



**CONESTOGA-ROVERS
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TRANSMITTAL

DATE: May 31, 2013 REFERENCE NO.: 240483

PROJECT NAME: 5755 Broadway, Oakland

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

RECEIVED

By Alameda County Environmental Health at 2:23 pm, Jun 21, 2013

Please find enclosed: Draft Final
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 Prints

Sent via: Mail Same Day Courier
 Overnight Courier Other GeoTracker and Alameda County FTP

QUANTITY	DESCRIPTION
1	Revised Subsurface Investigation Work Plan

As Requested For Review and Comment
 For Your Use

COMMENTS:

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

Copy to: Perry Pineda, Shell Oil Products US (electronic copy)
Clint Mercer, SC Fuels (lessee), 1800 West Katella Avenue, Suite 400, Orange, CA 92867
Orkin, Inc. (property owner), PO Box 2128, Santa Fe Springs, CA 90670

Completed by: Peter Schaefer Signed: *Peter Schaefer*

Filing: **Correspondence File**



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

Shell Oil Products US
Soil and Groundwater Focus Delivery Group
20945 S. Wilmington Avenue
Carson, CA 90810
Tel (425) 413 1164
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Email perry.pineda@shell.com
Internet <http://www.shell.com>

Re: 5755 Broadway
Oakland, California
SAP Code 135699
Incident No. 98995756
ACEH Case No. RO0000026

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 (425) 413-1164 with any questions or concerns.

Sincerely,
Shell Oil Products US

A handwritten signature in black ink, appearing to read "Perry Pineda", is located below the typed name.

Perry Pineda
Senior Environmental Program Manager



REVISED SUBSURFACE INVESTIGATION WORK PLAN

**SHELL-BRANDED SERVICE STATION
5755 BROADWAY
OAKLAND, CALIFORNIA**

**SAP CODE 135699
INCIDENT NO. 98995756
AGENCY NO. RO0000026**

MAY 31, 2013

REF. NO. 240483 (16)

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**Prepared by:
Conestoga-Rovers
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FIGURE 2 SITE PLAN

1.0 INTRODUCTION

Conestoga-Rovers & Associates (CRA) prepared this revised work plan on behalf of Equilon Enterprises LLC dba Shell Oil Products US (Shell) to assess potential for soil vapor intrusion at an adjacent residential property at 5606 Taft Avenue, Oakland as requested in Alameda County Environmental Health's (ACEH's) April 17, 2013 letter.

The subject site is a Shell-branded service station located on the northern corner of the Broadway and Taft Street intersection in a mixed residential and commercial area of Oakland, California (Figure 1). Current site features include three gasoline underground storage tanks, four dispenser islands, and a station building (Figure 2).

A summary of previous work performed at the site and other background information was presented in CRA's April 2, 2013 *Subsurface Investigation Work Plan* and is not repeated herein.

2.0 WORK TASKS

CRA proposes to install two soil vapor probes to assess soil vapor concentrations in the concrete walkway directly adjacent to the apartment building at 5606 Taft Avenue, Oakland located southwest of the service station. The proposed locations are shown on Figure 2. Specific tasks are described below.

2.1 PERMIT

CRA will obtain a drilling permit from Alameda County Public Works Agency (ACPWA).

2.2 HEALTH AND SAFETY PLAN (HASP)

CRA will prepare a HASP to protect site workers. The plan will be kept on site during field activities and will be reviewed and signed by each site worker.

2.3 UTILITY CLEARANCE

CRA will mark the proposed probe locations, and the locations will be cleared by Underground Service Alert and a private utility locating service prior to drilling.

2.4 SOIL VAPOR PROBE INSTALLATION

CRA proposes to install two soil vapor probes (VP-1 and VP-2) into the concrete walkway directly adjacent to the apartment building at 5606 Taft Avenue, Oakland located southwest of the service station (Figure 2). Both probes will be screened at approximately 3 feet below grade (fbg).

Assuming the absence of subsurface obstructions, CRA will advance the soil borings to 3 fbg using an air-knife rig. A CRA geologist will supervise the drilling and describe encountered soils using the Unified Soil Classification System and Munsell Soil Color Charts. Soil samples will be collected at a minimum of 1.5 and 3 fbg for soil description, chemical analyses, and screening in the field for organic vapors using a photo-ionization detector (PID). The soil samples for analysis will be collected using an Encore® soil sampler. Soil sample selection will be based on field observations (including PID readings and soil types). CRA will prepare a boring log for each vapor probe boring, and PID measurements will be recorded on the boring logs. Groundwater may be encountered in these borings; however, CRA will not collect grab groundwater samples as the area is adequately characterized by data from well S-2.

