crushed concrete or use of imported fill material will be characterized and approved by ACDEH prior to being placed at the Site in accordance with the Department of Toxic Substances Control (DTSC) *Information Advisory – Clean Imported Fill Material* (DTSC, 2001) and the New Jersey Department of Environmental Protection *Guidance for Characterization of Concrete and Clean Material Certification for Recycling* (updated January 12, 2010). Discrete samples will be collected from the import source for characterization and specific laboratory analyses will be based on the fill source characteristics. The analytical results of the import soil samples will be compared to applicable screening criteria to evaluate whether the material is suitable for import to the Site.

9.0 CONTINGENCY MEASURES FOR DISCOVERY OF UNEXPECTED UNDERGROUND STRUCTURES

If any previously unidentified or unknown underground structures including tanks, vaults, sumps, containment structures, separators, or piping that has previously contained or has the potential to contain hazardous materials is encountered during Site grading activities, the ACDEH LOP and CUPA will be notified within 24-hours and consulted on appropriate next steps. USTs may be identified during grading and Site excavation activities by the presence of vent pipes that extend above the ground surface, product distribution piping that leads to the UST, fill pipes, backfill materials, or the underground structure itself. Other buried structures may not have features that extend above ground surface, and could be discovered only after contact with construction equipment.

The removal or burying of any of these structures without prior acknowledgement and approval from ACDEH is prohibited. Discovered structures will be assessed as follows:

- The structure will be inspected to assess whether it contains any indication of chemical residuals or free-phase liquids other than water. This assessment will be conducted by the Environmental Consultant, and will be based on visual evidence and the results of vapor monitoring using a PID. Under no circumstances will any personnel enter an unknown subsurface structure at any time. If chemicals are not indicated within the structure by the above-referenced means and with ACDEH approval the structure may be removed or abandoned in place in a safe manner by the contractor;
- If liquids or solids are present within the structure, measures will be taken to contain the liquids to avoid spills to the subsurface. Samples will be collected and submitted to a California-certified laboratory for analysis. Liquids or solids may be temporarily drummed, or liquids may be collected by vacuum truck, while analysis is pending. Based on analytical results, the liquids or solids will be disposed of under the direction of the Environmental Consultant in accordance with all applicable environmental laws and disposal requirements;
- If contaminated liquid or solids are present in the structure, the structure will be inspected for physical integrity following removal of the contaminated media. The Environmental Consultant

will document the results of this inspection, including an estimation of the volume and former use of the structure.

- If the physical inspection of the structure suggests that chemicals may have been released to the underlying soils additional environmental investigations of the underlying soils will be conducted to assess whether a release sufficient to warrant removal has occurred.
 - If, based on the opinion of the Environmental Consultant and ACDEH, it is assessed that the structure is intact, that subsurface releases of the chemicals to the underlying soils likely did not occur, and no free-phase liquids or chemical residues remain inside, removal of the structure may not be required for environmental reasons.
 - Otherwise, with ACDEH approval, the structure will be excavated and disposed of at the direction of the Environmental Professional. Once the structure is removed, soils adjacent to and beneath the structure will be assessed for contamination through visual observation and organic vapor analysis and the results documented. If soils are determined to be “contaminated” with VOCs in the context of BAAQMD Rule 8-40, the appropriate response will be determined in consultation with ACDEH.

ACDEH may require further response actions based on the discovery of hazardous materials that pose an unreasonable risk to human health and safety or the environment.

10.0 GROUNDWATER MANAGEMENT

The depth to groundwater at the Site is typically encountered at depths greater than 15 feet below ground surface. As the excavation is at most approximately 3-5 feet (for utilities and footings), construction dewatering is not anticipated. If dewatering of the excavation will be necessary during construction activities, a batch wastewater discharge permit will be obtained from the East Bay Municipal Utility District (EBMUD) for discharging water encountered during construction activities to the sanitary sewer system.

Construction de-watering effluent, if generated, shall be pumped into holding tanks and sampled and analyzed for the parameters required for the selected discharge point, such as the storm drain or sanitary sewer. If dewatering effluent is to be discharged to the storm drain, a National Pollutant Discharge Elimination System (NPDES) permit from the Regional Water Quality Control Board. Permits will be obtained from the City of Oakland Public Works Department and/or the East Bay Municipal Utility District (EBMUD) if dewatering effluent is discharged to the City of Oakland sanitary sewer system.

Chemical testing will be performed in accordance with the receiving facility’s requirements prior to discharge. If concentrations exceed the limits established for the discharge point, the dewatering effluent will either will be (1) transported off-Site for disposal at a licensed disposal facility or (2) treated and discharged following sampling and analysis to confirm the success of treatment.

11.0 WASTE MANAGEMENT

11.1 Soil Characterization Prior to Off-Site Disposal

No soil is anticipated to be characterized in-situ for potential off-site disposal. However, some soil may need to be placed in temporary on-site stockpiles because: (1) they require further characterization prior to off-site disposal; (2) short-term storage is necessary until haul trucks are available to transport the soil off-site for disposal; or (3) the need for processing or sorting prior to landfilling. If soil is not adequately characterized to directly load and haul then it may be necessary to stockpile and sample. Stockpiled soil will be characterized as required by the receiving facility. At a minimum, stockpiled soil shall be characterized using the October 2001 DTSC Fill Advisory Guidance. In the event very elevated data are found in a four-point composite sample, the Environmental Consultant may elect, in consultation with the Owner, to have the four individual subsamples run for that specific compound in an attempt to isolate the soils containing the worst impacts for disposal.

11.2 Soil Stockpile Management

Soil that is placed in temporary stockpiles will be well maintained at all times to prevent runoff/runoff and fugitive dust emissions. All stockpiled soil will be placed on impermeable plastic sheeting (minimum 10-mil-thick) with a berm around the perimeter of the stockpile. The plastic sheeting and berm will prevent the runoff of soil and potential contaminants to surrounding areas. The berm will be constructed with hay bales, dimensional lumber, or other equivalent methods. The bottom plastic sheeting will be lapped over the berm materials, and the soil stockpile will be covered with plastic sheeting to prevent erosion or leaching of contaminants to underlying soil and prevent exposure to precipitation and wind. Plastic sheeting that covers the soil stockpile will be secured using sand bags or equivalent. Following removal, the soil stockpile area will be restored to a pre-stockpile condition. Residual plastic or debris will also be disposed of following stockpile removal.

11.3 Decontamination Procedures

In order to prevent residual contamination from leaving the Site by construction equipment and personnel during remedial excavation activities, the following decontamination procedures will be followed:

- Prior to loading excavated materials into trucks, plastic sheeting will be placed on the ground such that any spilled material will be prevented from contacting the ground surface. Upon completion of loading, any debris will be placed in the transportation vessel and the plastic sheeting will be reused, or disposed.
- To minimize the spread of contaminated soil, equipment will be cleaned prior to movement out of active work zones. The equipment wheels/tires will be cleaned over plastic sheeting by means of shovels and stiff-bristled brooms or brushes until they are fully cleaned. Upon completion of cleaning, any debris will be placed in the appropriate transportation vessel and the plastic sheeting will be folded and disposed. Equipment exiting the Site will be inspected and logged for compliance with the Site decontamination requirements.

- Personal protective equipment, such as disposable coveralls, will be removed and discarded in the contamination reduction zone. In order to decontaminate reusable items such as work boots, a two-stage decontamination process will be used. This process will include washing in a detergent solution with a stiff-bristled brush and rinsing in clean water. The rinsate water will be distributed over contaminated soil (to be exported) for dust control purposes.

11.4 Off-Site Soil Disposal & Transportation Plan

Following acceptance of the excavated soil at an appropriate-licensed disposal facility, the soil will be loaded in licensed haul trucks (end-dumps or transfers) and transported off the Site following appropriate California and Federal waste manifesting procedures. The appropriate waste manifest documentation will be provided to truck drivers hauling the affected soil off-Site. Transportation equipment will be chosen to safely transport the expected volumes of soil, taking into consideration the types of roads to be traveled and their loading capacity. Routine truck maintenance and repairs will be performed at the contractor's premises prior to picking up loads of waste material from the Site.

As each truck is filled, an inspection will be made to verify that the waste soil is securely covered, to the extent practicable, and that the tires of the haul trucks are reasonably free of accumulated soil prior to leaving the site. During loading, dust and odor emissions will be monitored and mitigated as necessary. During transportation, the hauling trucks will be equipped to fully cover all soil and debris, such as with a heavy tarpaulin. A street sweeper will be made available, as needed, to keep the loading area clean. The soil will be wetted, as necessary, to reduce the potential for dust generation during loading and transportation activities.

A detailed log of the loads hauled from the Site will be maintained. The log will include, at a minimum, the date and the time trucks were loaded and off-loaded, the destination, size (volume and weight) of the load, description of contents, name and signature of the hauler, and name and signature of the contractor's representative. The waste will be off-loaded for treatment or disposal in a manner consistent with current Federal, State, and local regulations. Shipments of hazardous waste will be tracked with the appropriate hazardous waste manifests.

11.4.1 Off-Site Disposal Facilities

If soil is classified as hazardous waste by State and Federal standards, it will be disposed of at the Class I Kettleman Hills Landfill in Kettleman City, California, a licensed and approved facility. If soil is classified as non-hazardous waste by State and Federal standards, it will likely be disposed of at a Class II licensed landfill facility such as:

- Waste Management's Altamont Landfill in Livermore, California;
- Republic Services' Vasco Road Landfill in Livermore, California; or
- Allied Waste's Forward Landfill in Manteca, California.

11.4.2 Transportation Plan

All transportation activities will be performed in strict compliance with all regulations and ordinances. Hauling contractor(s) used to transport non-hazardous or hazardous waste will be fully licensed and

permitted by the State of California. For hazardous waste haulers, the selected transportation company will be certified by the State of California as a hazardous waste hauler, and appropriately permitted to haul contaminated waste material. All Department of Transportation (DOT) and California Highway Patrol (CHP) safety regulations will be strictly followed by both hazardous and non-hazardous waste haulers.

