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Alameda County
Environmental Health

26 August 2009
Project No. 4954.01

Mr. Mark Detterman
Hazardous Materials Specialist
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502

Subject: Groundwater Investigation Work Plan
Fuel Leak Case No. RO000002621
Former Emeryville Industrial Court
5885 Hollis Street
Emeryville, California

Dear Mr. Detterman:

As a legally authorized representative of Wareham Property Group, and on behalf of Wareham Property Group, I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document titled *Groundwater Investigation Work Plan, 5885 Hollis Street, Emeryville, California*, are true and correct to the best of my knowledge.

Sincerely yours,



Geoffrey B. Sears
WAREHAM PROPERTY GROUP



26 August 2009
Project 4954.01

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

Subject: Groundwater Investigation Work Plan
Emeryville Industrial Court
5885 Hollis Street
Emeryville, California

Dear Mr Detterman:

Treadwell & Rollo, Inc. (Treadwell & Rollo), on behalf of Wareham Development, has prepared this *Groundwater Investigation Work Plan* (Work Plan) which presents the scope of work and methodology for conducting groundwater sampling at 5885 Hollis Street in Emeryville, California (Site). Figure 1 illustrates the Site location. The purpose of the investigation described in this Work Plan is to provide data for obtaining No Further Action regarding the presence of polyaromatic hydrocarbons (PAHs) and volatile organic compounds (VOCs) in groundwater at the Site. The scope includes: 1) assessing groundwater conditions downgradient of residual PAHs in soil and 2) assessing groundwater conditions downgradient of reported VOC storage areas at the Site.

This investigation was requested by Alameda County Environmental Health (ACEH) in a letter dated 18 June 2009. This scope was also reviewed and verbally approved by Mark Detterman and Barbara Jakub of ACEH during a Site meeting on 6 July 2009. The ACEH letter also requested characterization of a dissolved contaminant plume in the southwestern portion of the Site. Characterization in this area is expected to be performed in the fourth quarter of 2009 after review of data obtained by Conoco-Philips at the adjacent property

BACKGROUND

The Site comprises the northern three-quarters of the block bounded by 59th Street to the north, Hollis Street to the east, and Peladeau Street to the west. In the southern one-quarter of the block, the Site adjoins the Conoco-Philips station and some commercial storefronts. The Conoco-Philips station is bounded by Powell Street to the south.

The Site was operated by the Union Oil Company of California as an above-ground bulk oil facility until 1964. The Site was then operated as an industrial park with an underground fuel storage tank (UST) until it was redeveloped into the current office building. Numerous chemicals were used and stored on the Site during these previous operations. During redevelopment activities, soils at the Site were excavated to a depth of 12 to 15 feet below the ground surface (bgs).

The Conoco-Philips station is under investigation by the ACEH for potential releases to soil and groundwater. We understand that investigation field activities occurred in July 2009, and a report summarizing the results is expected in the third quarter of 2009.

Numerous environmental investigations and remedial activities have occurred at the Site since 1985 including Phase I environmental site assessments, soil over-excavation and removal, UST removal,

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several rounds of soil and groundwater investigation, and implementation of an approved soil management plan (SMP) during redevelopment activities. ACEH approved the completion of the SMP in a letter dated 22 January 2007

INVESTIGATION ACTIVITIES

This section presents a description of the field procedures to be used during the investigation. Selected subcontractors will assist with this work. A Treadwell & Rollo geologist or engineer will be present to coordinate on-site access, direct field work, record and interpret Site conditions, conduct health and safety monitoring of organic vapors, and provide technical assistance as required.

Pre-field Activities

Prior to conducting field work, soil boring permits will be obtained from the Alameda County Public Works Agency. An encroachment permit will be obtained from the City of Emeryville. Underground Service Alert will be called to mark the location of underground utilities in the vicinity of the borings a minimum of 48 hours prior to initiating field activities. A private utility locator will be retained to identify subsurface utilities at the Site.

Subsurface Sampling and Analysis

Treadwell & Rollo will advance two exploratory borings downgradient of the Site (within Peladeau Street), for the purpose of collecting downgradient groundwater samples. The locations of the groundwater sampling borings are illustrated on Figure 2.

