



## Environmental Risk Assessors

September 14, 2017

Mr. Mike Adams  
Huntleigh Development, Inc.  
101 Linden Street  
Oakland, CA 94607

**SUBJECT:** Work Plan for a Phase II ESA Data Gaps Investigation  
4200 International Boulevard, Oakland, California  
ERA Project No. 01-2017-1600-001

Dear Mr. Adams,

Environmental Risk Assessors (ERA) is pleased to present this work plan to Huntleigh Development, Inc. (HDI) for a Phase II Environmental Site Assessment (Phase II ESA) Data Gaps Investigation at the above referenced property (the Site).

### Site Description and Background

The Site is a portion of the parcel identified by the Alameda County Assessor as Assessor Parcel Number 35-2354-1-2. The Site is currently developed with a one-story commercial building occupied by Burger King, a fast-food restaurant, with landscaping and pavement areas.

Information obtained by Basics Environmental, Inc. (Basics Environmental) during their Phase I ESA indicated that the Site was previously occupied by an automobile repair building and a parts department associated with a car dealership that formerly occupied the Site and adjoining area to the east. A fueling area was located in the area of Burger King's drive-thru window. Basics Environmental did not obtain information regarding specific use of hazardous materials on the Site and no reports of major violations, spills or unauthorized releases were reported for the Site within the local regulatory agency files reviewed during the Phase I ESA.

### Previous Investigation

ERA performed a limited Phase II ESA at the Site in July 2017. The objective of the limited Phase II ESA was to evaluate soil and groundwater quality in select on-site locations. The limited Phase II ESA included advancing four borings on the Site to collect soil and groundwater samples for chemical analysis. The sampling locations and rationale for the limited Phase II ESA conducted in July 2017 are discussed in Table 1 and presented on Figure 2.

Seven soil samples collected from the four borings were submitted for analysis; a shallow soil sample collected at the 1.5- to 2-foot depth interval from each boring and a deeper soil sample collected at a depth of approximately 20 feet below ground surface (bgs) from borings SB-2, SB-3, and SB-4. The deeper soil sample from these three borings was analyzed to evaluate potential impacts at depth because a grab groundwater sample could not be obtained at these locations. The soil samples were analyzed for volatile organic compounds (VOCs), Total Petroleum Hydrocarbons (TPH) quantified as gasoline (TPHg), TPH quantified as diesel (TPHd), TPH quantified as motor oil (TPHmo), TPH quantified as bunker oil (TPHbo), TPH quantified as kerosene (TPHk), and TPH quantified as Stoddard solvent (TPHss). The shallow

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soil samples were also analyzed for Leaking Underground Fuel Tank (LUFT) Manual 5 metals (cadmium, chromium, lead, nickel, and zinc). TPHmo was reported in one soil sample (SB-1-2) at a concentration of 54 milligrams per kilogram (mg/kg). This concentration is below its' Tier 1 Environmental Screening Level (ESL) of 100 mg/kg established by the California Environmental Protection Agency, Regional Water Quality Control Board-San Francisco Bay Region (SFBRWQCB, Environmental Screening Levels Tier 1 ESLs, February 2016, Rev. 3).

A grab groundwater sample was collected from boring SB-1 and analyzed for VOCs, TPHg, TPHd, TPHmo, TPHbo, TPHk, and TPHss. The VOCs tetrachloroethene (PCE) and trichloroethene (TCE) were detected in the groundwater sample. The PCE concentration (4.7 micrograms per liter [ $\mu\text{g/L}$ ]) is above its' Tier 1 ESL (3  $\mu\text{g/L}$ ; SFBRWQCB, Environmental Screening Levels Tier 1 ESLs, February 2016, Rev. 3) but the TCE concentration (2  $\mu\text{g/L}$ ) is below its' Tier 1 ESL (5  $\mu\text{g/L}$ ). The PCE Tier 1 ESL is based on Groundwater Vapor Intrusion Human Health Risk Level (GVIHRL) for residential properties with shallow groundwater; for commercial/industrial properties with shallow groundwater the (GVIHRL) is 26  $\mu\text{g/L}$ .

The analytical results from the limited Phase II ESA are summarized in Tables 2 and 3.

### Objective and Methodology

The objective of the Phase II ESA Data Gaps Investigation is to 1) address identified data gaps by further characterizing subsurface conditions; and 2) collect sufficient samples to evaluate impacts to the Site from past site activities and migration of off-site plumes onto the Site. To meet this objective, soil gas, soil, and groundwater samples will be collected with samples submitted to the project laboratory for chemical analysis. The analytical results will be compared to established screening levels for the detected compounds, if any. The results, conclusions, and recommendations will be presented in a report of findings.

Based on the available historical site information, data obtained during the limited Phase II ESA, and review of available information for off-site activities, sufficient data will be obtained during the proposed Phase II ESA data gaps investigation to evaluate impacts to the Site from on-site and off-site activities.

### Scope of Work

ERA proposes advancing ten additional borings (SB-1a and SB-5 through SB-13 on Figure 2) on the Site to allow collection of soil gas, soil, and/or groundwater samples. Sampling locations and rationale for the sampling locations, media, and depths are discussed in Table 4 and the sampling locations are presented on Figure 2.