Transportation routes will be developed to minimize transporting the affected soil through residential areas. The affected soil will be transported via surface streets to the closest suitable freeway, which is Interstate 580. The proposed routes for transportation on Interstate 580 are as follows:

- To Interstate 580 East and West: Leaving the site along Railroad Avenue, travel west approximately 1-mile to Isabel Avenue, turn right and travel north on Isabel Avenue approximately 1-mile and use the appropriate ramp onto I-580.

The remainder of the freeway route(s) will be established upon selection of the appropriate landfill(s).

11.5 Wastewater and Groundwater Management Protocols

Wastewater generated during Site redevelopment, such as decontamination liquids, will be temporarily stored onsite. Decontamination water will be profiled and transported to an appropriate disposal or recycling facility. If a saturated zone is encountered during earthwork activities that produces accumulated water it will be temporarily containerized on-Site within portable aboveground industrial holding tanks. Holding tanks will be staged on the existing hardscape (i.e. concrete or asphalt) where feasible. Collected wastewater and groundwater will be transferred into a vacuum truck or 55-gallon steel drums for off-Site transportation and disposal.

11.6 Spill Response Plan

In the event of a spill, the Contractor will be responsible and prepared to respond in a safe and efficient manner, specific to the particular spill situation. Standards will be set and consistent procedures will be used for handling of spills, whether they are on-Site spills or spills occurring during transportation. Haulers will have an Emergency Spill Contingency Plan (ESCP) to ensure that all drivers and dispatchers know their responsibilities in the unlikely event that an accidental spill occurs while transporting contaminated material off-Site. The drivers and dispatchers will be required to know the procedures for emergency spill response. The ESCP will meet or exceed all Federal, State, and County regulations currently in effect. The provisions of the ESCP will be strictly adhered to, in order to ensure continued protection of the public safety and the environment. The HASP will address the handling of on-Site spills.

12.0 DUST AND ODOR EMISSIONS

During excavation activities, depending on soil and weather conditions, there is potential to generate airborne dust and fugitive emissions. Standard dust and fugitive emissions control measures will be followed during the ground disturbing activities to comply with OSHA and BAAQMD rules and accomplish the following goals:

- Reduce the potential for health impacts to workers;
- Reduce the potential for health impacts to facility neighbors;

- Prevent violations of ambient air quality standards;
- Minimize nuisance dust complaints from facility neighbors; and
- Minimize the migration of contaminants adhered to fugitive dust particles outside the Site.

12.1 Erosion, Dust, and Odor Control Measures

Once the pre-construction ground surface is stripped from the Site, the exposed soil will become susceptible to erosion by wind and water. Therefore, erosion control measures and dust control measures will in place before construction begins. Emission (dust) control measures will at a minimum comply with those established by OSHA and the BAAQMD for construction-related activities. Dust control measures will be based on "Best Management Practices" and will be used throughout all phases of construction.

12.1.1 Construction Mitigation Measures

The following basic construction mitigation measures will be implemented in accordance with recommendations for all proposed projects in the BAAQMD California Environmental Quality Act Air Quality Guidelines (BAAQMD, 2017):

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) will be watered two times per day;
- All haul trucks transporting soil, sand, or other loose material off-site will be covered; All visible mud or dirt track-out onto adjacent public roads will be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited; All vehicle speeds on unpaved roads will be limited to 15 miles per hour (mph);
- All roadways, driveways, and sidewalks to be paved will be completed as soon as possible. Building pads will be laid as soon as possible after grading unless seeding or soil binders are used;
- Idling times will be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure CCR Title 13, Section 2485). Clear signage will be provided for construction workers at all access points;
- All construction equipment will be maintained and properly tuned in accordance with manufacturer's specifications. All equipment will be checked by a certified mechanic and determined to be running in proper condition prior to operation; and
- A publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints will be posted. This person will respond and take corrective action within 48 hours. The BAAQMD's phone number will also be visible to ensure compliance with applicable regulations.

Dust level monitoring of air will be conducted to evaluate the potential exposure to Site personnel and to off-Site downwind receptors. The presence of airborne dust will be evaluated through the use of real time personal sampling equipment and perimeter air sampling. If the difference between the upwind and downwind dust monitoring levels exceeds 50 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$), additional dust control methods (i.e., applying additional water to disturbed areas) will be implemented.

12.1.2 Dust Suppression Measures

If dust is excessive, some or all of the following mitigation procedures may be implemented:

- Active areas adjacent to residences may need to be kept damp at all times.
- Apply water or (non-toxic) soil stabilizers to unpaved access roads, parking areas, and staging areas.
- Sweep (with water sweepers) paved access roads, parking areas, and staging areas.
- Cover or otherwise stabilize exposed soil stockpiles.
- Suspend construction activities that cause visible dust plumes and odors to extend beyond the limits of the Site.

12.1.3 Odor and Vapor Suppression Measures

By controlling the dust as described above, the emission of odor and vapors will be reduced to levels that likely will not pose a risk to the health of the public and Site workers. The water spray used to control dust will also significantly reduce the emissions of any potential volatiles that may be present in the soil. The selective loading and transportation of impacted soils could minimize the use of soil stockpiling, further reducing potential emissions of volatiles. Any active stockpile of contaminated soil or exposed excavation left overnight at the Site will be properly covered with plastic so emissions of volatiles will be minimized.

If odor is excessive and vapor emissions are detected, some or all of the following mitigation procedures may be implemented:

- Use of chemical suppressants mixed with water and applied using various applications such as spray or mist;
- Use of plastic sheeting to cover the sidewalls of the trench during non-active remedial activities will minimize the migration of VOCs and odors;
- Alternative work sequencing, such that excavation of soil with potential odor during mid- day or afternoon (during hot weather) is avoided;
- Any highly odorous soil could be segregated and placed inside a roll-off bin equipped with a lid. This will minimize the amount of highly odorous soil during loading; and
- Balancing the excavation with transportation so that the need for large stockpiles is reduced.

Other emissions include exhaust from remediation equipment. The equipment proposed for the Site redevelopment will be maintained properly so that exhaust emissions will be within acceptable standards.

12.2 Air Monitoring

If deemed necessary, and to the extent feasible, the presence of airborne contaminants will be evaluated through the use of portable monitoring equipment. Information gathered will be used to ensure the adequacy of the levels of protection being employed at the Site, and may be used as the basis for upgrading or downgrading levels of personal protection, at the discretion of the Site Safety Officer. In addition, this sampling equipment will be utilized to monitor the potential for the migration

of contaminants off-Site (i.e. fence line monitoring). Such monitoring will incorporate off-Site receptor type, wind direction, work tasks being performed, etc.

The following air sampling equipment will be utilized for site monitoring:

- Personal sampling pumps with appropriate sample collection media; and
- Dust monitors.

The above instruments will serve as the primary instruments for personal exposure monitoring. They will be utilized to fully characterize potential employee exposure and the need for equipment upgrades/downgrades.

12.0 STORM WATER MANAGEMENT

Other environmental controls may be required in the event that anticipated conditions at the Site change. In the event that remediation activities occur during the rainy season, then water management procedures will be implemented in addition to probable modifications of other plans, such as the HASP. The following procedures will be implemented at the Site during the rainy season:

- The weather forecast will be monitored. During the days heavy rain is forecasted, remediation activities may be stopped;
- The boundary of the remediation area will be properly bermed to prevent storm water from entering or leaving the remediation area;
- Storm water entering the remediation area from non-impacted areas and storm water originating within the excavated area will be pumped to settlement tanks and treated prior to discharge under permit;
- The excavation will be conducted in small sections so the exposed excavated area can be covered immediately if heavy rains occur;
- Procedures will be used to prevent wet soil from sticking to the tires of trucks used to haul soil off Site. These procedures may include plastic sheeting at the loading area, a tire wash at Site egress paths, and/or a stabilized gravel construction entrance; and
- Plastic sheeting will be used extensively to cover the area of excavation during non- working hours.

In general, the excavation will be kept as dry as possible in order to minimize the waste generated and the backfilling (as necessary) of the excavation can be conducted promptly. Storm water best management practices (BMPs) will be followed in accordance with the contractors Storm Water Pollution Prevention Plan (SWPPP) to be prepared for the Site. The BMPs for the Site development activities should include: use of fiber rolls; inlet protection; stabilized construction entrance; landscape and paving; street cleaning and catch basin cleaning.

13.0 CERTIFICATION AND DISTRIBUTION

To the best of our knowledge, all statements made in this report are true and correct. This report is based on data provided by the client and others, site conditions observed, samples collected and analytical data. No warranty whatsoever is made that this report addresses all contamination found on the site. Contractors and Subcontractors are responsible for review of this SMP prior commencing work at the Site and for the health and safety of their own employees and subcontractors. The Developer is responsible for review of the provisions of this SMP and for incorporating its guidelines into their project planning and specifications. This document was prepared for the sole use and benefit of Green Oak Builders, its project subsidiary, and its Contractors and Consultants at the Site. Neither this report, nor any of the information contained herein shall be used or relied upon for any purpose by any person or entities.