Soil samples designated for chemical analyses will be retained in Encore® samplers. Soil samples will be labeled, entered onto a chain-of-custody record, and placed into a cooler with ice for transport to a State of California certified laboratory for analyses. CRA will request a standard 2-week turn around time for laboratory results.

After the borings are advanced, fixed vapor-sampling points will be installed in each boring using ¼-inch-diameter Teflon® tubing. Each point will use a 1-inch screen interval attached to the Teflon® tubing. To ensure the tubing does not curl or kink during installation, CRA will first straighten out each length of tubing prior to installation, and then use a small-diameter PVC guide pipe to hold the tubing in place within the boring while packing the annulus with sand. A clean, fine-grained silica sand filter pack will be installed approximately 3 inches below and above the screened interval, and the guide pipe will be lifted as the sand pack is installed to ensure the pack stabilizes the tubing within each boring. The annulus will then be sealed to the surface

using bentonite slurry, set atop a 2-inch base of bentonite pellets. Each soil vapor probe will be completed at the surface using a traffic-rated well box at grade.

CRA will perform this work under the supervision of a professional geologist or engineer.

2.5 SOIL VAPOR PROBE SAMPLING

At least 14 days following probe installation, CRA will collect soil vapor samples from each sampling point. Sampling is affected by rain. CRA's standard procedure is to allow 2 days or more after a heavy rain event prior to collecting soil vapor samples.

CRA will sample soil vapor probes VP-1 and VP-2 using a vacuum pump and Tedlar® bags. Prior to sampling, CRA will purge at least three tubing volumes of air from the probes using a vacuum pump. CRA will attach a sealed "lung sampler" containing a 1-liter Tedlar® bag to the probe and attach the vacuum pump 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, CRA will fill the bags no more than two-thirds full. Each sample will be labeled, entered onto a chain-of-custody, and placed into a protective box at room temperature for transport to a State of California-certified laboratory for analysis within 72 hours.

2.6 LEAK TESTING

To check the system for leaks, CRA will cover the soil gas probe surface casing and sampling equipment with a containment unit (or shroud). Prior to soil gas probe purging, CRA will introduce helium into the containment unit to obtain a minimum 50 percent (%) helium content level. CRA will confirm the helium content within the containment unit using a helium meter and will record the helium meter readings in our 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 soil vapor samples contain a helium content of greater than 10% of the source concentration (i.e., 10% of the helium content measured within the containment unit), the soil gas sample will be considered invalid.

2.7 CHEMICAL ANALYSES

Soil samples will be analyzed for total petroleum hydrocarbons as gasoline (TPHg), benzene, toluene, ethylbenzene, and total xylenes (BTEX), and methyl tertiary-butyl ether (MTBE) by EPA Method 8260B.

Vapor samples will be analyzed for TPHg, BTEX, MTBE, tertiary-butyl alcohol, and naphthalene by EPA Method 8260B; for oxygen plus argon, carbon dioxide, and methane by ASTM D Method 1946; and for helium by ASTM D Method 1946 (M).

2.8 REPORT PREPARATION

Following receipt of the analytical results from the laboratory, CRA will prepare a written report, which will include field procedures, tabulated analytical data, and analytical laboratory reports.

3.0 SCHEDULE

CRA will implement the soil vapor probe installations upon receiving ACEH's written approval of this work plan and the drilling permit from ACPWA.

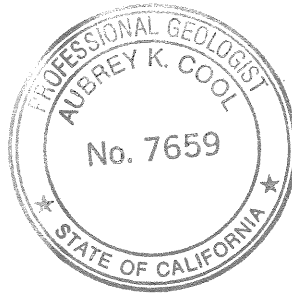
All of Which is Respectfully Submitted,
CONESTOGA-ROVERS & ASSOCIATES



