CONESTOGA-ROVERS & ASSOCIATES

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TRANSMITTAL

DATE: January 26, 2010

REFERENCE NO.: 060119

PROJECT NAME: 2350 (2368) Harrison Street, Oakland

TO: Jerry Wickham
Alameda County Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Please find enclosed:
- ☐ Draft
- ☐ Originals
- ☐ Prints
- ☒ Final
- ☐ Other

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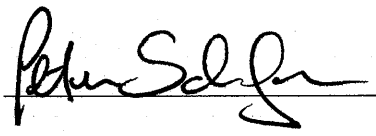
- ☐ Mail
- ☐ Overnight Courier
- ☐ Same Day Courier
- ☒ Other GeoTracker and ACEH FTP uploads

QUANTITY	DESCRIPTION
1	Subsurface Investigation Work Plan Addendum No. 2

- ☐ As Requested
- ☐ For Your Use
- ☒ For Review and Comment
- ☐
- ☐

COMMENTS:
If you have any questions regarding the contents of this document, please call Peter Schaefer at (510) 420-3319.

Copy to: Denis Brown, Shell Oil Products US, 20945 S. Wilmington Avenue, Carson, CA 90810
Richard Burge, 490 Grand Avenue, Suite 100, Oakland, CA 94610

Completed by: Peter Schaefer Signed: 

Filing: **Correspondence File**

Denis L. Brown
Shell Oil Products US
HSE - Environmental Services
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Tel (707) 865 0251
Fax (707) 865 2542
Email denis.l.brown@shell.com

Mr. Jerry Wickham
Alameda County Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Subject: Former Shell Service Station
2350 (2368) Harrison Street
Oakland, California
SAP Code. 173318
Incident No. 97743969
ACEH No. RO0000505

Dear Mr. Wickham:

The attached document is provided for your review and comment. Upon information and belief, I declare, under penalty of perjury, that the information contained in the attached document is true and correct.

As always, please feel free to contact me directly at (707) 865-0251 with any questions or concerns.

Sincerely,

Denis L. Brown
Project Manager

SUBSURFACE INVESTIGATION WORK PLAN ADDENDUM NO. 2

FORMER SHELL SERVICE STATION
2350 (2368) HARRISON STREET
OAKLAND, CALIFORNIA

SAP CODE 173318
INCIDENT NO. 97743969
AGENCY NO. RO0000505

Prepared by:
Conestoga-Rovers & Associates

5900 Hollis Street, Suite A
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JANUARY 26, 2010
REF. NO. 060119 (13)
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TABLE OF CONTENTS

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(Following Text)

1.0 INTRODUCTION

Conestoga-Rovers & Associates (CRA) prepared this second work plan addendum on behalf of Equilon Enterprises LLC dba Shell Oil Products US (Shell). During a January 6, 2010 teleconference with Alameda County Environmental Health (ACEH), Shell agreed to conduct additional investigation of soil vapor impacts beneath the sidewalk adjacent to the 7-Eleven Store building. This work will be conducted in addition to the soil vapor investigation proposed in our November 11, 2009 *Survey of Potential Off-Site Sources and Subsurface Investigation Work Plan Addendum,* which was conditionally approved in ACEH's December 17, 2009 letter.

The subject property is a former Shell service station located on the southern corner of the Harrison Street and Bay Place intersection in Oakland, California (Figure 1). The former station, whose address was 2368 Harrison Street, included underground fuel storage tanks (USTs), a waste oil tank, three dispenser islands, and a station building (Figure 2). The site is currently occupied by a 7-Eleven Store, whose address is 2350 Harrison Street, and the area surrounding the station is predominantly a mix of commercial and residential use (Figure 2). Glen Echo Creek runs in an underground culvert along Harrison Street and flows into a concrete-lined channel approximately 280 feet south of the site. The creek then flows into Lake Merritt which is approximately 650 feet south of the site.

Site history and other background information was presented in CRA's June 26, 2009 *Subsurface Investigation Report* and is not repeated herein.

2.0 WORK PLAN ADDENDUM NO. 2

This addendum proposes the following additions to the soil vapor investigation proposed in our August 12, 2009 *Soil Vapor Probe Sampling Report* and in our November 11, 2009 *Survey of Potential Off-Site Sources and Subsurface Investigation Work Plan Addendum.*

CRA proposes to install two near sub-slab soil vapor probes in the sidewalk adjacent to the current building as shown on Figure 2. Data from this investigation will provide better understanding of overall site conditions and assist in development of a risk assessment. Specific tasks are described below.

