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**By dehloptoxic at 1:11 pm, Feb 15, 2007**



January 17, 2007

Mr. Barney Chan  
Hazardous Materials Specialist  
ALAMEDA COUNTY HEALTH CARE SERVICES  
1131 Harbor Bay Parkway  
Alameda, CA 94502-6577

Clayton Project No. 33103-003365.09

**Subject: Workplan for Offsite Groundwater Investigation  
Former Dunne Quality Paints  
1007 41<sup>st</sup> Street  
Oakland, CA 94608**

Dear Mr. Chan:

On behalf of Green City Lofts (GCL) and McGrath Properties (McGrath), Clayton Group Services (Clayton), a *Bureau Veritas* company, is pleased to present this joint workplan to conduct an offsite groundwater investigation in association with the GCL property located at 1007 41<sup>st</sup> Street in Oakland, Alameda County, California (Figure 1 – “the Site”). This workplan has been prepared in response to the Alameda County Health Care Services (ACHCS) letters to GCL and McGrath dated October 12, 2006.

The purpose of this joint investigation is to delineate the extent of TPH-ms impacted groundwater within the Ennis property. Oak Walk is separately addressing issues raised in your letter to them, but Oak Walk has been asked by GCL and McGrath to cooperate in its own investigation with respect to certain aspects of the work proposed in this letter.

The site background and scope of work are described in the following sections of this workplan.

### **SITE BACKGROUND**

In February 2005, Clayton performed an investigation at the Ennis property to evaluate the extent of impacted soil and groundwater. The results of this work were presented in a report entitled *Investigation at Ennis Property, 1069-1073 41<sup>st</sup> Street, Emeryville, California*, dated April 19, 2005. The investigation was focused around an existing boring at the Ennis property where impacted subsurface conditions reportedly were observed. The scope of work for the investigation included the drilling of two (2) transects, which included a total of six (6) soil borings (B-1 through B-6). Each transect was oriented in a generalized north-south alignment. The easternmost transect, which included Borings B-1 through B-3, was positioned halfway between Adeline Street and the Ennis boring. The westernmost transect, which

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included Borings B-4 through B-6, was positioned adjacent to the Ennis boring. The borings were continuously sampled and drilled to depths between 14 and 16 feet below ground surface (bgs). Soil samples were obtained at approximate depths of 3.5, 7.5, 11.5, and 13.5 feet bgs for laboratory analyses. Temporary well casings were installed in each boring for the collection of grab groundwater samples. A total of twenty-one (21) soil samples and six (6) grab groundwater samples were submitted for laboratory analyses. The locations of the borings are shown on Figure 1.

The results of the investigation showed that the Ennis property is underlain by alluvial soils consisting of silts and clays to depths between 8 and 11 feet bgs, which were further underlain by silty and gravelly sands to the maximum depths explored in each boring with the exception of Boring B-6, where no coarse-grained soils were encountered. Groundwater was first encountered at depths between 11 and 15 feet bgs. Static water levels noted upon completion of drilling varied between 8 and 9.5 feet bgs with the exception of Boring B-5, which was noted to be approximately 15 feet bgs. Impacted soils were first encountered within the sand units at depths between 11 and 13 feet bgs. Concentrations of TPH-ms impacted soils ranged between 9.6 and 4,900 milligrams per kilogram (mg/kg). Lower and non-detect concentrations of TPH-ms generally were detected at the 12.5- to 13-foot depths in Borings B-4, B-5, and B-6. Groundwater analytical results reported concentrations of TPH-ms between 220 and 47,000 micrograms per liter ( $\mu\text{g/L}$ ). Soil analytical results are shown on Figure 2. Groundwater analytical results are shown on Figure 3.

The results of the previous off-site investigation showed that TPH-ms impacted soils were limited to depths between 11.5 and 13 feet bgs. The highest concentrations of TPH-ms in soil were detected at the 11.5-foot depth coinciding with the top of the alluvial sands (channel-type feature) encountered during drilling.<sup>1</sup> Below this depth, concentrations of TPH-ms in soil progressively decreased. Impacted soils were generally not detected above 11.5-foot depth. The TPH-ms most likely migrated through the alluvial sediments during periods of low groundwater elevations and subsequently became "trapped" within the upper section of the alluvial sands when groundwater levels rose.