Groundwater is anticipated to be encountered at depths of approximately 35 feet bgs or less, therefore, the proposed maximum depth for the borings is 35 feet bgs. Information obtained by Basics Environmental indicated that local groundwater flow direction is assumed to be towards the southwest. Based on depth-to-water measurements in groundwater monitoring wells at the east adjoining property (4240 International Boulevard), groundwater was calculated to flow in an easterly to southwesterly direction.

A site-specific *Health and Safety Plan* will be prepared for use during the Phase II ESA data gaps investigation as required by the Occupational Health and Safety Administration (OSHA) Standard "Hazardous Waste Operations and Emergency Response" guidelines (29 CFR 1910.120). ERA will obtain a drilling permit from Alameda County Public Works Agency (ACPWA) prior to commencing intrusive field activities and will coordinate field activities with ACPWA. The proposed sampling locations will be cleared for underground utilities by a private

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utility locator and Underground Services Alert North (USA North) will be notified at least 48 hours prior to intrusive field activities.

Soil samples will be collected in new acetate sleeves at depths of between 0 feet and 5 feet, 5 feet and 10 feet, and at depth intervals where evidence of environmental impacts is noted (chemical staining, elevated PID, etc.). New polyvinyl chloride (PVC) casing (with slotted casing in the lower portion of the boreholes and blank casing above the slotted casing to the ground surface) will be placed in the exterior boreholes and groundwater will be allowed to flow into the casing. Groundwater will be collected from the casing to fill the laboratory-provided containers appropriate for the requested analysis. The soil and groundwater samples will be placed on ice and the soil gas, soil, and groundwater samples will be transported under chain-of-custody protocols to the project laboratory.

After completing the sampling activities, each boring will be backfilled with cement grout and bentonite and sealed at grade with asphalt or soil, as appropriate. The investigation-derived waste (IDW), including soil cuttings and rinseate, produced during sampling activities will be containerized and left on site pending receipt and review of analytical data. ERA can assist in evaluating appropriate off-site disposal options.

The results will be presented in a report of findings which will present a summary of the previous investigations, the procedures and results for this investigation, figures showing sampling locations, and tables presenting analytical results compared to published screening levels. Copies of the analytical laboratory report will be included in an appendix.

### Closing

If you have questions regarding this work plan, please contact the undersigned by telephone at (916) 677-9897 and by email at [litafreeman@gmail.com](mailto:litafreeman@gmail.com).

Sincerely,

Environmental Risk Assessors



Lita D. Freeman, PG  
Professional Geologist

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Table 1: Limited Phase II ESA Data Gaps and Rationale – July 2017 Investigation  
International Boulevard Property  
4200 International Boulevard  
Oakland, California 94607

Item	Data Gap	Investigation	Rationale	Analysis
1	Lack of soil analytical data for shallow depth intervals and lack of groundwater analytical data in the area southwest of the former fueling area (downgradient direction based on assumed groundwater flow direction).	<p>Advanced one boring (SB-1) using a direct-push drilling rig to a depth of approximately 24 feet below ground surface (bgs) to the southwest of the former fueling area.</p> <p>Screened soil visually for evidence of environmental impacts (staining) and with a photoionization detector (PID) during drilling. The soil sample depth interval selected for initial analysis was based on the presence of chemical staining, elevated PID readings, or appropriate depth interval based on the former use of the area.</p> <p>Collected soil samples for volatile organic compounds (VOCs), Total Petroleum Hydrocarbons (TPH) quantified as gasoline (TPHg), TPH quantified as diesel (TPHd), TPH quantified as motor oil (TPHmo), TPH quantified as bunker oil (TPHbo), TPH quantified as kerosene (TPHk), TPH quantified as Stoddard solvent (TPHss), and Leaking Underground Fuel Tank (LUFT) Manual 5 metals (cadmium, chromium, lead, nickel, and zinc) analysis.</p> <p>Collected a grab groundwater sample for VOCs, TPHg, TPHd, TPHmo, TPHbo, TPHk, and TPHss analysis.</p>	The Site was used for commercial purposes in the past such as a sash and door manufacturing facility and an auto sales dealership with auto repair and fueling services. The former fueling area was in the approximately location of Burger King's drive-through window. The location for boring SB-1 was selected based on its' downgradient direction (based on assumed groundwater flow direction) from the former fueling area; access constraints (inability to shut down the drive-through window lane, boulders in landscaping) prevented advancing boring SB-1 closer to the former fueling area.	<p>The soil sample from the 1.5- to 2-foot depth interval was selected for analysis because of discoloration (black in color).</p> <p>Soil and groundwater samples were analyzed for:</p> <ul style="list-style-type: none"> <li>-VOCs by Method 8260;</li> <li>-TPHg by Method SW8015B (purgeable); and</li> <li>- TPHd, TPHmo, TPHbo, TPHk, and TPHss by Method SW8015B (extractable).</li> </ul> <p>The soil sample was also analyzed for:</p> <ul style="list-style-type: none"> <li>-LUFT Manual 5 metals by Method 6010B/6020.</li> </ul>
2	Lack of soil analytical data for shallow depth intervals and lack of groundwater analytical data in the area of the former auto repair building.	<p>Advanced one boring (SB-2) using a direct-push drilling rig to a depth of approximately 24 feet bgs in the area of the former auto repair building.</p> <p>Screened soil visually for evidence of environmental impacts (staining) and with a PID during drilling. The soil sample depth interval selected for initial analysis was based on the presence of chemical staining, elevated PID readings, or appropriate depth interval based on the former use of the area.</p>	The location for boring SB-2 was selected because the most likely area of impacts from past site activities would be within the area of the former auto repair building.	The shallow soil sample from the 1.5- to 2-foot depth interval was selected for analysis because impacts from activities within the building would likely be shallow. The deeper soil sample from the 20- to 20.5-foot depth interval was selected for analysis because a grab groundwater sample was not obtained from the borehole.