2.1 NEAR SUB-SLAB SOIL VAPOR PROBE INSTALLATION

To further assess soil vapor concentrations beneath the site, CRA proposes to install two near sub-slab soil vapor probes (SVP-4 and SVP-5) into the sidewalk subsurface adjacent to the 7-Eleven Store building footprint (Figure 2).

A rotary hammer drill will be used to drill a "shallow" (approximately 1-inch deep) outer borehole (approximately 7/8-inch diameter) that partially penetrates the sidewalk slab. Cuttings will be removed using a towel moistened with distilled water or a portable vacuum cleaner.

The rotary hammer drill will then be used to drill a smaller diameter inner borehole, within the center of the outer borehole, approximately 3/8-inch diameter through the sidewalk material and approximately 3 inches into the base material to create an open cavity. The outer borehole will be cleaned a second time with a moistened towel or a portable vacuum cleaner.

Stainless steel tubing will be cut to a length that allows the probe to float within the sidewalk thickness to avoid obstruction of the probe with base material. The tubing will be approximately 1/4-inch diameter. Where necessary, the compression fittings will be stainless steel (approximately 1/4-inch outside diameter and 1/8-inch National Pipe Thread) Swagelok® female thread connectors. The probes will be constructed prior to drilling to minimize exposure time, or venting, of the base material through the open borehole.

Each near sub-slab soil vapor probe will be placed in the borehole so that the top of the probe is flush with the top of the sidewalk. The top of the probe will have a recessed stainless steel plug. A quick-drying, portland cement slurry will be injected or pushed into the annular space between the probe and the outer borehole. The cement will be allowed to dry for at least 24 hours prior to sampling.

2.2 SOIL VAPOR PROBE SAMPLING

Following the soil vapor probe installation, CRA will sample the two proposed near sub-slab probes (SVP-4 and SVP-5), the three existing soil vapor probes (SVP-1 through SVP-3), and the previously proposed shallow soil vapor probe (SVP-2A).

2.2.1 SUMMA CANISTERS

During sampling, the stainless steel tubing for each near sub-slab vapor probe will be connected to a control valve, and then to a flow regulator attached to a lab-supplied sampling manifold connecting two 1-liter Summa canisters (one purge canister and one sampling canister) with flow regulators and pressure gauges. Prior to sampling, a vacuum test will be conducted between the Summa canisters, the sampling manifold, and the valves by closing the valves and opening the purge Summa canister for approximately 10 minutes. Additionally, CRA will conduct a leak test using helium, as discussed below. At least three tubing volumes of air will be purged into the purge canister prior to sampling. Immediately after purging, soil vapor samples will be collected using the second 1-liter Summa canister. Each sample will be labeled, documented on a chain-of-custody, and submitted to a California State-Certified laboratory for possible analysis.

2.2.2 TEDLAR BAGS

Following collection of the Summa canister samples, CRA will collect soil vapor samples from probes SVP-4 and SVP-5 using a vacuum pump and Tedlar® bags. A sealed "lung sampler" containing a 1-liter Tedlar® bag will be attached to the probe and the vacuum pump will be attached to the box. The vacuum pump will lower the pressure in the "lung sampler" and draw air from the probe into the Tedlar® bag. To avoid breakage, bags will be filled no more than two-thirds full. Each sample will be labeled, documented on a chain-of-custody, placed in a protective box at room temperature, and submitted to a California State-Certified laboratory for analysis.

2.2.3 LEAK TESTING

To check the system for leaks, a containment unit (or shroud) will be placed to cover the soil gas probe surface completion and sampling manifold. Prior to soil gas probe purging, helium will be introduced into the containment unit to obtain a minimum 50 percent helium content level. The helium content within the containment unit will be confirmed using a helium meter. The helium meter readings will be recorded in CRA's field notes. Helium will continue to be introduced to the containment unit during soil gas probe purging and sampling.

All samples will be analyzed in a laboratory for helium. In the event that the helium meter measures a helium content of greater than 10 percent of the source concentration

(i.e., 10 percent of the helium content measured within the containment unit), the soil gas sample will be considered invalid.