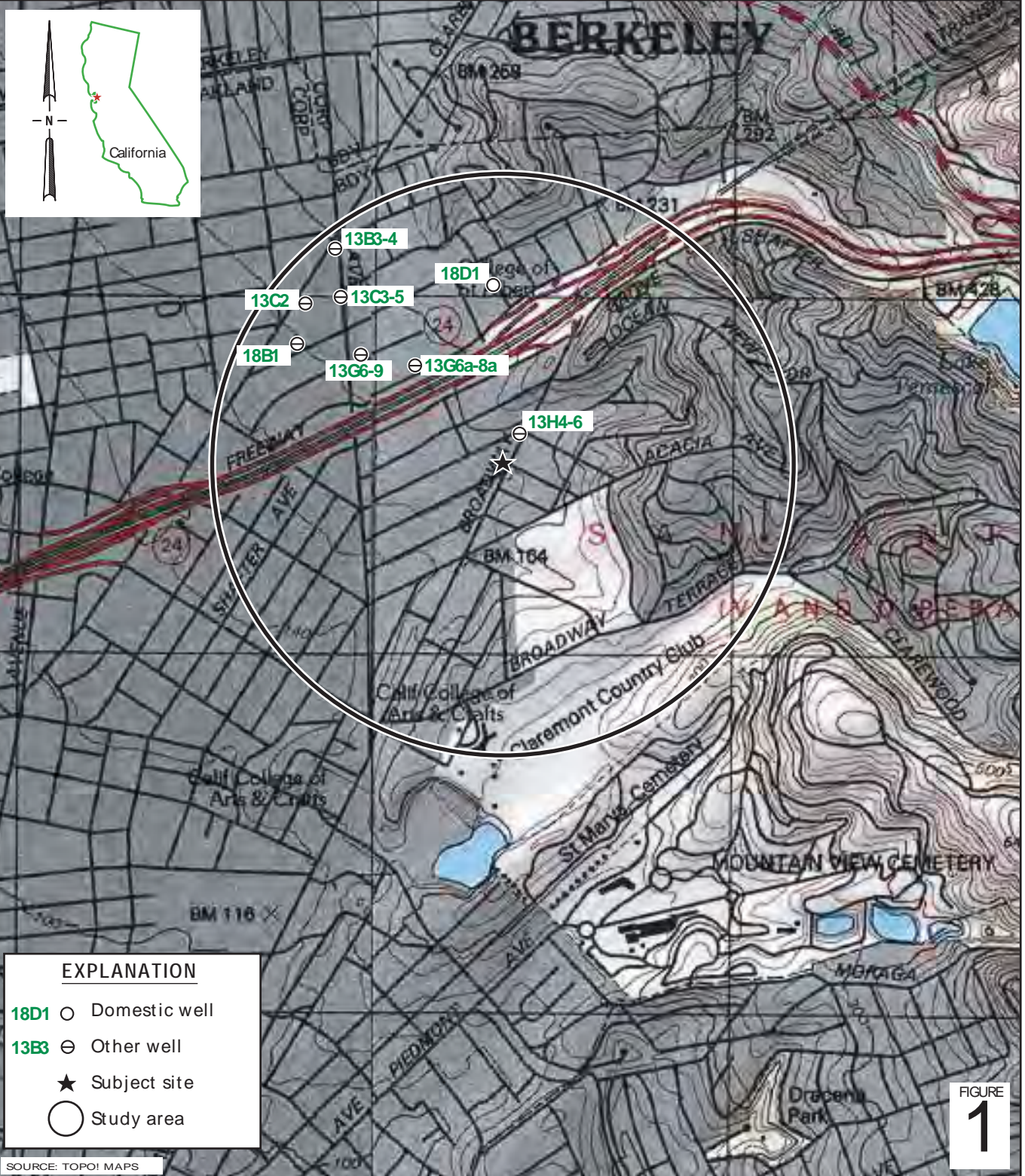
Peter Schaefer, CEG, CHG



Aubrey K. Cool, PG



FIGURES



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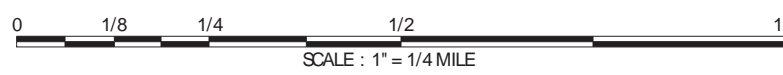