Table 1: Limited Phase II ESA Data Gaps and Rationale – July 2017 Investigation  
International Boulevard Property  
4200 International Boulevard  
Oakland, California 94607

Item	Data Gap	Investigation	Rationale	Analysis
		<p>A shallow soil sample was collected for VOCs, TPHg, TPHd, TPHmo, TPHbo, TPHk, TPHss, and LUFT Manual 5 metals analysis.</p> <p>Because of drilling refusal, boring SB-2 could not be advanced to groundwater. Therefore, a deeper soil sample was collected for VOCs, TPHg, TPHd, TPHmo, TPHbo, TPHk, and TPHss analysis to help evaluate potential impacts in the water-bearing zone.</p>		<p>Soil samples were analyzed for:</p> <ul style="list-style-type: none"> <li>-VOCs by Method 8260;</li> <li>-TPHg by Method SW8015B (purgeable); and</li> <li>- TPHd, TPHmo, TPHbo, TPHk, and TPHss by Method SW8015B (extractable).</li> </ul> <p>The shallow soil sample was also analyzed for:</p> <ul style="list-style-type: none"> <li>-LUFT Manual 5 metals by Method 6010B/6020.</li> </ul>
3	<p>Lack of soil analytical data for shallow depth intervals and lack of groundwater analytical data in the area to the southwest (downgradient) of the former auto repair building.</p>	<p>Advanced one boring (SB-3) using a direct-push drilling rig to a depth of approximately 21 feet bgs to the southwest (downgradient) of the former auto repair building.</p> <p>Screened soil visually for evidence of environmental impacts (staining) and with a PID during drilling. The soil sample depth interval selected for initial analysis was based on the presence of chemical staining, elevated PID readings, or appropriate depth interval based on the former use of the area.</p> <p>A shallow soil sample was collected for VOCs, TPHg, TPHd, TPHmo, TPHbo, TPHk, TPHss, and LUFT Manual 5 metals analysis.</p> <p>Because of drilling refusal, boring SB-3 could not be advanced to groundwater. Therefore, a deeper soil sample was collected for VOCs, TPHg, TPHd, TPHmo, TPHbo, TPHk, and TPHss analysis to help evaluate potential impacts in the water-bearing zone.</p>	<p>The location for boring SB-3 was selected because impacts from past site activities within the area of the former auto repair building would likely migrate downward to groundwater then in the predominant groundwater flow direction.</p>	<p>The soil sample from the 1.5- to 2-foot depth interval was selected for analysis because impacts from activities within the building would likely be shallow. The deeper soil sample from the 19.5- to 20-foot depth interval was selected for analysis because a grab groundwater sample was not obtained from the borehole. The soil samples were analyzed for:</p> <ul style="list-style-type: none"> <li>-VOCs by Method 8260;</li> <li>-TPHg by Method SW8015B (purgeable); and</li> <li>-TPHd, TPHmo, TPHbo, TPHk, and TPHss by Method SW8015B (extractable).</li> </ul> <p>The shallow soil sample was also analyzed for:</p> <ul style="list-style-type: none"> <li>-LUFT Manual 5 metals by Method 6010B/6020.</li> </ul>

Table 1: Limited Phase II ESA Data Gaps and Rationale – July 2017 Investigation  
International Boulevard Property  
4200 International Boulevard  
Oakland, California 94607

Item	Data Gap	Investigation	Rationale	Analysis
4	Lack of soil analytical data for shallow depth intervals and lack of groundwater analytical data in the area of the former parts department building.	<p>Advanced one boring (SB-4) using a direct-push drilling rig to a depth of approximately 21 feet bgs in the area of the former parts department building.</p> <p>Screened soil visually for evidence of environmental impacts (staining) and with a PID during drilling. The soil sample depth interval selected for initial analysis was based on the presence of chemical staining, elevated PID readings, or appropriate depth interval based on the former use of the area.</p> <p>A shallow soil sample was collected for VOCs, TPHg, TPHd, TPHmo, TPHbo, TPHk, TPHss, and LUFT Manual 5 metals analysis.</p> <p>Because of drilling refusal, boring SB-4 could not be advanced to groundwater. Therefore, a deeper soil sample was collected for VOCs, TPHg, TPHd, TPHmo, TPHbo, TPHk, and TPHss analysis to help evaluate potential impacts in the water-bearing zone.</p>	The location for boring SB-4 was selected because the most likely area of impacts from past site activities would be within the area of the former parts department building.	<p>The soil sample from the 1.5- to 2-foot depth interval was selected for analysis because impacts from activities within the building would likely be shallow. The deeper soil sample from the 19.5- to 20-foot depth interval was selected for analysis because a grab groundwater sample was not obtained from the borehole.</p> <p>Soil samples were analyzed for:</p> <ul style="list-style-type: none"> <li>-VOCs by Method 8260;</li> <li>-TPHg by Method SW8015B (purgeable);</li> <li>-TPHd, TPHmo, TPHbo, TPHk, and TPHss by Method SW8015B (extractable).</li> </ul> <p>The shallow soil sample was also analyzed for:</p> <ul style="list-style-type: none"> <li>-LUFT Manual 5 metals by Method 6010B/6020.</li> </ul>