Respectfully submitted,



Forrest N. Cook
Owner/Principal Scientist
Almar Environmental
California Professional Geologist #8201 (exp 9/18)



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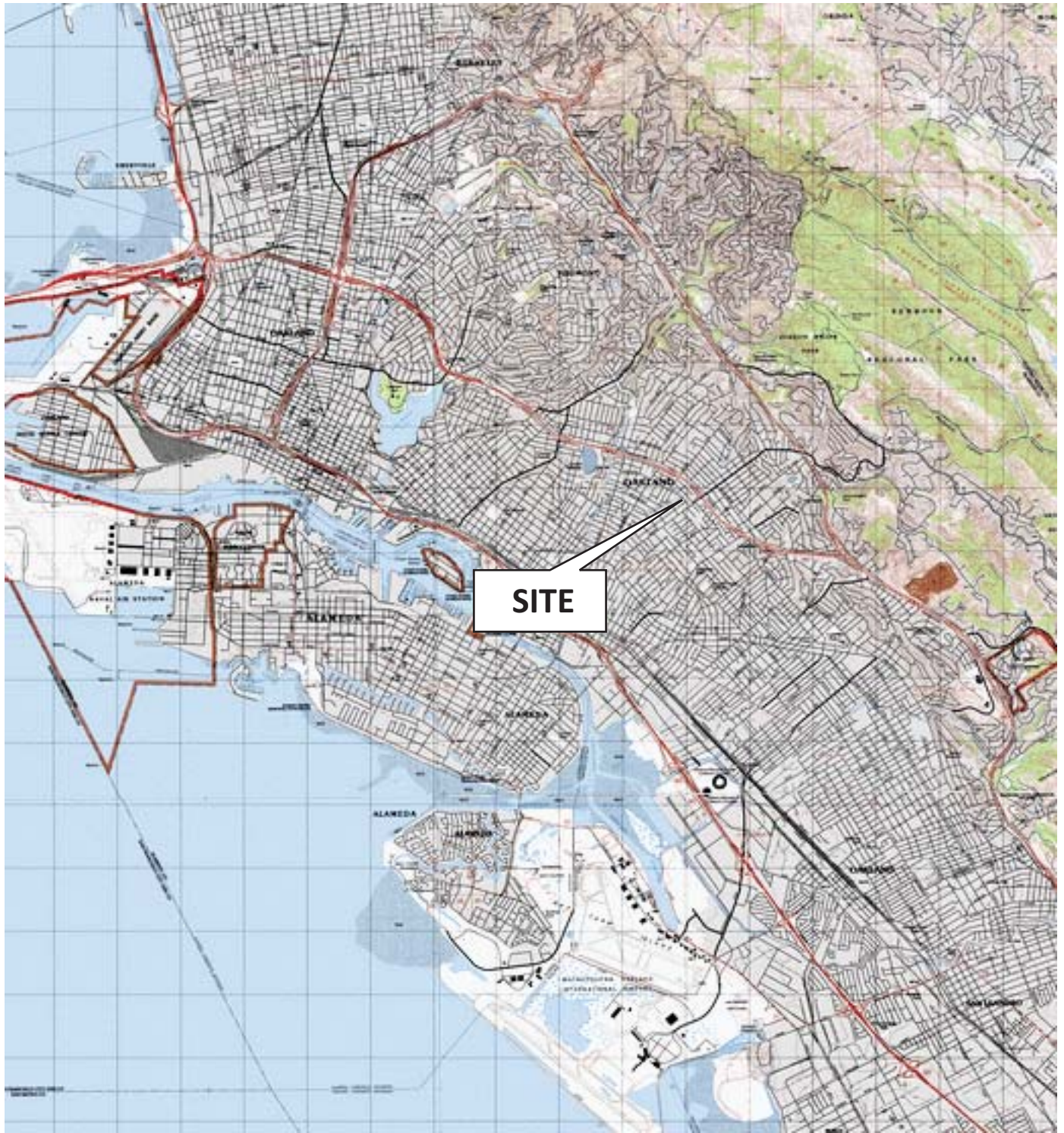
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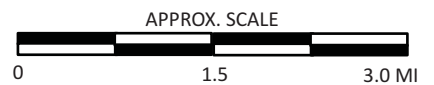
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FIGURES



SOURCE: USGS 1:24,000 SCALE SERIES OAKLAND EAST, CA QUAD



3101 35th AVENUE
OAKLAND, CALIFORNIA

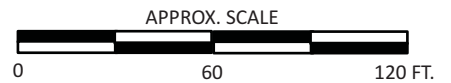
SITE VICINITY TOPO MAP

FIGURE

1



SOURCE: Google Earth, 2015

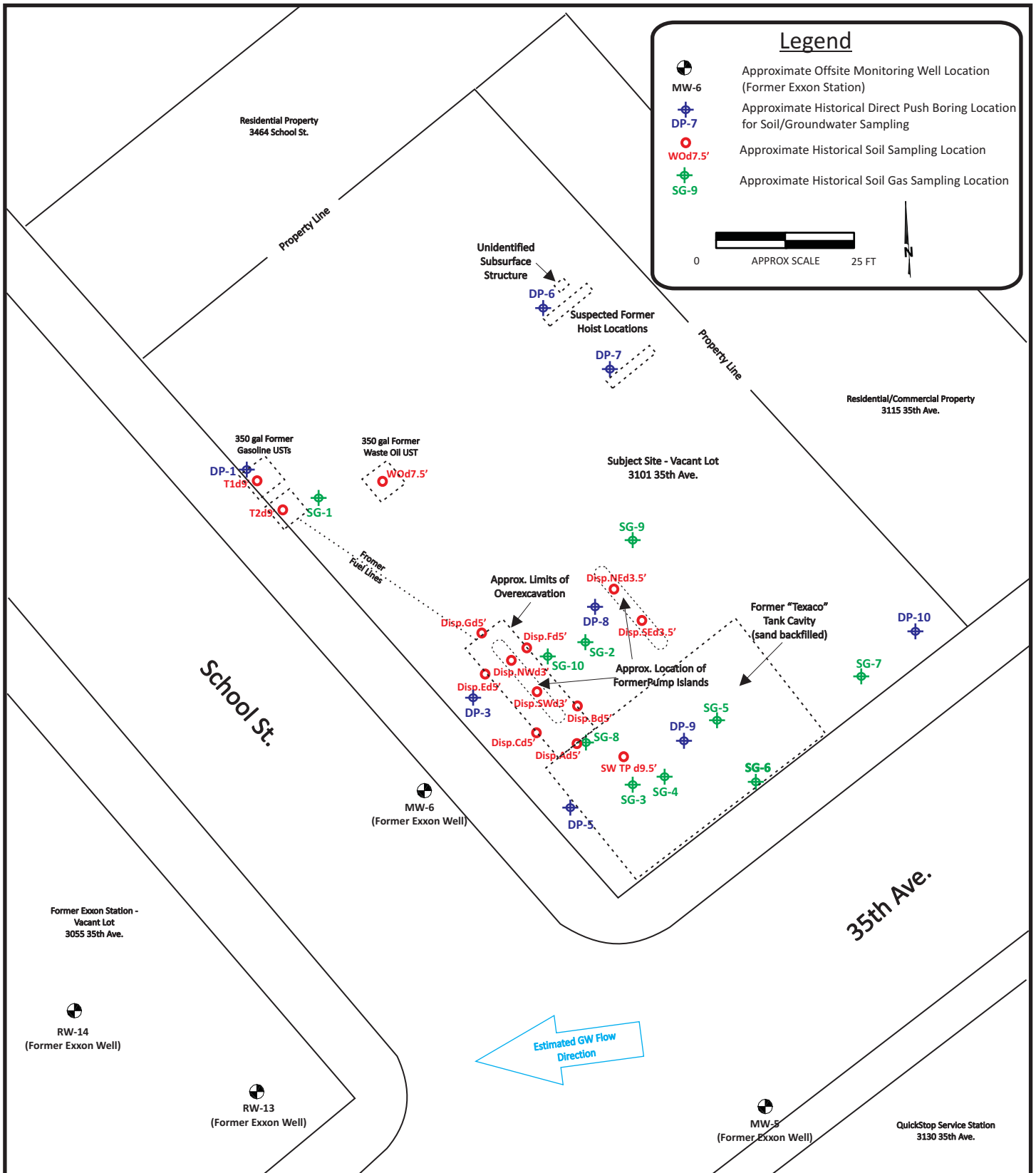


3101 35th AVENUE
OAKLAND, CALIFORNIA

AERIAL PHOTOGRAPH
OF SITE AREA

FIGURE

2



Legend

- MW-6 Approximate Offsite Monitoring Well Location (Former Exxon Station)
- DP-7 Approximate Historical Direct Push Boring Location for Soil/Groundwater Sampling
- WOd7.5' Approximate Historical Soil Sampling Location
- SG-9 Approximate Historical Soil Gas Sampling Location

0 APPROX SCALE 25 FT

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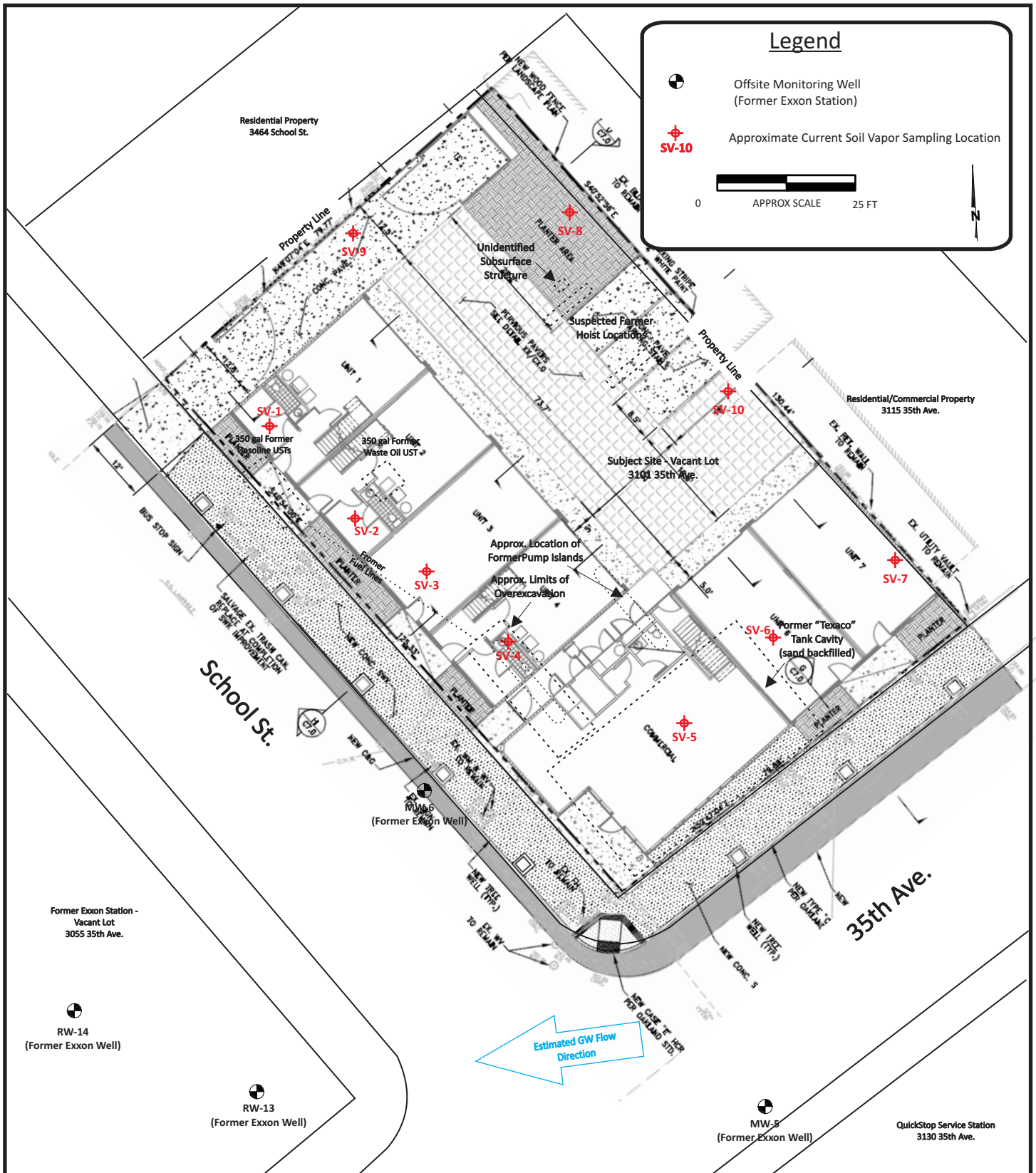