2.3 CHEMICAL ANALYSES

2.3.1 NEAR SUB-SLAB SOIL VAPOR PROBES

As discussed in our January 6, 2010 teleconference with ACEH, substantial concentrations of petroleum hydrocarbons in vapor samples make it impossible to quantify volatile organic compounds (VOCs) at levels comparable to San Francisco Bay Regional Water Quality Control Board environmental screening levels (ESLs). Based on this analytical restriction, near sub-slab soil vapor samples collected in Tedlar® bags will be analyzed first to determine petroleum hydrocarbon concentrations. If the petroleum hydrocarbon concentrations in the screening sample are sufficiently low, additional analysis will be conducted using the Summa canister sample as detailed below.

Near sub-slab soil vapor samples collected in Tedlar® bags will be analyzed for total petroleum hydrocarbons as gasoline (TPHg), benzene, toluene, ethylbenzene, xylenes (BTEX) and naphthalene by EPA Method 8260B and for oxygen, carbon dioxide, methane, and helium by ASTM D Method 1946 (M). If the results of the analysis from the Tedlar® bag samples indicate that levels of petroleum hydrocarbons are sufficiently low to allow the laboratory to quantify VOCs below ESLs, vapor samples collected in the Summa canisters will be analyzed for a full scan of VOCs and naphthalene by EPA Method TO-15 and for helium by ASTM D 1946 (M).

2.3.2 EXISTING AND PROPOSED SOIL VAPOR PROBES

ACEH's December 17, 2009 letter requested full scan VOC analysis of samples from the existing and proposed soil vapor probes (SVP-1 through SVP-3 and SVP-2A). Full scan analyses of samples from soil vapor probes SVP-1 through SVP-3 has previously been conducted and only benzene and ethylbenzene concentrations exceeded the ESLs. As discussed above, the benzene and ethylbenzene concentrations resulted in elevated reporting limits for other VOCs above ESLs. Based on these previous results, further analysis of samples from these probes for the full scan of VOCs will not provide useful data and therefore is not warranted. CRA proposes to analyze samples from the soil vapor probes for TPHg, BTEX, and naphthalene by EPA Method 8260B and for oxygen, carbon dioxide, methane, and helium by ASTM D Method 1946 (M).

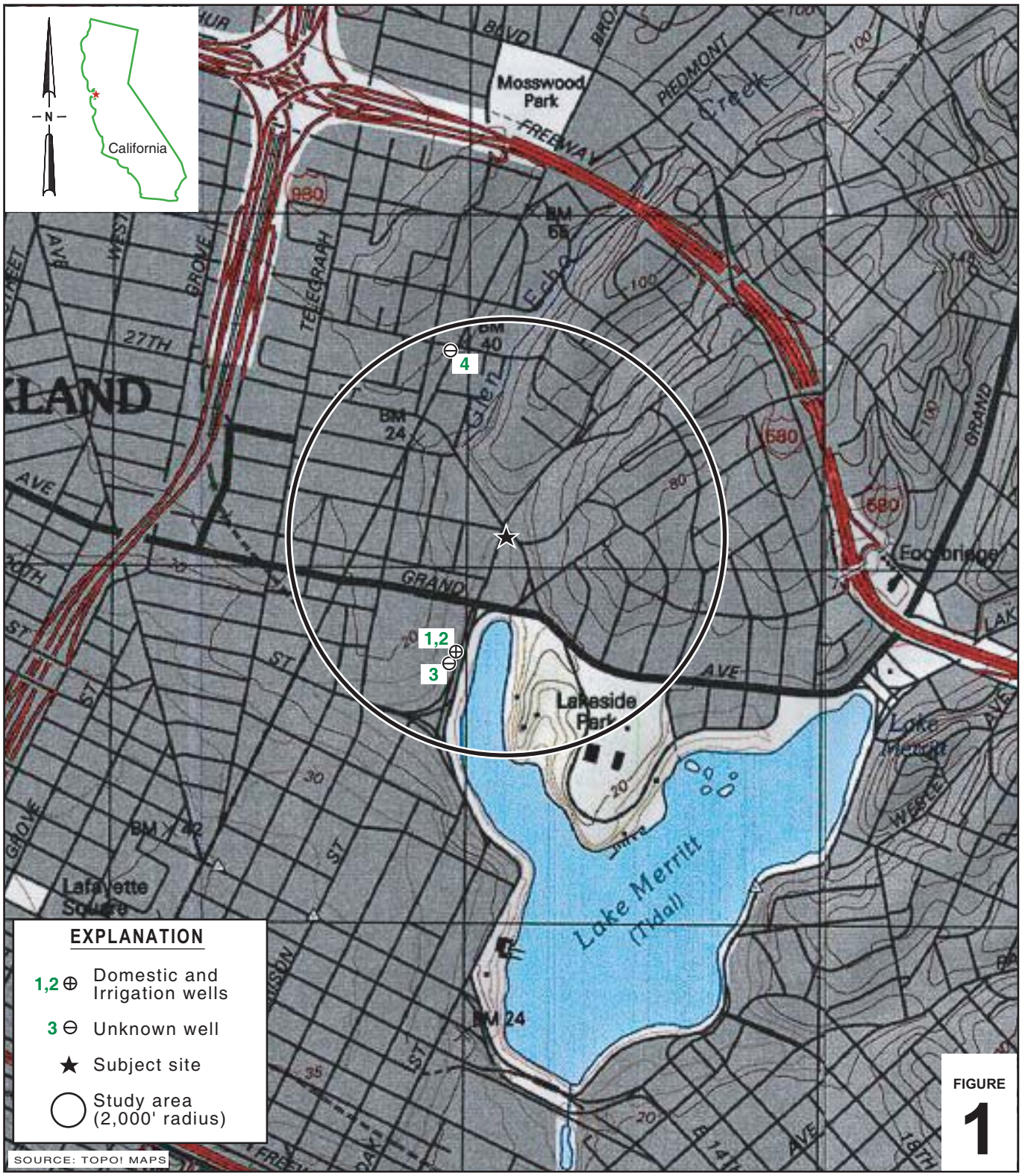
All of Which is Respectfully Submitted,
CONESTOGA-ROVERS & ASSOCIATES