**Table 2**  
**Soil and Groundwater Samples Organics Analytical Summary**  
**International Boulevard Property**  
**4200 International Boulevard**  
**Oakland, California**

On-Site Location/ Comments	Sample ID	Sample Depth (feet bgs) <sup>1</sup>	Matrix	Petroleum Hydrocarbons (Soil: mg/kg, GW:µg/L)						VOCs <sup>2</sup> (soil: mg/kg, GW: µg/L)						
				TPHg <sup>3</sup>	TPHd <sup>3</sup>	TPHmo <sup>3</sup>	TPHbo <sup>3</sup>	TPHk <sup>3</sup>	TPHss <sup>3</sup>	PCE <sup>4</sup>	TCE <sup>4</sup>	1,1-DCE <sup>4</sup>	Benzene	Toluene	Ethylbenzene	Xylenes
<b>ESL for Soil<sup>5</sup></b>				100	240	100	NE	NE	100	0.42	0.46	0.55	0.044	2.9	1.4	2.3
Southwest of Former Fueling/Serving Area	SB-1-2	1.5 - 2	Soil	<0.5	<10	<b>54</b>	<10	<10	<10	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01
Former Auto Repair Building Area	SB-2-2	1.5 - 2	Soil	<0.5	<10	<10	<10	<10	<10	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01
	SB-2-20.5	20 - 20.5	Soil	<0.5	<10	<10	<10	<10	<10	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01
Southwest of Former Auto Repair Building	SB-3-2	1.5 - 2	Soil	<0.5	<10	<10	<10	<10	<10	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01
	SB-3-20	19.5 - 20	Soil	<0.5	<10	<10	<10	<10	<10	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01
Former Parts Dept. Building Area	SB-4-2	1.5 - 2	Soil	<0.5	<10	<10	<10	<10	<10	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01
	SB-4-20	19.5 - 20	Soil	<0.5	<10	<10	<10	<10	<10	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01
<b>ESL for Groundwater<sup>5</sup></b>				100	100	100 <sup>6</sup>	NE	NE	100	3	5	3.2	1	40	13	20
Southwest of Former Fueling/Serving Area	SB-1-GW	NA	Ground- water	<50	<50	<100	<50	<50	<50	<b>4.7</b>	2	<0.2	<0.1	<0.1	<0.1	<0.2

**Notes:**

Samples collected July 10, 2017.

Units: mg/kg = milligrams per kilogram, µg/L = micrograms per liter

1. bgs = below ground surface

2. Volatile Organic Compound (VOCs) analyzed using U.S. EPA Method 8260B.

3. TPHg, TPHd, TPHmo, TPHk, TPHss = Total petroleum hydrocarbons (TPH) quantified as gasoline (TPHg), TPH quantified as diesel (TPHd), TPH quantified as motor oil (TPHmo), TPH quantified as kerosene (TPHk), and TPH quantified as Stoddard solvent (TPHss) analyzed using U.S. EPA Method SW8015B.

4. PCE = Tetrachloroethene, TCE = Trichloroethene, 1,1-DCE = 1,1-Dichloroethene

5. ESL = Environmental Screening Levels (ESLs) for soil and groundwater as established by the California Environmental Protection Agency, San Francisco Bay Regional Water Quality Control Board, Tier 1 Environmental Screening Levels (SFBRWQCB, 2016). February 2016.

6. SFBRWQCB, 2016, Note 2 states: TPH motor oil is not soluble. TPH motor oil detections in water most likely are petroleum degradates or less likely non-aqueous phase liquid (NAPL). If the detections are degradates, add TPH motor oil and TPH diesel results and compare to TPH diesel criterion. The ESL established for TPHd is presented as the ESL for TPHmo.

NE = Not established

<0.5 = Compound not reported at or above the stated concentration

**Bold** = Compound reported at stated concentration

**Bold** = Compound reported at a concentration above its' Tier 1 ESL



**Table 3**  
**Soil Samples Inorganics Analytical Summary**  
**International Boulevard Property**  
**4200 International Boulevard**  
**Oakland, California**

On-Site Location/ Comments	Sample ID	Sample Depth (feet bgs) <sup>1</sup>	Matrix	Metals (soil: mg/kg)				
				Cadmium	Chromium	Lead	Nickel	Zinc
<b>Analytes</b>								
<b>ESL for Soil</b> <sup>2</sup>				0.00006	see below	80	83	23,000
Southwest of Former Fueling/Serving Area	SB-1-2	1.5 - 2	Soil	<2	<b>33</b>	<b>86</b>	<b>42</b>	<b>80</b>
Former Auto Repair Building Area	SB-2-2	1.5 - 2	Soil	<2	<b>30</b>	<3	<b>40</b>	<b>25</b>
Southwest of Former Auto Repair Building	SB-3-2	1.5 - 2	Soil	<2	<b>26</b>	<3	<b>31</b>	<b>25</b>
Former Parts Dept. Building Area	SB-4-2	1.5 - 2	Soil	<2	<b>24</b>	<b>22</b>	<b>34</b>	<b>41</b>

**Notes:**

Samples collected July 10, 2017.