3101 35th AVENUE
OAKLAND, CALIFORNIA

FIGURE

DETAILED SITE MAP
SHOWING HISTORICAL SAMPLING LOCATIONS

3

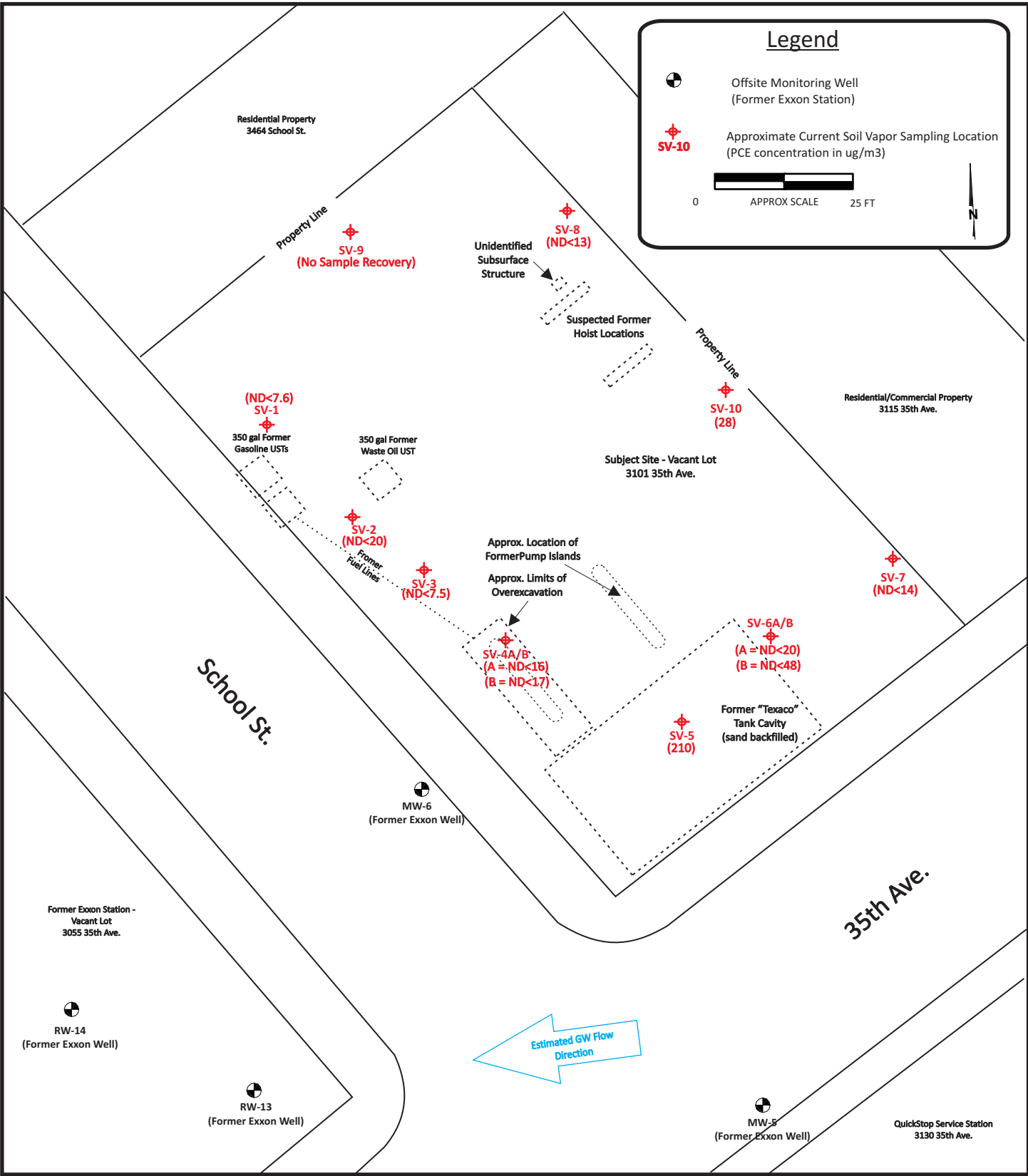


3101 35th AVENUE
OAKLAND, CALIFORNIA

FIGURE

SITE MAP SHOWING CURRENT
SOIL VAPOR SAMPLING LOCATIONS

4

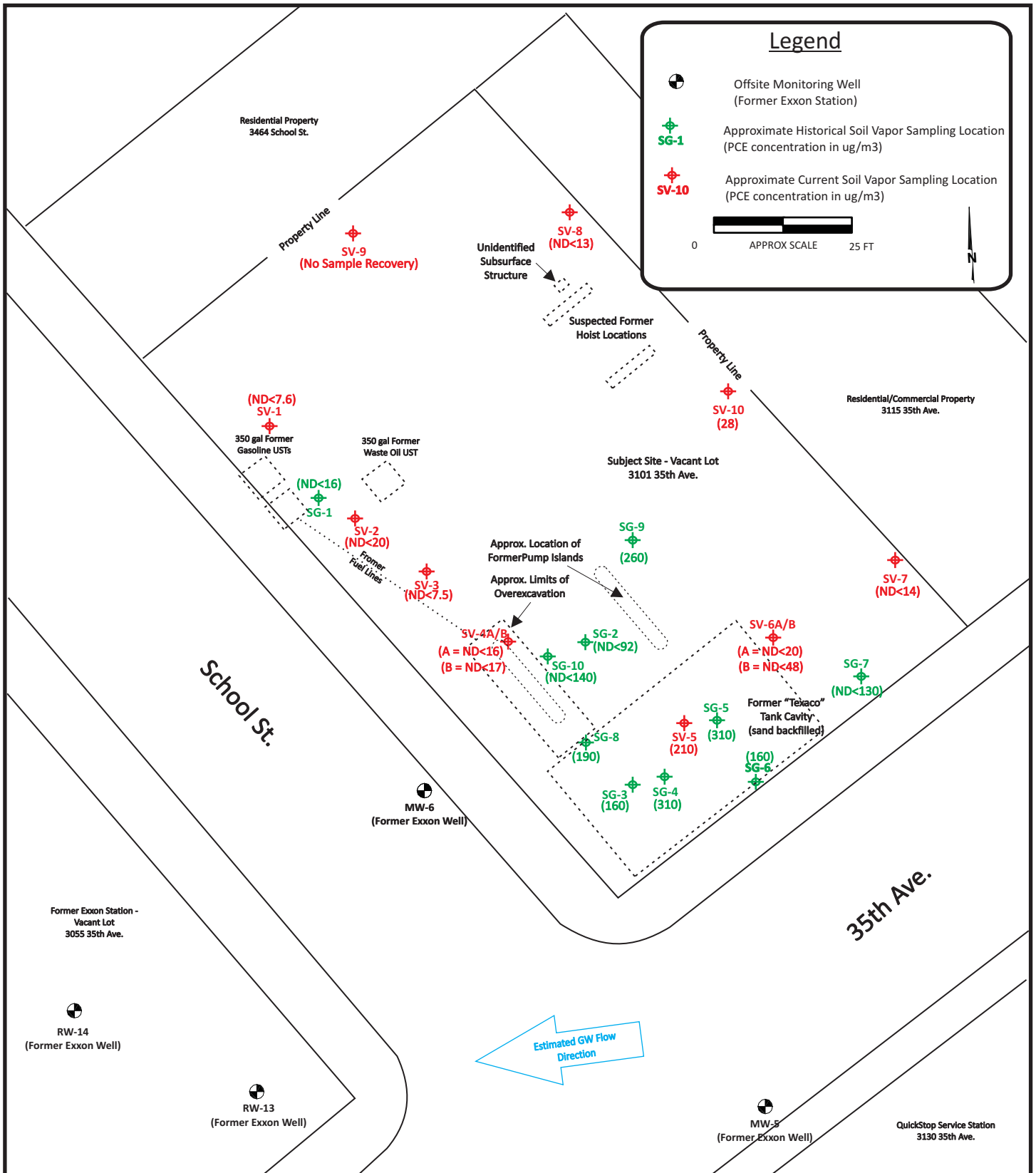


3101 35th AVENUE
OAKLAND, CALIFORNIA

SITE MAP SHOWING CURRENT
SOIL VAPOR SAMPLING RESULTS

FIGURE

5



3101 35th AVENUE
OAKLAND, CALIFORNIA

SITE MAP SHOWING CURRENT & HISTORICAL
SOIL VAPOR SAMPLING RESULTS

FIGURE

6

TABLES

TABLE 1A
SUMMARY OF CURRENT and HISTORICAL SOIL ANALYTICAL DATA - Hydrocarbons and VOCs
3101 35th Avenue
Oakland, California