In October 2003, monitoring wells CW-1 and CW-2 were installed by Clayton within a similar channel-like feature along Adeline Street. The locations of the existing monitoring wells are shown on Figure 1. During drilling, organic vapor meter (OVM) readings were measured at about 10 feet bgs, which roughly coincides with the interface between the alluvial sands and overlying clayey soils. Lower OVM readings were detected at 13 feet bgs. Soil samples obtained from this distinct and relatively thin layer showed TPH-ms concentrations up to 2,000 mg/kg. Wells CW-1 and CW-2 were installed within these channel-type features with the wells screened across the zone of the TPH-ms impacted soil. Groundwater samples were collected from these two wells during four (4) quarterly monitoring events. Analytical testing of the groundwater from these wells showed non detection of TPH-ms with the exception of the initial TPH-ms detection in Well CW-1 during the first quarterly event. This situation suggests that the TPH-ms is generally insoluble. We believe that TPH-ms detected in grab groundwater samples obtained

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<sup>1</sup> As you know, similar sand channel features have been documented upgradient of the Ennis property, at both the GCL and McGrath sites.



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from the borings advanced on the Ennis property may be biased because of TPH-ms impacted sediment falling into the grab groundwater samples. To determine if this is the case, we propose to install three properly-constructed groundwater monitoring wells to accurately investigate the potential presence of TPH-ms in the groundwater at the Ennis property.

### **SCOPE OF WORK**

The scope of work for this investigation will include the drilling of three (3) soil vapor sampling points (SVB-1 through SVB-3) and installation of three (3) groundwater monitoring wells (EPMW-1 through EPMW-3). The approximate locations of the proposed soil vapor points and groundwater monitoring wells are shown on Figure 4. Various tasks to be performed as part of this scope of work are described in the following sections of this workplan.

### **PROPERTY ACCESS AGREEMENT**

A property access agreement will need to be established between Mr. David Ennis and Clayton prior to starting work on the property.

### **PERMITTING**

Drilling permits for soil vapor points and monitoring wells will be obtained from Alameda County Public Works Agency (ACPWA). Field activities will begin upon confirmation from ACPWA that the necessary permits have been issued. In accordance with their permit requirements, ACPWA will inspect the grouting procedures for the monitoring wells.

### **UTILITY CLEARANCE**

The proposed investigation locations will be marked with white paint or staked prior to contacting Underground Services Alert (USA) and conducting a utility clearance. Upon contacting USA, local utility companies will be notified by USA regarding the upcoming subsurface investigation in order for their utility locations to be marked along the ground surface, as appropriate. After the utility locations are marked, an experienced underground utility locating company under subcontract to Clayton will perform a detailed utility clearance to confirm the presence of underground utilities around the proposed investigation locations. If underground utilities are found to be present directly underneath or in close proximity to the investigation locations, then the locations will be shifted, as necessary.

### **HEALTH AND SAFETY PLAN PREPARATION**

Clayton will prepare a site specific Health and Safety Plan (HASP) for the work proposed at the site in accordance with the requirements of the State of California General Industry Safety Order (GISO) 5192 and Title 29 of the Code of Federal Regulations, Section 1910.120 (29 CFR 1910.120). The HASP will describe in detail the work to be performed, safety precautions, emergency response procedures, nearest hospital information, and on-site personnel responsible for managing emergency situations. A copy of the HASP will be kept onsite during field activities.



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Prior to starting the field activities, specifically, the drilling program, Clayton will conduct "tailgate" safety meetings with field personnel and subcontractors on a daily basis, as necessary, which will include discussions of the various safety hazards and precautionary measures to be implemented during the course of the field activities. A copy of the HASP will be kept onsite during field activities.

### **SOIL VAPOR SAMPLING POINTS**

Upon clearance of utilities, Clayton will contract with a licensed C-57 drilling contractor to advance three borings to an approximate depth of five feet below ground surface (bgs) with either truck-mounted or limited access direct push drilling equipment. Soil vapor samples will be obtained from the borings in accordance with the guidance provided in the Regional Water Quality Control Board (RWQCB) Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater (RWQCB, 2005), California Department of Toxic Substances Control/Los Angeles RWQCB Advisory – Active Soil Gas Investigations (DTSC/LARWQCB, 2003), and DTSC's *Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air* (DTSC, 2005).