Units: mg/kg = milligrams per kilogram

Soil samples were analyzed for Leaking Underground Fuel Tank 5 metals using U.S. EPA Method 6010B.

1. bgs = below ground surface

2. ESL = Environmental Screening Levels (ESLs) for soil as established by the California Environmental Protection Agency, San Francisco Bay Regional Water Quality Control Board Tier 1 Environmental Screening Levels (SFBRWQCB, 2016), February 2016.

<1.8 = Compound not reported at or above stated concentration

**Bold** = Compound reported at stated concentration

**Bold** = Compound reported above its' Tier 1 ESL

*Italics* = Compound laboratory reporting limit is above ESL

Chromium III ESL = 120,000 mg/kg

Chromium VI ESL = 1.3 mg/kg

Table 4: Data Gaps and Proposed PII ESA Data Gaps Investigation  
International Boulevard Property  
4200 International Boulevard  
Oakland, California 94607

Item	Data Gap	Proposed Investigation	Rationale	Analysis
1	Lack of data on impacts to the subsurface from past site activities and migration of compounds of concern (COCs) in soil gas.	<p>Advance three borings (SB-1a, SB-5, SB-6) on site to a depth of approximately 5 feet below ground surface (bgs) at select locations and collect soil gas samples for volatile organic compounds (VOCs) analysis. Soil gas samples will be collected using a roto-hammer to drive a hardened, reverse-threaded steel driving point into the subsurface. The soil gas samples will be collected in general accordance with the California Environmental Protection Agency (Cal-EPA) Department of Toxic Substances Control (DTSC) <i>Vapor Intrusion Guidance</i> (DTSC, 2011).</p> <p>Sampling procedures will include using a helium shroud to collect soil gas samples in evacuated 1-liter stainless steel Summa canisters equipped with regulators to control sample collection flow rate.</p>	<p>The Site was used for commercial purposes in the past such as a sash and door manufacturing facility and an auto sales dealership with auto repair and fueling services. Tetrachloroethene (PCE) was reported in the groundwater beneath the Site with the potential to migrate upward through the soil column into the current on-site building. The rationale for selecting the location of each boring is presented below.</p> <p><b>SB-1a:</b> This location was selected based on its' downgradient direction (based on assumed groundwater flow direction) from the former fueling area and the presence of PCE at a concentration of 4.7 micrograms per liter (µg/L) in the groundwater sample collected from boring SB-1 during the July 2017 investigation.</p> <p><b>SB-5:</b> This location was selected based on its' downgradient direction (based on assumed groundwater flow direction) from the former auto repair building, proximity to the current on-site building, a surface level approximately equivalent to the bottom of the building's concrete floor slab, the presence of asphalt pavement at the sampling location, and a concrete sidewalk between the pavement edge and the current on-site building.</p> <p><b>SB-6:</b> This location was selected based on its' presence within the reported footprint of the former auto repair building, the proximity to the current on-site building, a surface level approximately equivalent to the bottom of the building's concrete floor slab, the presence of asphalt pavement at the sampling location, and a concrete sidewalk between the pavement edge and the current on-site building.</p>	Three soil gas samples to be analyzed for VOCs by TO-15.

Table 4: Data Gaps and Proposed PII ESA Data Gaps Investigation  
International Boulevard Property  
4200 International Boulevard  
Oakland, California 94607