Sample ID	Sample Depth (ft.)	Sample Date	TPHg (mg/Kg)	TPHd (mg/Kg)	TPHmo (mg/Kg)	B (mg/Kg)	T (mg/Kg)	E (mg/Kg)	X (mg/Kg)	MtBE (mg/Kg)	Naph. (mg/Kg)	TBA (mg/Kg)	Other VOCs (mg/Kg)
WO d 7.5'	7.5	01/27/15	ND<0.25	ND<1.0	ND<1.0	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.010	---	All ND
T1 d 9'	9.0	01/27/15	ND<0.25	---	---	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	---	---	All ND
T2 d 9'	9.0	01/27/15	ND<0.25	---	---	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	---	---	All ND
Disp. SW d 3'	3.0	01/27/15	230	---	---	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	---	---	All ND
Disp. NW d 3'	3.0	01/27/15	850	---	---	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	---	---	All ND
Disp. SE d 3.5'	3.5	01/27/15	ND<0.25	---	---	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	---	---	All ND
Disp. NE d 3'	3.0	01/27/15	ND<0.25	---	---	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	---	---	All ND
SW TP d 9.5'	9.5	01/27/15	180	---	---	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	---	---	All ND
Dispenser SP	stopckpile	01/27/15	ND<0.25	---	---	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	---	---	All ND
Main TP SP	Stockpile	01/27/15	ND<0.25	---	---	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	---	---	All ND
WO SP	Stockpile	01/27/15	32	84	360	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	0.71	---	All ND
Disp.Ad5'	5.0	04/16/15	46	---	---	ND<0.005	ND<0.005	ND<0.005	0.069	ND<0.05	---	---	---
Disp.Bd4'	4.0	04/16/15	1.1	---	---	ND<0.005	ND<0.005	ND<0.005	ND<0.050	ND<0.05	---	---	---
Disp.Cd5'	5.0	04/16/15	77	---	---	ND<0.001	ND<0.001	0.17	0.22	ND<0.10	---	---	---
Disp.Dd5'	5.0	04/16/15	110	---	---	ND<0.05	0.21	0.87	0.16	ND<0.05	---	---	---
Disp.Ed5'	5.0	04/16/15	21	---	---	ND<0.05	0.031	0.012	0.16	ND<0.05	---	---	---
Disp.Fd5'	5.0	04/16/15	68	---	---	ND<0.05	ND<0.005	ND<0.005	0.035	ND<0.05	---	---	---
Disp.Gd4'	4.0	04/16/15	ND<1.0	---	---	ND<0.05	ND<0.005	ND<0.005	ND<0.050	ND<0.05	---	---	---
Disp.Hd4'	4.0	04/16/15	68	---	---	ND<0.05	0.34	ND<0.050	0.093	ND<0.05	---	---	---
ESL Residential			770	240	11,000	0.250	1,000	5.5	600	44	1.9	---	varies
LTCP Residential (0' to 5')			---	---	---	1.9	---	21.0	---	---	9.7	---	varies
LTCP Residential (5' to 10')			---	---	---	2.8	---	32.0	---	---	9.7	---	varies

Continued.

TABLE 1A
SUMMARY OF CURRENT and HISTORICAL SOIL ANALYTICAL DATA - Hydrocarbons and VOCs
3101 35th Avenue
Oakland, California

Sample ID	Sample Depth (ft.)	Sample Date	TPHg	TPHd	TPHmo	B	T	E	X	MtBE	Naph.	TBA	Other VOCs
			(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
DP-1d5.0	5.0	11/02/15	ND<0.20	---	---	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.050	---
DP-1d10.0	10.0	11/02/15	ND<0.20	---	---	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.050	---
DP-1d15.0	15.0	11/02/15	ND<0.20	---	---	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.050	---
DP-3d5.0	5.0	11/02/15	ND<0.20	---	---	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.050	---
DP-3d10.0	10.0	11/02/15	12	---	---	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.050	---
DP-3d20.0	20.0	11/02/15	0.73	---	---	0.0023	0.013	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.050	---
DP-3d30.0	30.0	11/02/15	ND<0.20	---	---	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.050	---
DP-5d5.0	5.0	11/02/15	ND<0.20	---	---	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.050	---
DP-5d10.0	10.0	11/02/15	6.1	---	---	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.050	---
DP-5d15.0	15.0	11/02/15	0.30	---	---	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.050	---
DP-5d20.0	20.0	11/02/15	18	---	---	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.050	---
DP-5d30.0	30.0	11/02/15	ND<0.20	---	---	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.050	---
SG-1d5.0	5.0	11/02/15	0.065	---	---	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.050	---
SG-2d5.0	5.0	11/02/15	ND<0.20	---	---	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.050	---
SG-3d5.0	5.0	11/02/15	ND<0.20	---	---	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.050	---
SG-4d5.0	5.0	05/31/16	ND<0.20	---	---	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.050	All ND
DP-6d5.0	5.0	05/31/16	ND<0.20	ND<10.0	42	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.050	All ND
DP-6d10.0	10.0	05/31/16	ND<0.20	ND<10.0	ND<20.0	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.050	All ND
DP-7d5.0	5.0	05/31/16	ND<0.20	ND<10.0	ND<20.0	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.050	All ND
DP-7d10.0	10.0	05/31/16	ND<0.20	ND<10.0	ND<20.0	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.050	All ND
DP-8d5.0	5.0	05/31/16	ND<0.20	---	---	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.050	All ND
DP-8d10.0	10.0	05/31/16	ND<0.20	---	---	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.050	All ND
DP-9d5.0	5.0	05/31/16	ND<0.20	ND<10.0	ND<20.0	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.050	All ND
DP-9d8.0	8.0	05/31/16	3.2	ND<10.0	ND<20.0	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.050	All ND ¹
DP-9d15.0	15.0	05/31/16	1.0	ND<10.0	ND<20.0	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.050	All ND
DP-10d5.0	5.0	05/31/16	ND<0.20	ND<10.0	ND<20.0	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.050	All ND
DP-10d10.0	10.0	05/31/16	ND<0.20	ND<10.0	ND<20.0	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.050	All ND
ESL Residential			770	240	11,000	0.250	1,000	5.5	600	44	1.9	---	varies
LTCP Residential (0' to 5')			---	---	---	1.9	---	21.0	---	---	9.7	---	varies
LTCP Residential (5' to 10')			---	---	---	2.8	---	32.0	---	---	9.7	---	varies

cont.

TABLE 1A
SUMMARY OF CURRENT and HISTORICAL SOIL ANALYTICAL DATA - Hydrocarbons and VOCs
3101 35th Avenue
Oakland, California

Sample ID	Sample Depth (ft.)	Sample Date	TPHg	TPHd	TPHmo	B	T	E	X	MtBE	Naphth.	TBA	Other VOCs
			(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
SV-1d5.0	5.0	06/15/17	ND<0.20	---	---	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.050	All ND
SV-2d5.0	5.0	06/15/17	ND<0.20	---	---	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.050	All ND
SV-4d5.0	5.0	06/15/17	ND<0.20	---	---	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.050	All ND
SV-4d15.0	15.0	06/15/17	ND<0.20	---	---	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.050	All ND
SV-5d5.0	5.0	06/15/17	ND<0.20	---	---	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.050	All ND
SV-6d5.0	5.0	06/15/17	ND<0.20	---	---	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.050	All ND
SV-6d15.0	15.0	06/15/17	ND<0.20	---	---	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.050	All ND
SV-7d5.0	5.0	06/15/17	ND<0.20	---	---	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.050	All ND
SV-8d5.0	5.0	06/15/17	ND<0.20	---	---	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.050	All ND
SV-9d5.0	5.0	06/15/17	ND<0.20	---	---	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.050	All ND
SV-10d5.0	5.0	06/15/17	ND<0.20	---	---	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.050	All ND
ESL Residential			770	240	11,000	0.250	1,000	5.5	600	44	1.9	---	varies
LTCP Residential (0' to 5')			---	---	---	1.9	---	21.0	---	---	9.7	---	varies
LTCP Residential (5' to 10')			---	---	---	2.8	---	32.0	---	---	9.7	---	varies

Notes:

11/25/14 & 4/16/15 samples collected by ERS

1 = n-Butylbenzene @ 0.022 mg/Kg & sec-Butylbenzen @ 0.0096mg/Kg

--- = Parameter not analyzed

<0.5 / ND = Not present at or above practical laboratory detection limit

mg/Kg = micrograms per kilogram = parts per million = ppm

ESLs = RWQCB Environmental Screening Levels - Feb. 2016 (Table S-1: Res. Shallow Soil Exposure)

LTCP = Low Threat Closure Policy - Table 1: Concentrations of Petroleum Constituents in soil that will have no significant risk of adversely affecting human health

TPHg = Total Petroleum Hydrocarbons as gasoline

TPHd = Total Petroleum Hydrocarbons as diesel

TPHmo = Total Petroleum Hydrocarbons as motor oil

B = Benzene

MtBE = Methyl-t-butyl ether

Bolded Value =detected concentration

T = Toluene

TBA = tert Butyl Alcohol

Shaded Value = concentration exceeds either ESL or LTCP value

E = Ethylbenzene

X = Total Xylenes

TABLE 1B
SUMMARY OF HISTORICAL SOIL ANALYTICAL DATA - PAHs
3101 35th Avenue
Oakland, California