Upon collection, the soil vapor samples will be labeled with the boring number, sample date, project name, project number, sampler's initials, and other appropriate information to be provided to the laboratory. In accordance with the RWQCB/DTSC protocols, a duplicate sample will be collected for each day soil vapor sampling is conducted. Chain-of-custody (COC) documentation will be completed and will accompany the soil vapor samples to the laboratory.

Upon completion of soil vapor sampling, the borings will be backfilled using a cement-bentonite grout or neat cement grout to match existing grade, as appropriate. The borings will be backfilled in accordance with ACPWA requirements.

### **MONITORING WELL INSTALLATION**

The borings for the installation of monitoring wells will be drilled with a truck-mounted or limited-access drilling rig using direct push technology or hollow stem augers. The borings also will be utilized for lithologic logging and field screening purposes. The boring locations will be spatially positioned to evaluate the extent of TPH-ms-impacted groundwater and groundwater flow characteristics (flow direction and gradient).

Drilling will be performed by an experienced, C-57 licensed drilling company under subcontract to Clayton. Drilling operations will be supervised by an experienced field geologist under the oversight of a California-licensed Certified Engineering Geologist.

The borings will be advanced to a depth of approximately 20 feet bgs or to the bottom of the sand units. The borings will be continuously sampled throughout their entire depths for purposes of lithologic logging and field screening. Soil samples will be obtained using two different sampling methodologies, including the use of a core barrel sampler that will be continuously advanced during drilling or a split-spoon sampler that will be driven by a manually-controlled hammer. Soil samples from each sample or core interval will



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be retained for headspace testing. Recovered soil samples also will be examined for soil classification and described on detailed boring logs in general conformance with the Unified Soil Classification System. Additional lithologic descriptions and drilling information, such as descriptions of physical features, sample recovery, etc., also will be recorded on the boring logs.

Headspace tests will be performed with an air monitoring instrument, such as a photo-ionization detector (PID) or organic vapor meter (OVM), to detect the potential presence of VOCs in the soil samples. To initiate the headspace testing procedure, soil samples will be removed from the core barrel or sample tubes, placed into labeled plastic bags, and sealed for conducting the tests. After sufficient time has elapsed for vapor build-up inside the bags, the bags will be punctured and the probe tip of the air monitoring instrument will measure the headspace in the parts per million (ppm) range for total VOCs. The results of the headspace tests will be recorded on the boring logs.

Upon completion of drilling, monitoring wells will be constructed and installed with 2-inch diameter, polyvinyl chloride (PVC) casing connected with flush-threaded joints. The well screen generally will extend across the vertical extent of the sand units (water-bearing zone) and will consist of 0.010-inch slots. The well screen also will extend above the static groundwater levels. Annular spaces around the well screen will be packed with pre-washed sand filter pack material. The top of the sand filter pack will be placed at approximately two feet above the top of the well screen. Above the filter pack, a two-foot-thick bentonite seal consisting of either 0.25- or 0.50-inch long bentonite pellets or chips will be placed. The bentonite seal will be hydrated prior to pouring a grout seal within the annular space. Upon hydration of the bentonite seal, the annulus above the bentonite seal will be grouted to slightly below grade with a cement-bentonite or a neat cement grout.

Upon well installation, a small V-notch will be cut into the north side of each casing to serve as a common reference point for future groundwater level measurements. An expandable locking cap will be placed on top of each well casing. The monitoring wells will be completed below grade each having a flush-mounted, traffic-rated Christy box.

Before installing the Christy boxes, a larger cylindrical-shaped hole will be excavated around the well casing for installation of the box and surface seal completion. The top of the box will be positioned either flush or slightly above the ground surface. After the installation of the box, a surface seal consisting of concrete will be poured into the excavated area around the box. The concrete seal will be sloped downward from the edge of the box to the ground surface to direct surface water away and to minimize leakage around the well casing.

Monitoring well construction will be performed in accordance with ACPWA permitting requirements. Well installation and grouting procedures will be inspected by ACPWA in accordance with their permit requirements, as needed.