The borings will be advanced to a depth of approximately 25 feet bgs using a CPT rig. The CPT rig will first advance a CPT piezo cone for classification of soils and to identify appropriate water bearing zones for sampling. Once a zone has been identified, the rig will be moved approximately 1 foot laterally to advance the sampler to the desired depth. Groundwater samples will be collected using a depth discrete hydropunch sampler with 3 feet of screen. A groundwater sample will be collected using a disposable bailer. Groundwater samples will be collected from two intervals at the estimated groundwater interface (7 to 10 feet bgs) and at the depth corresponding to the bottom of the excavation and location of the PAH detection in adjacent soil (14 to 17 feet bgs). Groundwater samples will be decanted into appropriately preserved containers and placed on ice for shipment to a California-certified analytical laboratory under appropriate chain-of-custody protocol. All sampling equipment will be thoroughly cleaned with a detergent solution and rinsed with distilled water before each sampling event to prevent cross-contamination. A tremie pipe will be used to grout each hole upon completion.

Groundwater samples will be analyzed for the following:

- Volatile organic compounds by EPA method 8260B
- Polyaromatic hydrocarbons by EPA method 8270.

Waste Containment

If necessary, waste generated by the sampling activities will temporarily be stored on-Site in sealed 5-gallon buckets for subsequent testing and proper disposal at an appropriate off-site disposal facility.

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Data Evaluation and Reporting

At the completion of the field work, the data will be reviewed and Site conditions will be summarized in a written report. The investigation results will be presented in the report using figures, tables, and CPT logs to describe Site conditions. Data summary tables will present detected concentrations of VOCs and PAHs in groundwater. Treadwell & Rollo will provide recommendations based on the appropriate commercial/industrial environmental screening levels where groundwater is not a source of drinking water. Based on the analytical results, Treadwell & Rollo will recommend closure of these Site-related issues or additional Site characterization.

SCHEDULE

It is anticipated that the investigation and laboratory analysis outlined in this Workplan will be completed within approximately 4 weeks of regulatory approval of the Workplan. The schedule assumes that the regulatory approvals, subcontractor availability, weather, and investigation results cause no delays to the schedule.

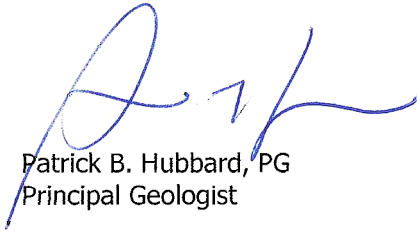
We look forward to continuing working with you on this project. If you have any questions or require additional information, please call.