FIGURE 1

Shell-branded Service Station

5755 Broadway
Oakland, California

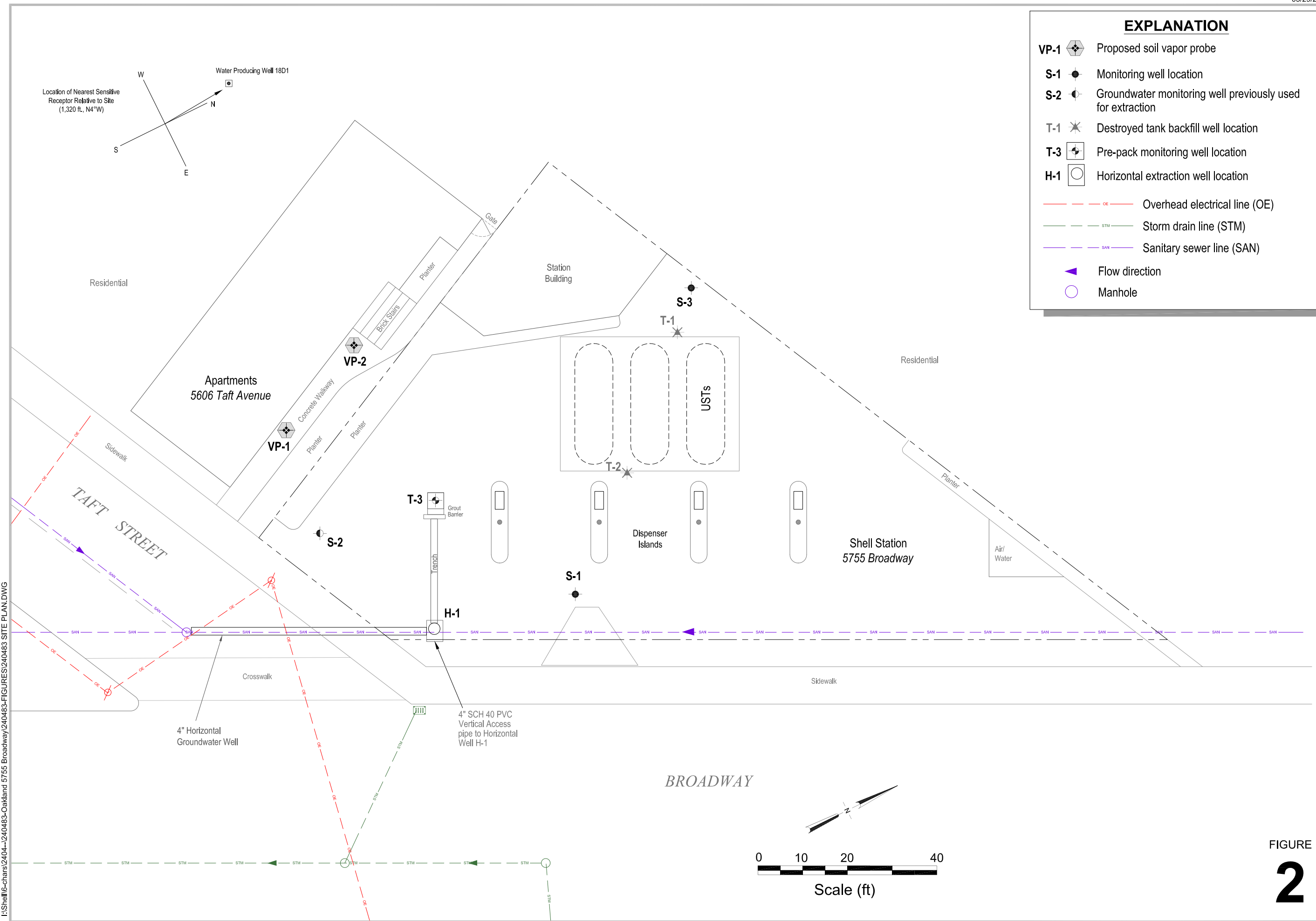


**CONESTOGA-ROVERS
& ASSOCIATES**

Vicinity Map

EXPLANATION

- VP-1 Proposed soil vapor probe
- S-1 Monitoring well location
- S-2 Groundwater monitoring well previously used for extraction
- T-1 Destroyed tank backfill well location
- T-3 Pre-pack monitoring well location
- H-1 Horizontal extraction well location
- Overhead electrical line (OE)
- Storm drain line (STM)
- Sanitary sewer line (SAN)
- Flow direction
- Manhole



I:\Shell\6-chars\2404-1\240483-Oakland 5755 Broadway\240483-FIGURES\240483 SITE PLAN.DWG



Shell-branded Service Station

5755 Broadway
Oakland, California

FIGURE
2