Sample ID	WO d 7.5'	WO SP	DP-6d5.0	DP-6d10.0	DP-7d5.0	DP-7d10.0	LTCP Res.	LTCP Res.	Res.
Sample Depth	7.5 ft bgs	Stockpile	5.0 ft bgs	10 ft bgs	5.0 ft bgs	10 ft bgs	0 to 5 ft bgs	5 to 10 ft bgs	ESL
Sample Date	01/27/15	01/27/15	05/31/16	05/31/16	05/31/16	05/31/16	(mg/Kg)	(mg/Kg)	(mg/Kg)
Units	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
Acenaphthene	ND<0.010	ND<0.010	ND<0.10	ND<0.10	ND<0.10	ND<0.10	0.063	NA	16
Acenaphthylene	ND<0.010	ND<0.010	ND<0.10	ND<0.10	ND<0.10	ND<0.10	0.063	NA	13
Anthracene	ND<0.010	ND<0.010	ND<0.10	ND<0.10	ND<0.10	ND<0.10	0.063	NA	2.8
Benzo[a]anthracene	ND<0.010	ND<0.010	ND<0.10	ND<0.10	ND<0.10	ND<0.10	0.063	NA	0.7
Benzo[b]fluoranthene	ND<0.010	ND<0.010	ND<0.10	ND<0.10	ND<0.10	ND<0.10	0.063	NA	0.7
Benzo[k]fluoranthene	ND<0.010	ND<0.010	ND<0.10	ND<0.10	ND<0.10	ND<0.10	0.063	NA	2.6
Benzo[a]pyrene	ND<0.010	ND<0.010	ND<0.10	ND<0.10	ND<0.10	ND<0.10	0.063	NA	0.07
Benzo[g,h,i]perylene	ND<0.010	ND<0.010	ND<0.10	ND<0.10	ND<0.10	ND<0.10	0.063	NA	2.5
Chrysene	ND<0.010	ND<0.010	ND<0.10	ND<0.10	ND<0.10	ND<0.10	0.063	NA	3.8
Dibenzo[a,h]anthracene	ND<0.010	ND<0.010	ND<0.10	ND<0.10	ND<0.10	ND<0.10	0.063	NA	0.07
Fluoranthene	ND<0.010	ND<0.010	ND<0.10	ND<0.10	ND<0.10	ND<0.10	0.063	NA	60
Fluorene	ND<0.010	ND<0.010	ND<0.10	ND<0.10	ND<0.10	ND<0.10	0.063	NA	8.9
Indeno[1,2,3-cd]pyrene	ND<0.010	ND<0.010	ND<0.10	ND<0.10	ND<0.10	ND<0.10	0.063	NA	0.7
1-Methylnaphthalene	ND<0.010	0.66	ND<0.10	ND<0.10	ND<0.10	ND<0.10	0.063	NA	NA
2-Methylnaphthalene	ND<0.010	1.2	ND<0.10	ND<0.10	ND<0.10	ND<0.10	0.063	NA	0.25
Napthalene	ND<0.010	0.71	ND<0.10	ND<0.10	ND<0.10	ND<0.10	9.7	9.7	1.2
Phenanthrene	ND<0.010	ND<0.010	ND<0.10	ND<0.10	ND<0.10	ND<0.10	0.063	NA	11
Pyrene	ND<0.010	ND<0.010	ND<0.10	ND<0.10	ND<0.10	ND<0.10	0.063	NA	85

Notes:

- = Parameter not analyzed
- <0.5 / ND = Not present at or above reporting detection limit
- mg/Kg = micrograms per kilogram = parts per million = ppm
- ESLs = RWQCB Environmental Screening Levels - Feb. 2016 (Table S-1: Res. Shallow Soil Exposure)
- Bolded Value** =detected concentration
- Shaded Value** = concentration exceeds either ESL or LTCP value
- PAH = polynuclear aromatic hydrocarbons

TABLE 1C
SUMMARY OF HISTORICAL SOIL ANALYTICAL DATA - Metals
3101 35th Avenue
Oakland, California

Sample ID	Sample Depth (ft)	Sample Date	Sb (mg/Kg)	As (mg/Kg)	Ba (mg/Kg)	Be (mg/Kg)	Cd (mg/Kg)	Cr (mg/Kg)	Co (mg/Kg)	Cu (mg/Kg)	Pb (mg/Kg)	Hg (mg/Kg)	Mo (mg/Kg)	Ni (mg/Kg)	Se (mg/Kg)	Ag (mg/Kg)	Tl (mg/Kg)	V (mg/Kg)	Zn (mg/Kg)
WO d 7.5'	7.5	01/27/15	---	---	---	---	ND<0.25	46	---	---	6.9	---	---	100	---	---	---	---	120
T1 d 9'	9.0	01/27/15	---	---	---	---	---	---	---	---	6.5	---	---	---	---	---	---	---	---
T2 d 9'	9.0	01/27/15	---	---	---	---	---	---	---	---	9.7	---	---	---	---	---	---	---	---
Disp. SW	3.0	01/27/15	---	---	---	---	---	---	---	---	25	---	---	---	---	---	---	---	---
Disp. NW	3.0	01/27/15	---	---	---	---	---	---	---	---	35	---	---	---	---	---	---	---	---
Disp. SE d	3.5	01/27/15	---	---	---	---	---	---	---	---	13	---	---	---	---	---	---	---	---
Disp. NE d	3.0	01/27/15	---	---	---	---	---	---	---	---	8.3	---	---	---	---	---	---	---	---
SW TP d	9.5	01/27/15	---	---	---	---	---	---	---	---	18	---	---	---	---	---	---	---	---
Dispenser	stopckpile	01/27/15	---	---	---	---	---	---	---	---	170	---	---	---	---	---	---	---	---
Main TP	Stockpile	01/27/15	---	---	---	---	---	---	---	---	43	---	---	---	---	---	---	---	---
WO SP	Stockpile	01/27/15	---	---	---	---	0.32	52	---	---	65	---	---	80	---	---	---	---	160
DP-6d5.0	5.0	05/31/16	ND<4.4	5.3	160	0.43	ND<0.44	54	10	78	6.7	0.099	0.52	67	ND<4.4	0.3	ND<4.4	52	92
DP-6d10.0	10.0	05/31/16	ND<5.0	9.1	240	0.45	ND<0.50	51	15	81	8.2	0.19	0.26	72	ND<5.0	0.35	ND<5.0	70	100
DP-7d5.0	5.0	05/31/16	ND<5.0	10	220	0.4	ND<0.50	54	17	67	11	0.082	0.35	91	ND<5.0	0.3	ND<5.0	62	99
DP-7d10.0	10	05/31/16	ND<5.0	7.7	220	0.4	ND<0.50	57	17	83	8.1	0.16	0.35	70	ND<5.0	0.31	ND<5.0	74	110
ESL Residential			31	0.067	15,000	0.083	0.014	NA	0.23	3100	80	13	390	820	390	6900	0.78	140,000	23,000
TTLC			500	500	10,000	75	100	500	8,000	2,500	1,000	20	3,500	2,000	100	500	700	2,400	5,000

Notes:

Sb = Antimony Cr = Chromium (total) Mo = Molybdenum V = Vanadium
As = Arsenic Co = Cobalt Ni = Nickel Z = Zinc
Ba = Barium Cu = Copper Se = Selenium
Be = Beryllium Pb = Lead Ag = Silver
Ca = Cadmium Hg = Mercury Tl = Thallium

<0.5 / ND = Not present at or above reporting detection limit
mg/Kg = milligrams per kilogram = parts per million = ppm
ESLs = RWQCB Environmental Screening Levels - Feb. 2016 (Table S-1: Res. Shallow Soil Exposure)
TTLC = Total Threshold Limit Concentration

Bolded Value = a detected concentration
Shaded Value = concentration detected above corresponding TTLC

TABLE 2
SUMMARY OF HISTORICAL GROUNDWATER ANALYTICAL DATA
3101 35th Avenue
Oakland, California

Sample ID	Sample Date	TPHg (ug/L)	TPHd (ug/L)	TPHmo (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MtBE (ug/L)	Naphth. (ug/L)	TBA (ug/L)	PCE (ug/L)	Other VOCs (ug/L)	Metals* (ug/L)
DP-1	11/03/15	ND<50	---	---	ND<0.50	0.11	ND<0.50	ND<1.0	ND<0.50	ND<0.50	ND<10	---	---	---
DP-3	11/03/15	1,000	---	---	19	1.1	34	5.1	ND<0.50	7.2	ND<10	---	---	---
DP-5	11/03/15	3,700	---	---	2.2	1.5	1.4	5.5	ND<0.50	2.6	ND<10	---	---	---
DP-6	06/01/16	ND<50	ND<200	500	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<0.50	ND<0.50	---	ND<0.50	All ND	All ND
DP-8	06/01/16	57	---	---	3.3	ND<0.50	1.9	ND<1.0	ND<0.50	ND<0.50	---	ND<0.50	All ND ¹	---
DP-9	06/01/16	330	---	---	3.4	ND<0.50	2.5	ND<1.0	ND<0.50	ND<0.50	---	ND<0.50	All ND ²	---
DP-10	06/01/16	ND<50	---	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<0.50	ND<0.50	---	ND<0.50	All ND	---
Tier 1 ESL		100	100	50,000	1.0	40	13	20	5.0	0.12	12.0	3.0	varies	varies

Notes:

All samples collected as "grab" groundwater samples

--- = Parameter not analyzed

<0.5 / ND = Not present at or above laboratory practical quantitation limit

ug/L = micrograms per Liter = parts per billion = ppb

Tier 1 ESL = RWQCB Environmental Screening Level (February 2016)

LTCP = Low Threat Closure Policy - Table 1: Concentrations of Petroleum Constituents in soil that will have no significant risk of adversely affecting human health

TPHg = Total Petroleum Hydrocarbons as gasoline

TPHd = Total Petroleum Hydrocarbons as diesel

TPHmo = Total Petroleum Hydrocarbons as motor oil

B = Benzene Naphth. = Naphthalene

T = Toluene MtBE = Methyl-t-butyl ether

E = Ethylbenzene TBA = tert Butyl Alcohol

X = Total Xylenes PCE = tetrachloroethene

1 = Isopropylbenzene @ 0.70 ug/L & n-Propylbenzene @ 1.2 ug/L

2 = n-Butylbenzene & sec-Butylbenzene @ 1.0 ug/L, & Isopropylbenzene = 2.2 ug/L

n-Propylbenzene = 3.4 ug/L & 1,3,5-Trimethylbenzene = 2.0 ug/L

Metals* = Cd, Cr, Pb, Ni, & Zn

Bolded Value =detected concentration

Shaded Value = concentration exceeds either ESL or LTCP value

TABLE 3A
SUMMARY OF PERTINENT HISTORICAL SOIL VAPOR ANALYTICAL DATA
3101 35th Ave.
Oakland, California