Sincerely yours,
TREADWELL & ROLLO, INC


Matthew B. Hall, PE
Senior Project Engineer

49540101.OAK




Patrick B. Hubbard, PG
Principal Geologist

cc: Mr. Geoff Sears, Wareham Development Corporation, San Rafael CA

Attachments: Figures 1 and 2

FIGURES



Base map: The Thomas Guide
Alameda County
1999



No scale

5885 HOLLIS STREET
Emeryville, California

SITE LOCATION MAP

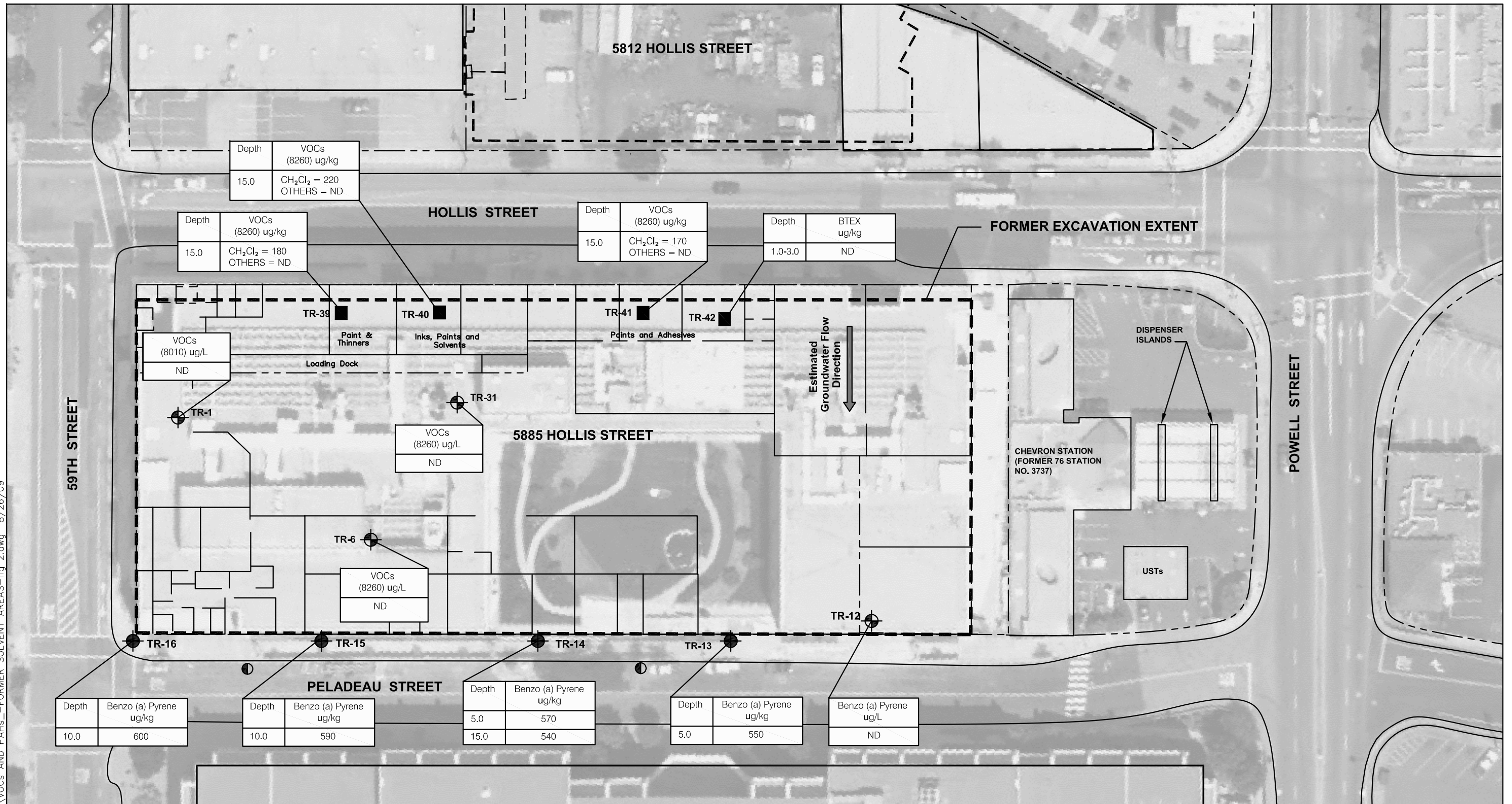
Treadwell&Rollo

Date 08/26/09

Project No. 4954.01

Figure 1

S:\Trgraphics-Oak\4900's\4954.01\VOCs AND PAHs - FORMER SOLVENT AREAS - fig 2.dwg 8/26/09



Depth	VOCs (8260) ug/kg
15.0	CH ₂ Cl ₂ = 220 OTHERS = ND

Depth	VOCs (8260) ug/kg
15.0	CH ₂ Cl ₂ = 180 OTHERS = ND

Depth	VOCs (8260) ug/kg
15.0	CH ₂ Cl ₂ = 170 OTHERS = ND

Depth	BTEX ug/kg
1.0-3.0	ND

VOCs (8010) ug/L
ND

VOCs (8260) ug/L
ND

VOCs (8260) ug/L
ND

Depth	Benzo (a) Pyrene ug/kg
10.0	600

Depth	Benzo (a) Pyrene ug/kg
10.0	590

Depth	Benzo (a) Pyrene ug/kg
5.0	570
15.0	540

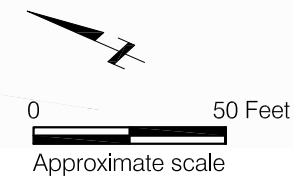
Depth	Benzo (a) Pyrene ug/kg
5.0	550

Benzo (a) Pyrene ug/L
ND

EXPLANATION

- Soil sample from area of requested VOC characterization
- Soil sample in area of residual benzo (a) pyrene in soil
- ⊕ Groundwater sample location
- Proposed groundwater sampling location

CH₂Cl₂ - Methylene chloride
ND - Not detected



Basemap: Google Earth 2009.

5812 HOLLIS STREET
Emeryville, California

VOCs AND PAHs IN SOIL AND GROUNDWATER
AND PROPOSED SAMPLE LOCATIONS

Date 08/26/09 | Project No. 4954.01 | Figure 2

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