

ENVIRONMENTAL
PROTECTION

Treadwell & Rollo

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14 April 1999
Project No. 2543.01

Larry Seto
Hazardous Materials Specialist
Alameda County Department of Environmental Health
1131 Harbor Bay Parkway, 2nd Floor
Alameda, California 94507-6577

Subject: Workplan for
Source Investigation of Free Product
2885 Mandela Parkway Property
Oakland, California

Dear Mr. Seto:

This workplan to perform a subsurface investigation has been prepared by Treadwell & Rollo, Inc. on behalf of 2855 Mandela Property, the current owner of the subject property (see Figure 1). The primary objective of the planned work is to further investigate the source of free liquid-phase petroleum hydrocarbons (free product) under and upgradient of the site.

BACKGROUND

Previous subsurface investigations conducted at the site have detected the presence of free product and associated dissolved-phase constituents beneath the site and the adjacent street upgradient. Samples of soil and groundwater were generally analyzed for Total Petroleum Hydrocarbons (TPH) as gasoline and for benzene, toluene, ethylbenzene, and total xylenes (BTEX). The reported results indicate that a significant gasoline fuel release has occurred. In previous investigations, groundwater ranged from approximately 6 to 11 feet below ground surface (bgs). A one-time measurement of groundwater elevations from temporary piezometers widely placed across the site (including two which may have been placed near major sewers located under Wood Street) indicated a reported groundwater flow gradient of 0.02 feet per foot to the west-northwest.

Based on operational history and the results of previous investigations, potential sources are believed to include (see Figure 1):

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- the former underground storage tanks (USTs) removed from the site in 1991;
- an abandoned gasoline UST at 2607 Mandela Parkway located across Willow Street and immediately upgradient of the site; and
- other unidentified release sources, including possible additional USTs on the 2607 Mandela Parkway property, or other sources located farther upgradient.

The available data suggest that the source is likely located upgradient of the site.

PURPOSE AND SCOPE OF WORK

The overall objective of this investigation is to further evaluate the source of free product and associated dissolved phase constituents identified beneath and upgradient of the site. To meet this objective, we propose to:

- further evaluate the lateral extent of petroleum hydrocarbons in Willow Street between the site and the upgradient 2607 Mandela Parkway property;
- investigate the potential presence of petroleum hydrocarbons in groundwater immediately upgradient of the 2607 Mandela Parkway property;
- calculate groundwater flow gradient and direction in the immediate plume area; and
- chemically characterize ("fingerprint") the free product.

Specifically, we will perform the following tasks:

- contact Underground Services Alert (USA) to establish the approximate location of known subsurface utilities within the area to be explored, and retain a private utilities locating service to clear drilling locations;
- obtain appropriate drilling permits from Alameda County and the City of Oakland;
- prepare a Health and Safety Plan for field activities;
- ~~advance 11 soil borings penetrating groundwater at the approximate locations indicated on Figure 1 and as explained below;~~

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- log boreholes and classify soils following the Unified Soil Classification System (USCS) by an onsite geologist or engineer;
- collect free product samples from three boring locations near where free product has been previously detected, and from select other borings if free product is encountered, for laboratory analysis;
- collect groundwater grab samples for laboratory analysis from the remaining boring locations where free product is not detected, including collecting field quality assurance/quality control (QA/QC) samples;
- analyze free product samples for Total Volatile Petroleum Hydrocarbons (TVPH) and Total Extractable Petroleum Hydrocarbons (TEPH) by EPA Method 8015M (including chromatograms for fingerprinting), and methyl tert-butyl ether (MTBE) and BTEX by EPA Method 8020, and organic lead by the DHS LUFT Method. Select product samples will also be analyzed for specific gravity and dynamic viscosity;
- analyze groundwater samples for TPH as gasoline (TPH-g) by EPA Method 8015M (including chromatograms), and MTBE, and BTEX by EPA Method 8020;
- convert three of the borings into temporary groundwater piezometers (as indicated on Figure 1 and as explained below) and measure the stabilized depth to groundwater;
- measure the location and elevation of the three temporary piezometers by a licensed surveyor;
- abandon the temporary piezometers and close the borings according to permit requirements; and
- submit a technical report of the investigation results.

Proposed boring and piezometer locations are shown on Figure 1. The location rationale is presented below.

- To reliably obtain at least three product samples from representative areas of the known product plume for chemical characterization, three borings will be advanced adjacent to where free product has previously been detected. One of these borings will be located inside the site building and adjacent to previous boring SB-12, another will be in the

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yard near previous boring SB-3C, and the last will be located in the street and adjacent to previous boring SB-9.