SAMPLE ID	Sample Depth (ft.)	Sample Date	Oxygen (O ₂)	Helium	TPHg (C6-C12)	Benzene	Toluene	Ethylbenzene	Xylenes (total)	MtBE	PCE	TCE	cis,1,2-DCE	Vinyl Chloride	Naphthalene
			Mol%	Mol%	(µg/m ³)	(µg/m ³)	(µg/m ³)	(µg/m ³)	(µg/m ³)	(µg/m ³)	(µg/m ³)	(µg/m ³)	(µg/m ³)	(µg/m ³)	(µg/m ³)
SG-1	5.0	11/09/15	2.6	ND<0.47	460	10	28	ND<10	ND<9.2	ND<8.4	ND<16	ND<12	ND<9.2	ND<5.9	ND<49
SG-2	5.0	11/09/15	4.1	ND<0.45	96,000	61	91	ND<59	74	ND<49	ND<92	ND<73	ND<54	ND<35	ND<290
SG-3	5.0	11/09/15	15	ND<0.19	210	3.3	7.8	ND<0.97	ND<1.9	ND<3.5	160	ND<5.2	ND<3.8	ND<2.5	ND<20
SG-4	5.0	06/01/16	17	ND<0.21	4,200	ND<3.4	4.4	ND<4.8	ND<9.2	ND<3.8	310	ND<5.6	ND<4.2	ND<2.7	ND<22
SG-5	5.0	10/10/16	16	ND<0.20	2,100	6.8	11	ND<4.3	7.6	ND<3.6	310	ND<5.3	ND<3.9	ND<2.5	ND<21
SG-6	5.0	10/10/16	17	ND<0.19	240	ND<3.1	4.1	ND<4.2	ND<8.4	ND<3.5	160	ND<5.2	ND<3.8	ND<2.5	ND<20
SG-7	5.0	10/10/16	9.8	ND<0.19	240,000	ND<62	290	ND<84	120	ND<70	ND<130	ND<100	ND<77	ND<50	ND<410
SG-8	5.0	10/10/16	17	ND<0.18	390	ND<2.9	6.9	ND<3.9	ND<7.8	ND<3.2	190	ND<4.8	ND<3.6	ND<2.3	ND<19
SG-9	5.0	10/10/16	6.5	ND<0.20	130,000	ND<63	ND<74	ND<86	ND<172	ND<71	260	ND<110	ND<78	ND<50	ND<410
SG-10	5.0	10/10/16	5.9	ND<0.21	140,000	ND<67	ND<79	ND<91	ND<182	ND<75	ND<140	ND<53	ND<83	ND<53	ND<440
Residential ESL			NA	NA	300,000	48	160,000	560	52,000	5,400	240	340	4,100	18	41
Comm/Ind ESL			NA	NA	2,500,000	420	1,300,000	4,900	440,000	47,000	2,100	3,000	35,000	160	360

Notes:

--- = Parameter not Sampled
 NA = Not analyzed or Not established
 <0.5 / ND = Not present at or above reporting detection limit
 ug/m3 = micrograms per cubic meter = ppmv
 ESLs = RWQCB Environmental Screening Levels - Feb. 2016 (Table SG-1: Vapor Intrusion: Human Health Risk Levels)
Bold = detected concentration
Shaded Value = concentration exceeds ESL value

PCE = Tetrachloroethene
 TCE = Trichloroethene
 cis,1,2-DCE = cis-1,2-Dichloroethene

TABLE 3B
SUMMARY OF PERTINENT CURRENT SOIL VAPOR ANALYTICAL DATA
3101 35th Ave.
Oakland, California

SAMPLE ID	Sample Depth (ft.)	Sample Date	Oxygen (O ₂)	Helium	TPH _g (C6-C12)	Benzene	Toluene	Ethylbenzene	Xylenes (total)	MtBE	PCE	TCE	cis,1,2-DCE	Vinyl Chloride	Naphthalene
			Mol%	Mol%	(µg/m ³)	(µg/m ³)	(µg/m ³)	(µg/m ³)	(µg/m ³)	(µg/m ³)	(µg/m ³)	(µg/m ³)	(µg/m ³)	(µg/m ³)	(µg/m ³)
SV-1	5.0	06/20/17	7.2	ND<0.23	280	ND<3.6	ND<170	ND<4.9	ND<9.8	ND<4.1	ND<7.6	ND<6.0	ND<4.5	ND<2.9	ND<24
SV-2	5.0	06/20/17	1.1	ND<0.20	5,500	17	ND<440	52	60	ND<11	ND<20	16	ND<12	ND<7.5	ND<61
SV-3	5.0	06/20/17	11	ND<0.22	6,600	30	ND<170	28	20.2	ND<4.0	ND<7.5	ND<6.0	ND<4.4	ND<2.8	ND<23
SV-4A	5.0	06/19/17	3.7	ND<0.24	17,000	ND<7.7	ND<360	40	151	ND<8.7	ND<16	ND<13	ND<9.6	ND<6.2	ND<51
SV-4B	15.0	06/19/17	6.5	ND<0.51	9,700	ND<8.2	390	22	71	ND<9.2	ND<17	24	18	ND<6.5	ND<54
SV-5	5.0	06/19/17	17	ND<0.23	190	ND<3.6	ND<170	11	ND<10	ND<4.1	210	ND<6.1	ND<4.5	ND<2.9	ND<24
SV-6A	5.0	06/19/17	11	ND<0.30	11,000	12	ND<460	44	169	ND<11	ND<20	ND<16	ND<12	ND<7.7	ND<63
SV-6B	15.0	06/19/17	9.7	ND<1.4	18,000	ND<23	ND<1,100	ND<31	ND<62	ND<26	ND<48	ND<38	ND<28	ND<18	ND<150
SV-7	5.0	06/19/17	5.4	ND<0.40	670	ND<6.5	ND<300	ND<8.8	ND<17.6	ND<7.3	ND<14	20	ND<8.0	ND<5.2	ND<42
SV-8	5.0	06/20/17	13	ND<0.38	270	ND<6.1	ND<290	ND<8.3	ND<16.6	ND<6.9	ND<13	ND<10	ND<7.5	ND<4.9	ND<40
SV-9	5.0	06/20/17	No Sample Collected - Sample Cannister Malfunction												
SV-10	5.0	06/19/17	12	ND<0.40	710	ND<6.5	ND<300	ND<8.8	ND<17.6	ND<7.3	28	ND<11	ND<8.0	ND<5.2	ND<42
Residential ESL			NA	NA	300,000	48	160,000	560	52,000	5,400	240	340	4,100	18	41
Comm/Ind ESL			NA	NA	2,500,000	420	1,300,000	4,900	440,000	47,000	2,100	3,000	35,000	160	360

Notes:

--- = Parameter not Sampled
 NA = Not analyzed or Not established
 <0.5 / ND = Not present at or above reporting detection limit
 µg/m³ = micrograms per cubic meter = ppmv
 ESLs = RWQCB Environmental Screening Levels - Feb. 2016 (Table SG-1: Vapor Intrusion: Human Health Risk Levels)
Bold = detected concentration
Shaded Value = concentration exceeds ESL value

PCE = Tetrachloroethene
 TCE = Trichloroethene
 cis,1,2-DCE = cis-1,2-Dichloroethene

APPENDIX A

Directive Letter

ALAMEDA COUNTY
**HEALTH CARE SERVICES
AGENCY**

REBECCA GEBHART, Interim Director



DEPARTMENT OF ENVIRONMENTAL HEALTH
LOCAL OVERSIGHT PROGRAM (LOP) FOR
HAZARDOUS MATERIALS RELEASES
1131 HARBOR BAY
ALAMEDA, CA 94502
(510) 567-6700
FAX (510) 337-9335

November 17, 2017

Ms. Mona Hsieh & Mr. Patrick Kong
Green Oak Builders
888 Brannan Street, #101
San Francisco, CA 94103
(Sent via electronic mail to mona.hsieh@yahoo.com)
(Sent via electronic mail to patrickykong@gmail.com)

Subject: Conditional Case Closure
Approval of *Corrective Action Plan*
Site Cleanup Case No. RO0003238, Mixed Use Redevelopment Project, 3101 35th Avenue,
Oakland, CA 94619

Dear Ms. Hsieh and Mr. Kong:

Alameda County Department of Environmental Health (ACDEH) has reviewed the case file in conjunction with the proposed corrective actions and proposed site redevelopment for the subject site presented in the following document prepared by Almar Environmental (Almar) on behalf of Green Oak Builders:

- *Draft Corrective Action Plan, 3101 35th Avenue (CAP)*, dated August 7 2017. The CAP contains site background information which includes a discussion of historical site uses and investigations as well as interim remedial measures (IRM) consisting of soil excavation conducted at the site in April, 2015, and presents a summary of prior data evaluations and a discussion of planned engineering controls consisting of installation of a vapor mitigation system (VMS) to mitigate potential impacts of vapor intrusion to indoor air from residual chemicals of concern in soil gas at the site into occupied structures and construction of trench dams in utility trenches to mitigate potential vapor migration. Prior to construction of the new site development, the CAP specifies the preparation of a site specific health and safety plan (HSP) and a soil management plan (SMP) that will be implemented during site redevelopment to mitigate conditions potentially hazardous to human health or the environment during and after construction. A public notice document was circulated by ACDEH to solicit public comments on the draft CAP for a 30-day period that ended on September 28, 2017; no public comments were received.

The CAP was prepared to support redevelopment of the site and a change in site use from commercial to mixed-use residential, as detailed in the following plans and permits approved/issued by the City of Oakland Planning and Building Department:

- Redevelopment plans prepared by Philip Banta & Associates dated January 14, 2014 and approved by the City of Oakland Planning and Zoning Department on February 13, 2014:
- Building Permit Number B1304783, New 3-story mixed use 8 unit condo complex w/7 residential townhouse units & 1 commercial unit, issued by the City of Oakland Planning and Building Department on October 10, 2014 and extended through October 10, 2015.