## **WELL DEVELOPMENT**

Upon completion of the well installation, the monitoring wells will be developed using conventional well development procedures. The monitoring wells will be developed to remove fine-grained materials inside the



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filter pack and well casing, to stabilize the filter pack around the well screen, and to produce representative groundwater samples. Groundwater turbidity will be monitored during well development, as appropriate.

The monitoring wells will be developed using surging/bailing methods. Fine-grained materials entering the well casing will be removed using a wireline steel bailer or other appropriate devices. Well development will take place after the well seal has bonded to the well casing. Well development will continue until the wells are free of fine-grained materials, as appropriate. Well development logs also will be prepared.

### **WELLHEAD SURVEYING**

Wellhead elevations (i.e., top of PVC well casings, Christy box rims, and ground surface elevations) and their respective locations will be surveyed by a licensed land surveyor. The tops of the PVC well casings will be identified with a common reference point consisting of a small V-notch cut into the top of the north side of each PVC casing. The wells will be surveyed relative to a nearby benchmark and/or a USGS benchmark having a vertical datum point referenced to Mean Sea Level (MSL). Planar coordinates (including latitude and longitude and northing-easting coordinates) for the monitoring wells will be generated to establish accurate horizontal control and will utilize the California State Plan (California Coordinate Grid System).

### **GROUNDWATER MONITORING AND SAMPLING**

Upon completion of well development, the monitoring wells will be purged and sampled to assess the presence of TPH-ms in groundwater. At least 24 hours will be allowed between well development and groundwater sampling activities. Groundwater level measurements will also be obtained at each of the wells prior to purging and sampling activities. Groundwater purging, sampling, handling, and preservation protocols will be performed in accordance with groundwater sampling and analysis procedures described in this workplan.

#### **Groundwater Level Measurements**

Groundwater level measurements will be obtained in each well in order to calculate the groundwater elevations. These measurements will also be used to evaluate the hydrogeologic characteristics beneath the Site, such as the flow direction and gradient. Groundwater level measurements will be performed prior to well purging and sampling activities. Groundwater level measurements will be recorded in a field logbook or an appropriate field form. Groundwater level measurements will be obtained with an electronic water level sounder capable of obtaining measurements to nearest +/- 0.01 foot. All water level measurements will be referenced to the established reference point at the top of each wellhead.

#### **Groundwater Purging**

Well purge volume measurements will be calculated based upon the difference of measurements between the depth to water from the top of well casing and the well depth in each well. Based on the known diameter of the well casing, the volume of water within the well will be calculated using the formula,  $V = \pi r^2 L$ , where  $V$



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is the well volume in cubic feet or gallons,  $r$  is the radius of the inside of the well casing in feet, and  $L$  is the length of the standing water column in feet.

Groundwater purging will be performed to remove standing water from within each monitoring well casing and to allow fresh groundwater in the vicinity of the well screen area to enter into the well casing. The wells will be purged either with a submersible pump or a clean, stainless steel bailer. A minimum of three standing water volumes inside each well will be purged prior to sampling. Whenever possible, purge rates will not exceed the natural recharge rate for the well. Purge rates for each monitoring well will be established during purging activities. If using a submersible pump for purging activities, a graduated bucket and stop watch/timer will be used to estimate purging rates and to measure actual purge water quantities.

The wells will be purged until field parameters, such as pH, temperature, conductivity, and turbidity, have stabilized. Field parameter measurements will be recorded on groundwater sampling logs. The appearance of the purged water, such as color and odor, will also be noted on the groundwater sampling logs. The equipment used to measure field parameters will be calibrated and/or checked for proper calibration on a daily basis in accordance with equipment manufacturer specifications.

Each well will be purged in a manner to assure collection of representative groundwater samples. After purging has been completed, the wells will be allowed to recover adequately prior to sample collection. For wells that recover at moderate to rapid rates, the wells will be allowed to recover to at least 80% of the initial static water level before sampling. For slowly recovering wells, sampling will occur after the wells have recovered sufficiently to provide a water volume adequate for sample collection.

With the exception of wells being purged to dryness, each well will be sampled as soon as possible after purging is completed. Groundwater levels will also be measured after purging and prior to sampling at each well.