Peter Schaefer, CEG, CHG

Aubrey K. Cool, PG

FIGURES

10/31/08



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0 1/8 1/4 1/2 1

SCALE : 1" = 1/4 MILE

FIGURE
1

Former Shell Service Station

2350 (2368) Harrison Street

Oakland, California

CONESTOGA-ROVERS & ASSOCIATES

Vicinity Map

01/14/10

Site Plan

HARRISON STREET

HARRISON STREET

Underground Culvert & Storm Drain (Approx.)

Former Shell Station
2368 Harrison St.

Islands

Light Pole

Former Dispenser Island

Former USTs

Former Waste Oil UST

Former Station Building

Former Tire/Wheel Hoist

Former Drive-on Hoist

Former Shell Station
2368 Harrison St.

7-11 Store Building
2350 Harrison St.

Beck's BMW
2344 Harrison St.

Rouse Tire
2340 Harrison St.

Rouse Tire

Offices

Merritt Hotel
(Former Lake Merritt Lodge)
2332 Harrison St.
(Former Heating Oil LUST)

Parking Lot

Parking Lot

Fenced Enclosure

Lamp Post

Sidewalk

Planter

Driveway

S-1 S-2 S-4 S-5 S-6

B-1 B-2 B-3 B-4

SVP-1 SVP-2 SVP-2a SVP-3 SVP-4 SVP-5

HP-1 HP-2

EXPLANATION

- SVP-4 — Proposed near sub-slab soil vapor probe
- SVP-2a — Proposed soil vapor probe
- B-1 — Soil boring location
- B-5 — Soil boring location, abandoned after 2' due to utility conflict
- HP-1 — Hydropunch location (CRA, 2009)
- SVP-1 — Soil vapor probe location
- S-1 — Monitoring well location
- Storm drain (STM)
- Sanitary sewer line (SAN)
- Water line (W)
- Electrical line (E)
- Gas line (G)
- Telecommunications line (T)
- Unknown utility line, indicated by private utility locator

N

0 10 20 40

Scale (ft)

FIGURE

2

Former Shell Service Station

2350 (2368) Harrison Street

Oakland, California

CONESTOGA-ROVERS & ASSOCIATES

I:\Shell\6-chars\0601--\060119-Oakland 2350 Harrison St\060119-FIGURES\060119 SITE PLAN.DWG