The redevelopment plans for the site include construction of a new multi-unit three-story mixed-use residential building with the first floor corner unit at 35th Avenue and School Street designated for commercial space. Parking will be provided on the first floor level at the rear of the at-grade building and accessed via School Street. Construction will include a slab-on-grade foundation for the structure, concrete paved driveway and parking stalls and, to the rear of the building, pervious pavers and a planter area.

The building foundation will consist of a 4-inch-thick, structural reinforced concrete slab foundation situated on 18-inch-thick interior and perimeter structurally reinforced concrete footings. The ground level (first floor) of the residential units will be comprised primarily of parking areas with some residential units having bathrooms. The upper two levels consist of living space. After development the entire site will be covered by the building and paved parking areas and sidewalks with the exception of planter and the pervious paver areas.

Based on information presented in the case file, and with the provision that the information provided to this agency is accurate and representative of site conditions, ACDEH conditionally approves of the corrective actions presented in the CAP. Implementation of the proposed measures, in addition to the SMP approved by our agency, will prevent future exposure to construction workers and users/occupants of the proposed redevelopment project from residual contamination at the site.

Therefore, at this juncture you may proceed with site redevelopment activities provided the approved corrective actions and mitigation measures presented in the CAP are implemented and the documents listed in the Technical Report section below are submitted in accordance with the associated compliance dates. Accordingly, this letter represents Conditional Case Closure, subject to satisfaction of all of the requirements discussed herein. Final Case Closure will be granted following completion of corrective actions and recordation of Land Use Covenants.

We request that you address the following technical comments and send us the reports described below. Please provide 72-hour advance written notification to this office (electronic mail preferred to: keith.nowell@acgov.org) prior to the start of field activities.

TECHNICAL REPORT REQUEST

1. Prior to the start of site demolition and construction activities the following documents must be submitted to ACDEH for review and approval:
 - a. **Project Schedule.** The baseline schedule must include at a minimum the following activities: soil vapor probe destruction; demolition of existing site foundations and improvements; soil import and excavation backfilling; grading and utility/trench dam installation and inspection; foundation and vapor barrier/subslab piping installation and inspection; vertical construction of building and VMS vertical vent piping installation and inspection; VMS installation verification monitoring; recordation of land use covenants and expected date of site occupancy. The schedule must include all submittals including but not limited to the Corrective Action Implementation Plan (CAIP), Vapor Probe Decommissioning Report, Site Management Plan (SMP) for Redevelopment Construction, Approved Building Permit Plans incorporating the VMS and utility trench dams for the building(s) identified in the CAP, Soil Import Documentation Report (if applicable), and Remedial Soil Excavation Completion Report (if performed), VMS and Utility Trench Dam Record Report of Construction, Long-Term Site Use SMP, and Land Use Covenant. The baseline schedule must be updated during the project as required to update ACDEH on the status of corrective action implementation and site redevelopment activities.

- b. **Corrective Action Implementation Plan (CAIP).** A CAIP providing detailed design drawings and specifications for the VMS and utility trench dams. The CAIP must be submitted to ACDEH with the full set of construction drawings prepared for the project at the time the construction package is submitted to the City of Oakland Building Department. The CAIP must include a Construction Quality Assurance Plan describing contractor and inspector qualifications and experience, procedures for VMS construction monitoring and documentation, and a construction sequencing plan presenting the sequence of measures that will be used to protect the installed VMS during building construction activities; and a Work Plan for indoor air sampling prior to building occupancy to verify the effectiveness of the VMS.
 - c. **Probe Decommissioning Report.** A report documenting the decommissioning of vapor probes and removal of wastes with appropriate documentation.
 - d. **Site Management and Contingency Plan for Redevelopment Construction (Construction SMP).** An SMP describing procedures to be followed by environmental consultants, construction contractors and workers, and other property owner representatives during redevelopment construction, identifying safety and training requirements for construction workers, and establishing procedures for assessing and managing contaminated soil and groundwater that could be encountered during construction activities.
2. Prior to the import of soil to the site the following documents must be submitted to ACDEH for review and approval:
 - a. **Soil Import Documentation, if applicable.** Requisite documentation for permeable and non-permeable material including information on proposed sources, sampling and profiling protocols, analytical laboratory reports, and tables with analytical results and applicable environmental screening levels.
3. Prior to the start of site grading, utility installation and foundation construction the following reports must be submitted to ACDEH for review and approval:
 - a. **Approved Building Permit Plans.** A copy of the City of Oakland Building Department approved construction drawings for site redevelopment incorporating the VMS and utility trench dams. ACDEH must be notified if the project proponent or the City proposes changes to the site development and first floor building plans presented in the preliminary architectural plans including but not limited to changes to the VMS design or utility trench dam location presented in the CAIP. Any substantial changes made to the plans without review by ACDEH may invalidate the conclusions of the protectiveness of the proposed redevelopment of the site with respect to the residual contamination.
 - b. **Remedial Soil Excavation Completion Report, if performed.** A soil excavation report documenting source excavation, confirmation sampling and analytical results must be submitted prior to the start of construction of the final foundation system. The report must include a description of the sampling methods, scaled figures showing sampling locations, volume of soil excavated and final disposition, waste manifests if disposed of off-site, tabulated analytical results, and laboratory analytical reports.

4. Prior to building occupancy of the new residential redevelopment the following documents must be submitted to ACDEH for review and approval:
 - a. **Land Use Covenant (LUC).** A LUC documenting long-term site use will be required to be recorded, and must include the following site use restrictions: (1) implementation of the SMP, which shall be incorporated therein by reference, including preservation of the site surface cover and maintenance of the vapor mitigation systems and utility trench dams; (2) prohibition on the extraction of groundwater for any use, including but not limited to domestic, potable or industrial uses; and (3) prohibition on growing fruits or vegetables for consumption using site soils (edible gardening shall only be permitted using imported soil in raised beds).
 - b. **SMP for Long Term Site Use.** A SMP for long-term site management providing details regarding the location and construction of the VMS and utility trench dams, precautions should subsurface work be required in the area of installed mitigation measures, protocols for handling potentially impacted soil and groundwater exceeding residential screening criteria that may remain beneath the ground floor slab and foundations, and notification and documentation procedures should the VMS and/or trench dam be damaged. The SMP must include as-built drawings and specifications of the VMS and utility trench dams and must be maintained at the site address by the property manager or designated representative and will be recorded at the Alameda County Clerk- Recorder's Office.
 - c. **VMS and Utility Trench Dam Record Report of Construction.** A VMS and utility trench dam record report of construction with as-built drawings and other information relevant to the installation of the VMS and trench dams and certifying the VMS and trench dams were installed in accordance with the design plans. The report must include indoor air sampling results conducted in the newly constructed building to verify the effectiveness of the VMS.
5. **Continued Geotracker Electronic Report and Data Upload Compliance** – Geotracker compliance is a State requirement that ACDEH is tasked with implementing. Pursuant to California Code of Regulations, Title 23, Division 3, Chapter 16, Article 12, Sections 2729 and 2729.1, beginning September 1, 2001, all analytical data, including monitoring well samples, submitted in a report to a regulatory agency as part of the UST or LUST program, must be transmitted electronically to the SWRCB GeoTracker system via the internet. In September 2004, the SWRCB adopted regulations that require electronic submittal of information for all groundwater cleanup programs, including Site Cleanup Programs. Beginning July 1, 2005, electronic submittal of a complete copy of all reports for all sites was required in GeoTracker. Please see Attachment 1 for limited additional details, and the state GeoTracker website for full details. ACDEH requests future notification of documents uploaded to GeoTracker.

TECHNICAL REPORT/WORK SCHEDULE

Please perform the requested work and submit technical reports to ACDEH (Attention: Keith Nowell) in accordance with the schedule below. The technical reports may be combined as appropriate. The submittal compliance date for reports with a "Date to be Determined" notation will be finalized in a subsequent Directive Letter and will be based on the date(s) proposed in the Baseline Project Schedule.

- December 15, 2017 – Project Schedule
- Date to be Determined – Corrective Action Implementation Plan
- Date to be Determined – Vapor Probe Decommissioning Report

Ms. Hsieh and Mr. Kong
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- Date to be Determined – Construction SMP
- Date to be Determined – Soil Import Documentation, if applicable
- Date to be Determined – Approved Building Permit Plans
- Date to be Determined – Remedial Soil Excavation Completion Report, if performed
- Date to be Determined – VMS and Trench Dam Record Report of Construction
- Date to be Determined – Long Term Site Use SMP
- Date to be Determined – Land Use Covenant

Thank you for your cooperation. ACDEH looks forward to working with you and your consultants to advance the case toward closure. Should you have any questions regarding this correspondence or your case, please call me at (510) 567- 6764 or send me an electronic mail message at keith.nowell@acgov.org.

Sincerely,



Digitally signed by Keith Nowell
DN: cn=Keith Nowell, o=Alameda County,
ou=Department of Environmental Health,
email=keith.nowell@acgov.org, c=US
Date: 2017.11.17 15:01:12 -08'00'

Keith Nowell, P.G., C.HG.
Hazardous Materials Specialist

Enclosures: Attachment 1- Responsible Party(ies) Legal Requirements/Obligations
ACDEH Electronic Report Upload (FTP) Instructions

Attachment 2 – Site Management Plan Template

cc: Forrest Cook, Almar Environmental, 407 Almar Avenue, Santa Cruz, CA 95060
(Sent via electronic mail to cook.forrest@gmail.com)

Dilan Roe, ACDEH (Sent via electronic mail to dilan.roe@acgov.org)
Keith Nowell, ACDEH (Sent via electronic mail to keith.nowell@acgov.org)
Paresh Khatri, ACDEH, (Sent via electronic mail to: paresh.khatri@acgov.org)

Electronic File

APPENDIX B

Agreement and Acknowledgement Statement

Soil Management Plan
3101 35th Ave.
Oakland, California

Subject: **Soil Management Plan - Agreement and Acknowledgement Statement**
3101 35th Avenue, Oakland, CA
ACEH Case No. RO0003238; Global ID T10000010421

I have read and acknowledge the content of this Soil Management Plan and hereby certify that I understand and agreed to abide by its provisions.

Sincerely,

Ms. Mona Hsieh
Responsible Party Representative

Mr. Kenneth Lam
Kendu Construction