Item	Data Gap	Proposed Investigation	Rationale	Analysis
2	Lack of soil analytical data for shallow depth intervals in the area of boring SB-1 advanced during the July 2017 investigation.	<p>Advance one boring (SB-1a) near boring SB-1 to a depth of 10 feet bgs and collect soil samples from the surface to 5-foot depth interval and the 5-foot to 10-foot depth interval for VOCs, semi-VOCs, Total Petroleum Hydrocarbons (TPH) quantified as gasoline (TPHg), TPH quantified as diesel (TPHd), TPH quantified as motor oil (TPHmo), and Leaking Underground Fuel Tank (LUFT) Manual 5 metals (cadmium, chromium, lead, nickel, and zinc) analysis.</p> <p>During sampling, soil will be screened visually for evidence of environmental impacts (staining) and with a photo-ionization detector (PID). The soil sample depth interval selected for initial analysis will be based on the presence of chemical staining, elevated PID readings, or appropriate depth interval based on the former use of the area.</p>	One soil sample was collected from boring SB-1 during the July 2017 investigation and analyzed for a limited list of compounds. The location of boring SB-1a was selected based on the presence of TPHmo at a concentration of 54 milligrams per kilogram (mg/kg) in the soil sample collected at a depth of 1.5-feet to 2-feet bgs from boring SB-1 during the July 2017 investigation. Collecting additional soil samples from this area is proposed with samples analyzed for a full suite of analytes.	<p>Two soil samples (one from the surface to 5-foot depth interval and one from the 5-foot to 10-foot depth interval) to be analyzed by the following U.S. Environmental Protection Agency (U.S. EPA) Methods:</p> <ul style="list-style-type: none"> <li>-VOCs by Method 8260;</li> <li>-Semi-VOCs by Method 8270;</li> <li>-TPHg by Method SW8015B (purgeable);</li> <li>- TPHd and TPHmo by Method SW8015B (extractable); and</li> <li>-LUFT Manual 5 metals by Method 6010B/6020.</li> </ul>
3	Lack of soil analytical data for shallow depth intervals at select on-site locations.	<p>Advance two borings (SB-5 and SB-6) on site to a depth of 10 feet bgs and collect soil samples from the surface to 5-foot depth interval and the 5-foot to 10-foot depth interval for VOCs, semi-VOCs, TPHg, TPHd, TPHmo, and LUFT Manual 5 metals analysis.</p> <p>During sampling, soil will be screened visually for evidence of environmental impacts (staining) and with a PID. The soil sample depth interval selected for initial analysis will be based on the presence of chemical staining, elevated</p>	<p>Past uses of the Site included a sash and door manufacturing facility and an auto sales dealership with auto repair and fueling services. These activities potentially could have impacted the Site. The rationale for selecting the location of each boring is presented below.</p> <p><b>SB-5:</b> This location was selected based on its use as a soil gas sampling point and proximity to the former fueling area and former parts department building.</p> <p><b>SB-6:</b> This location was selected based on its use as a soil gas sampling point and proximity</p>	<p>Four soil samples (one from the surface to 5-foot depth interval and one from the 5-foot to 10-foot depth interval from each boring) to be analyzed for:</p> <ul style="list-style-type: none"> <li>-VOCs by Method 8260;</li> <li>-Semi-VOCs by Method 8270;</li> <li>-TPHg by Method SW8015B (purgeable);</li> <li>- TPHd and TPHmo by Method SW8015B (extractable); and</li> <li>-LUFT Manual 5 metals by Method 6010B/6020.</li> </ul>

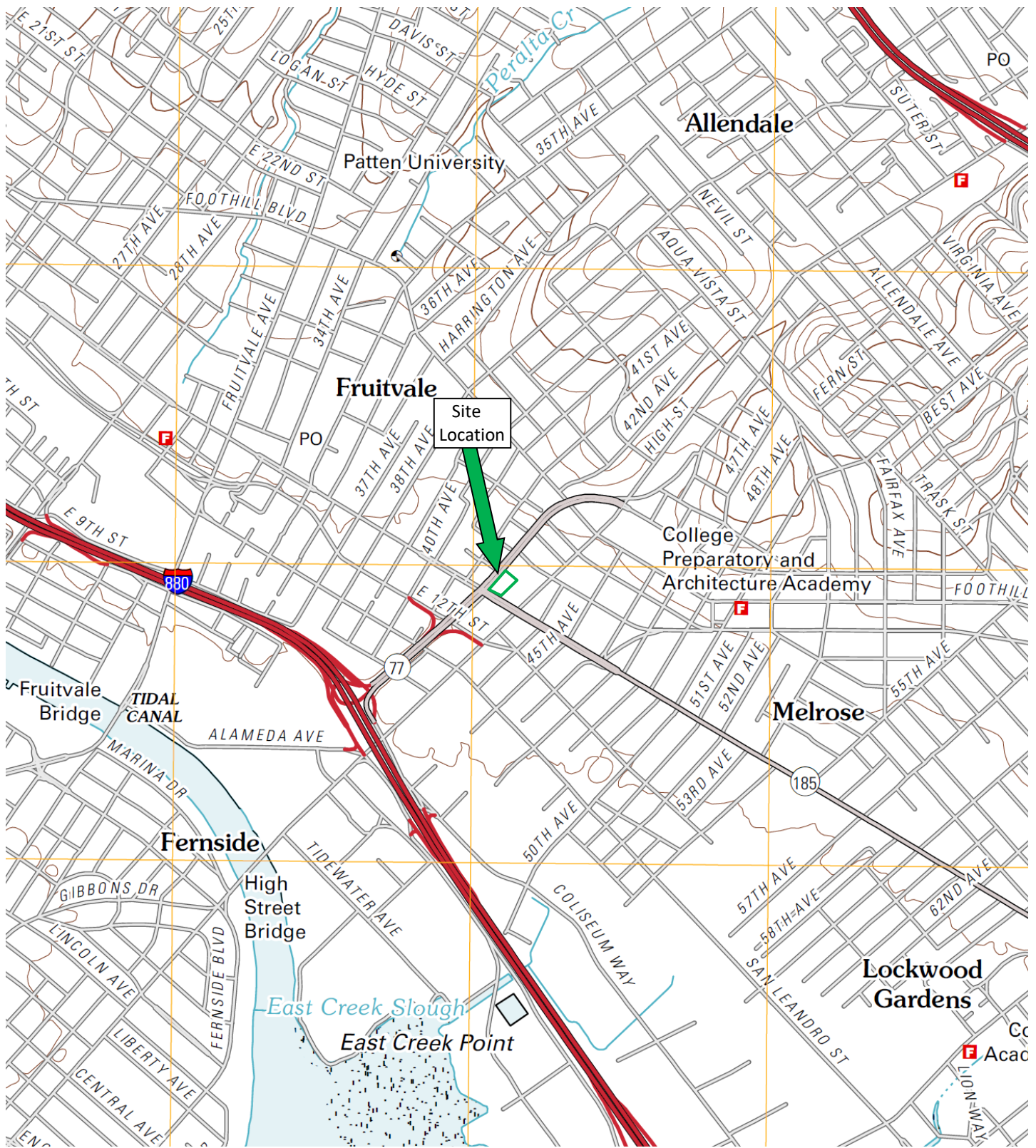
Table 4: Data Gaps and Proposed PII ESA Data Gaps Investigation  
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4200 International Boulevard  
Oakland, California 94607