If the well is purged dry before the field parameters stabilize, a contingency sampling procedure will be implemented. Wells purged to dryness are considered to be those wells having less than 10% of the original volume of water remaining in the well casing after purging. Recharge rates in monitoring wells exhibiting dryness as a result of purging will be monitored with a water level sounder at a frequency dependent upon well recharge rate. If the recharge rate is very slow (less than 1 gallon per minute), groundwater sampling will take place as soon as feasible.

### **Groundwater Sampling**

Groundwater samples will be obtained using a submersible pump or portable, dedicated sample bailers. At each well, the groundwater sample will be poured into laboratory-prepared sample containers, and then appropriately sealed and labeled. Excess water generated during sampling will be transferred into 55-gallon waste drums.

Sample bottles will be labeled with the project name, project number, well number, time and date of sampling, sampler's initials, and type of analyses. Groundwater samples will be placed in an insulated pre-chilled



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cooler for transport to the analytical laboratory. Groundwater samples will be transported to the analytical laboratory using chain-of-custody (COC) procedures

During sampling activities, clean, nitrile gloves will be worn by field sampling personnel. Used nitrile gloves will be placed into waste barrels for future disposal. New nitrile gloves will be used for each successive well to be sampled.

### **Decontamination and Waste Containerization**

Drilling and sampling equipment will be steam cleaned and allowed to air dry prior to and after drilling the borings. Decontamination of the drilling and sampling equipment will take place within a self-contained unit provided by the drilling subcontractor.

Soil cuttings generated during drilling activities will be placed into Department of Transportation (DOT) approved 55-gallon waste drums. Water generated during equipment decontamination, well development and purging (prior to groundwater sampling) will be placed into the drums. Decontamination wastewater will also be pumped from the driller's self-contained decontamination unit into the 55-gallon waste barrels. Waste barrels containing the soil cuttings, decontamination wastewater, well development water, and purged water will be sealed and labeled, and then moved to a temporary centralized storage area at the Site. Disposable health and safety gear worn during field activities will be placed into separate 55-gallon waste drums.

Well purging equipment will be decontaminated prior to use at each monitoring well. Equipment for the monitoring of groundwater quality parameters will also be decontaminated, as applicable. Decontamination procedures during purging will take place at a pre-designated on-site location.

The waste drums will be sealed and labeled with identifying information, including the project name, project number, boring/well number(s), depth intervals (where applicable), date of generation, and matrix type (i.e., soil, groundwater). Soil and groundwater analytical results from the investigation will be used for characterizing the types of wastes for future disposal.

### **LABORATORY ANALYSES**

Groundwater samples obtained during the field activities will be performed by Curtis & Tompkins Ltd. of Berkeley, California. Soil vapor samples will be analyzed by a State of California-certified analytical laboratory. The soil vapor samples will be analyzed for VOCs using EPA Method TO-15 and the groundwater samples will be analyzed for TPH-ms using EPA 8015M. The samples will be analyzed over a normal turnaround time (between 5 and 10 working days).

### **REPORT PREPARATION**

Upon completion of the field activities and laboratory analyses, a written report will be prepared. The report will include descriptions of the pre-field and field activities, tabulated groundwater elevations and analytical results, as well as figures depicting the soil vapor and well locations, a groundwater elevation map, and concentration maps showing the distribution of soil vapor and impacted groundwater, if present.





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Appendices will include copies of the permits, boring logs, well construction details, wellhead survey results, well development logs, groundwater sampling logs, and certified analytical reports.

## SCHEDULE

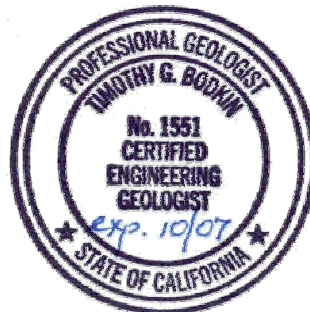
Clayton anticipates that the project duration will be approximately two months and will depend upon timing of the site access agreement and receipt of drilling permits. A tentative project schedule is as follows:

Pre-Field Activities - two weeks  
Field Activities - two weeks  
Laboratory Analyses - one to two weeks  
Report Preparation - two weeks

Clayton appreciates the opportunity to submit this workplan and looks forward to working with ACHCS on this project. If you have any questions or comments regarding the information provided herein, please do not hesitate to contact me at (925) 426-2626.