- To confirm the relatively low results from previous borings SB-13, -14, and -15 located on Willow Street toward the abandoned gasoline UST under the sidewalk at 2607 Mandela, another boring will be placed in the sidewalk closer to the UST.
- To further delineate the extent of product under Willow Street and downgradient of the former yard at 2607 Mandela (the possible location of additional former USTs), two borings will be located in Willow Street at approximately 40-foot intervals to the north of previous boring SB-8. The northern building at 2607 Mandela was built over a former yard that may have contained additional USTs.
- To address the possibility that a source is located upgradient of 2607 Mandela, three borings will be located along Mandela Parkway on the upgradient side of 2607 Mandela.
- To address the possibility that a source is located to the southeast toward 26th and Willow Streets, a boring will be located in Willow Street approximately 70 feet to the south of previous boring SB-9.
- A boring will be installed in the 2855 Mandela parking lot near 26th Street only for installation of a piezometer (previous sampling results indicate that petroleum constituents are likely not present in that area) and two of the abovementioned borings will be converted to piezometers. To bound the investigation area, it is planned to convert the northernmost boring in Willow and the southernmost boring in Mandela Parkway into piezometers. The proposed piezometer and boring locations may be modified based on observations made in the field at the time of drilling.

PROCEDURES

Field Preparation Activities

In accordance with OSHA regulations, a site-specific Health and Safety Plan will be developed for the field investigations described herein. All field personnel will be required to implement the procedures presented in this document while conducting onsite field work.

Prior to commencing field activities, subsurface drilling permits will be obtained from the

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Alameda County Public Works Agency and traffic/obstruction permits will be obtained from the City of Oakland for drilling in the public right of way. In addition, Underground Service Alert (USA) will be contacted and a private utility locator will be retained to clear the proposed drilling locations of subsurface utilities.

Drilling, Sampling, and Piezometer Installation

Eleven borings will be advanced to approximately 15 feet bgs using a direct push drill rig to penetrate groundwater. Three of the borings will be converted to temporary piezometers. An onsite geologist or engineer will log the borings, classify the soils following the USCS, and note observations such as odors or discolored soil. It is not planned to acquire any soil samples for laboratory analysis. After completion of the boring to the planned depth, depth to groundwater and product thickness, if present, will be measured to the nearest 0.01-foot using an electronic sounding probe.

Groundwater samples, or free product if encountered, will be collected from each boring by temporarily inserting screened casing into the borehole and retrieving a sample with a disposable bailer. Following retrieval, the groundwater and free product samples will be placed in glass containers provided by the analytical laboratory, labeled, stored in the field in separate ice chests, and shipped under standard chain-of-custody to a state-certified analytical laboratory. Free product and groundwater samples will be stored in separate ice chests for shipment to the analytical laboratory.

Samplers will be washed in a dilute non-phosphate detergent solution, rinsed in fresh and then distilled water, and air dried. QA/QC field samples for groundwater sampling will include one blind groundwater sample duplicate and one trip blank for each batch of groundwater samples, and one equipment blank for each day of field sampling.

It is planned to install the piezometers at a depth of approximately 15 feet bgs, but the final depth will be determined in the field to ensure that groundwater is reached. Each piezometer will be constructed with 5 feet of 3/4-inch, Schedule 40 PVC screen with sandpack, and up to 10 feet of casing. The piezometers will be left open overnight to allow groundwater to equilibrate, after which the depth to groundwater and the thickness of product (if present) will be measured. The top of casing location and elevation of each piezometer will be surveyed by a licensed surveyor to at least 0.01-foot. Immediately after surveying and groundwater depth measurement, the casing and screen of the temporary piezometers will be removed.

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All borings (including the piezometer borings after removal of the casings) will be backfilled with volclay grout and completed at the surface with asphalt when necessary. Soil cuttings and equipment rinsate will be stored onsite in secure containers pending analytical results and appropriate final disposal.

Laboratory Analysis

Product samples will be analyzed for TVPH and TEPH by EPA Method 8015M (including chromatograms), MTBE and BTEX by EPA Method 8020, and organic lead by DHS-LUFT Method. Select product samples, particularly from piezometer borings, will also be analyzed for specific gravity for, among other uses, correction of measured groundwater levels. Select product samples will also be analyzed for dynamic viscosity for use in possible later transport evaluations. Groundwater grab samples will be analyzed for TPH-g by EPA method 8015M (including chromatograms) and MTBE and BTEX by EPA method 8020.

REPORTING

After completion of the site characterization activities described above, a detailed report will be written evaluating the results of the subsurface investigation. The report will include discussion and analysis of the samples obtained from the borings and piezometers, and conclusions and recommendations. Figures will be prepared summarizing the sampling results, and estimated direction and gradient of groundwater flow. The report will include tables summarizing the analytical results, monitoring well construction diagrams, boring logs, and laboratory reports and chromatograms.

SCHEDULE

Treadwell & Rollo is prepared to begin this investigation upon approval from Alameda County Department of Environmental Health. Upon procurement of all necessary permits, utility clearances, and drilling contractor mobilization, it is estimated that the field services described above will require approximately 2 days to perform. Receipt of laboratory data typically requires 2 weeks. The technical report will be submitted 4 weeks after receipt of the laboratory data.

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We trust that this workplan is acceptable to you. If you have any questions or comments please contact Faye Beverett of Page Street Properties at (415) 398-2266 or me at (925) 253-2683.

Sincerely,
TREADWELL & ROLLO, INC.

A handwritten signature in black ink, appearing to read "Michael P. McGuire", followed by a long horizontal flourish line extending to the right.

Michael P. McGuire, P.E.
Senior Engineer

Attachment: Figure 1