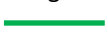

Item	Data Gap	Proposed Investigation	Rationale	Analysis
		<p>PID readings, or appropriate depth interval based on the former use of the area.</p> <p>During sampling, soil will be screened visually for evidence of environmental impacts (staining) and with a PID. The soil sample depth interval selected for initial analysis will be based on the presence of chemical staining, elevated PID readings, or appropriate depth interval based on the former use of the area.</p>	<p>to the former fueling area and former auto repair building.</p>	
4	<p>Lack of soil analytical data for shallow depth intervals across the Site.</p>	<p>Advance seven borings (SB-7 through SB-13) on site to a depth of 10 feet bgs and collect soil samples from the surface to 5-foot depth interval and the 5-foot to 10-foot depth interval for VOCs, semi-VOCs, TPHg, TPHd, TPHmo, and LUFT Manual 5 metals analysis.</p> <p>During sampling, soil will be screened visually for evidence of environmental impacts (staining) and with a PID. The soil sample depth interval selected for initial analysis will be based on the presence of chemical staining, elevated PID readings, or appropriate depth interval based on the former use of the area.</p>	<p>Past and/or current activities on the north and east adjoining properties could potentially impact the Site. A release has been reported on the east adjoining property (4240 International Boulevard) with PCE reported in the groundwater. The rationale for selecting each boring location is presented below.</p> <p><b>SB-7, SB-8, SB-9:</b> These locations across the northern border were selected based on their downgradient direction (based on assumed groundwater flow direction) from the buildings on the northern portion of the site parcel. Borings SB-7 and SB-9 are proposed to be advanced to the north of the Site (north of the proposed lot line adjustment). However, boring SB-8 is not located to the north of the Site because the size of the drilling rig prevents entry into the building in the area.</p> <p><b>SB-10, SB-11, SB-12, SB-13:</b> These locations across the eastern border were selected based on downgradient direction (based on assumed groundwater flow direction) from the area of releases reported on the east adjoining</p>	<p>Fourteen soil samples (one from the surface to 5-foot depth interval and one from the 5-foot to 10-foot depth interval from each boring) to be analyzed for:</p> <ul style="list-style-type: none"> <li>-VOCs by Method 8260;</li> <li>-Semi-VOCs by Method 8270;</li> <li>-TPHg by Method SW8015B (purgeable);</li> <li>- TPHd and TPHmo by Method SW8015B (extractable); and</li> <li>-LUFT Manual 5 metals by Method 6010B/6020.</li> </ul>

Table 4: Data Gaps and Proposed PII ESA Data Gaps Investigation  
International Boulevard Property  
4200 International Boulevard  
Oakland, California 94607

Item	Data Gap	Proposed Investigation	Rationale	Analysis
5	Lack of soil analytical data for deep depth intervals across the Site and lack of groundwater analytical data across the Site.	<p>Advance seven borings (SB-7 through SB-13) on site to a depth of approximately 35 feet bgs and collect soil samples from depth intervals greater than 10 feet bgs if evidence of environmental impacts noted (elevated PID readings, staining, etc.) and groundwater samples for VOCs, semi-VOCs, TPHg, TPHd, and TPHmo analysis. Soil samples, if collected, will also be analyzed for LUFT Manual 5 metals analysis.</p> <p>During sampling, soil will be screened visually for evidence of environmental impacts (staining) and with a PID. The soil sample depth interval selected for initial analysis will be based on the presence of chemical staining, elevated PID readings, or appropriate depth interval based on the former use of the area.</p>	<p>property. Boring SB-13 is also located near the southern site border.</p> <p>Buildings and areas on the northern portion of the site parcel and the east adjoining property were formerly and/or are currently used for auto repairs, auto sales lots, and related activities. These activities may have impacted groundwater beneath these areas. The rationale for selecting the location of each boring is presented below.</p> <p><b>SB-7, SB-8, SB-9:</b> These locations across the northern border were selected based on their downgradient direction (based on assumed groundwater flow direction) from the buildings on the northern portion of the site parcel. Impacts to groundwater at these locations would potentially be related to releases on the northern portion of the site parcel.</p> <p><b>SB-10, SB-11, SB-12, SB-13:</b> These locations across the eastern border were selected based on their downgradient direction (based on assumed groundwater flow direction) from the area of releases reported on the east adjoining property. Borings SB-12 and SB-13 are also in the area of the former parts department building, and boring SB-13 is located near the southern site border. Impacts (if any) to groundwater at these locations would potentially be related to releases on the eastern portion of the site parcel. Analysis of a groundwater sample from boring SB-13 will provide data on potential impacts from activities on the south adjoining properties (across International Boulevard).</p>	<p>Soil samples, if collected, and grab groundwater samples to be analyzed for:</p> <ul style="list-style-type: none"> <li>-VOCs by Method 8260;</li> <li>-Semi-VOCs by Method 8270;</li> <li>-TPHg by Method SW8015B (purgeable); and</li> <li>- TPHd and TPHmo by Method SW8015B (extractable).</li> </ul> <p>Soil samples will also be analyzed for:</p> <ul style="list-style-type: none"> <li>-LUFT Manual 5 metals by Method 6010B/6020.</li> </ul>

## FIGURES



Legend	 Site (boundaries approximate)	Source: USGS Oakland East, CA Quadrangle Topographic Map, 2012	 North
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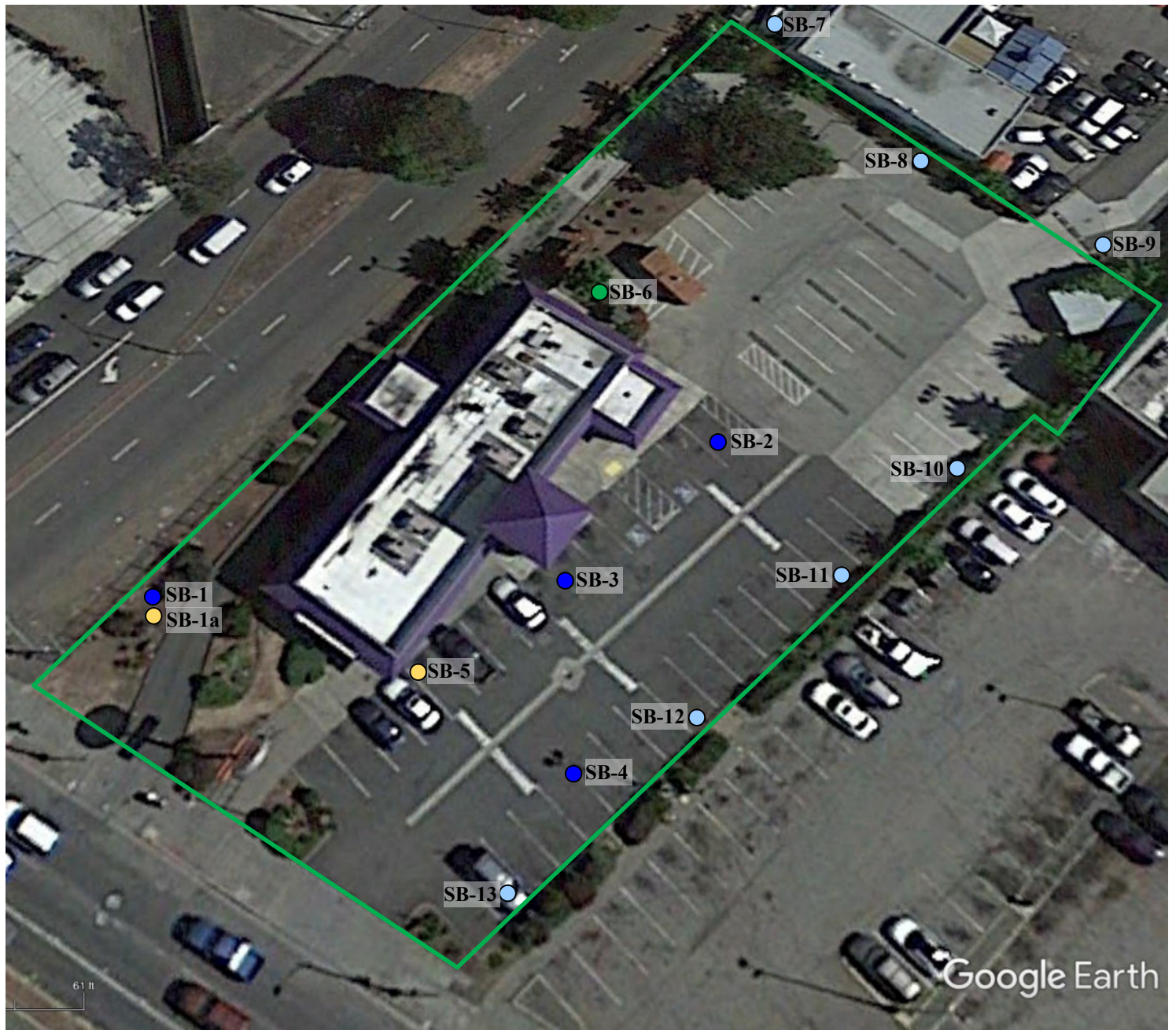


### Site Location Map

PHASE II ESA DATA GAPS INVESTIGATION  
 4200 International Boulevard, Oakland, California 94601

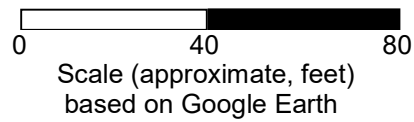
PN: 01-2017-1600-001  
 Date: September 14, 2017  
 EP: Lita Freeman

**Figure 1**



**Legend**

- Approximate Property Boundary
- Boring Location and Identification (ERA, July 2017)
- Proposed Soil Gas Sampling Location and Identification
- Proposed Soil Gas and Soil Sampling Location and Identification
- Proposed Soil and Groundwater Sampling Location and Identification



**Site Plan**

**PHASE II ESA DATA GAPS INVESTIGATION**

4200 International Boulevard, Oakland, California 94601

PN: 01-2017-1600-001  
 Date: September 14, 2017  
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**Figure 2**