Sincerely,

Timothy G. Bodkin, C.E.G., R.E.A.  
Senior Project Manager  
Environmental Services



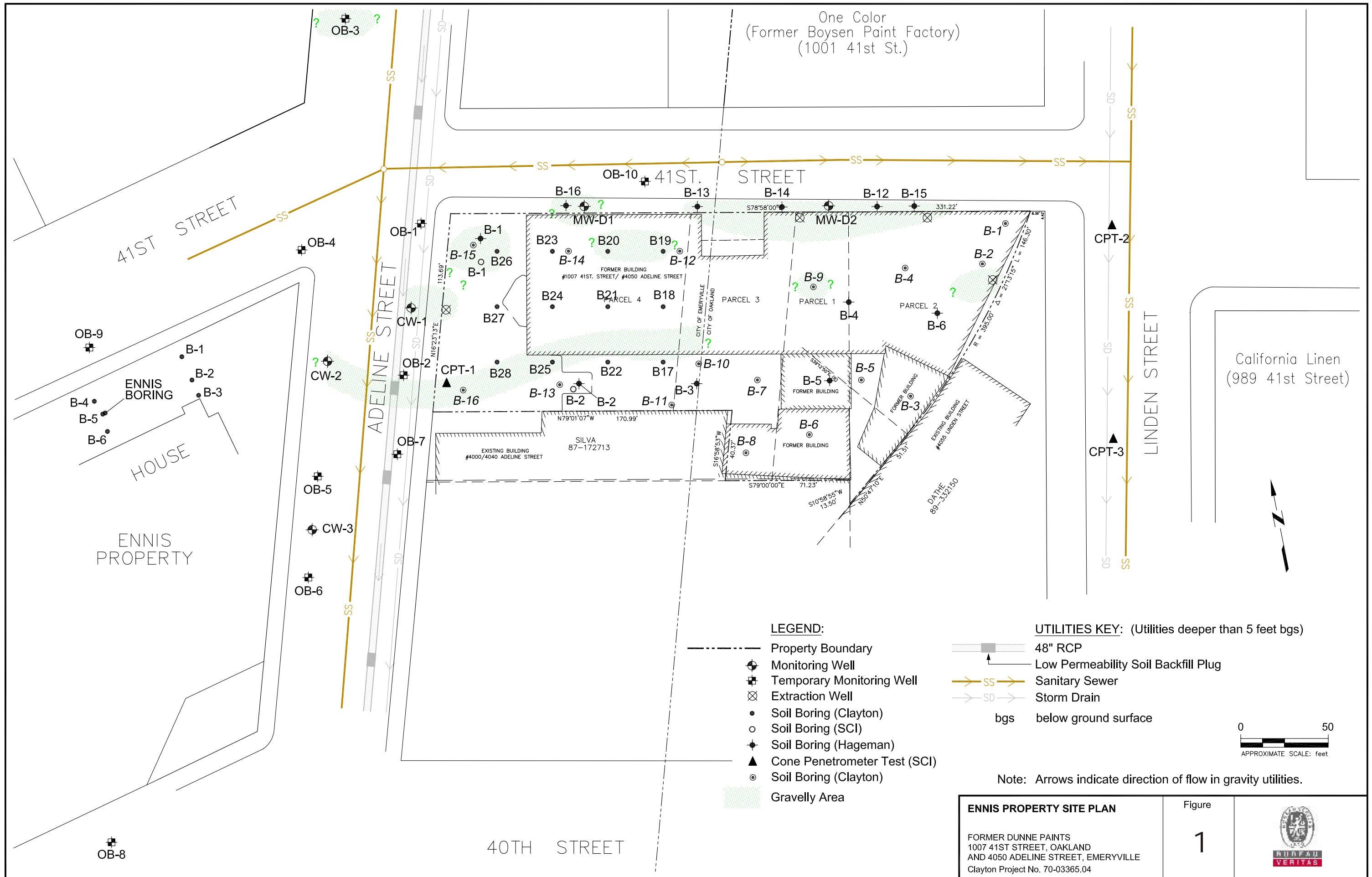
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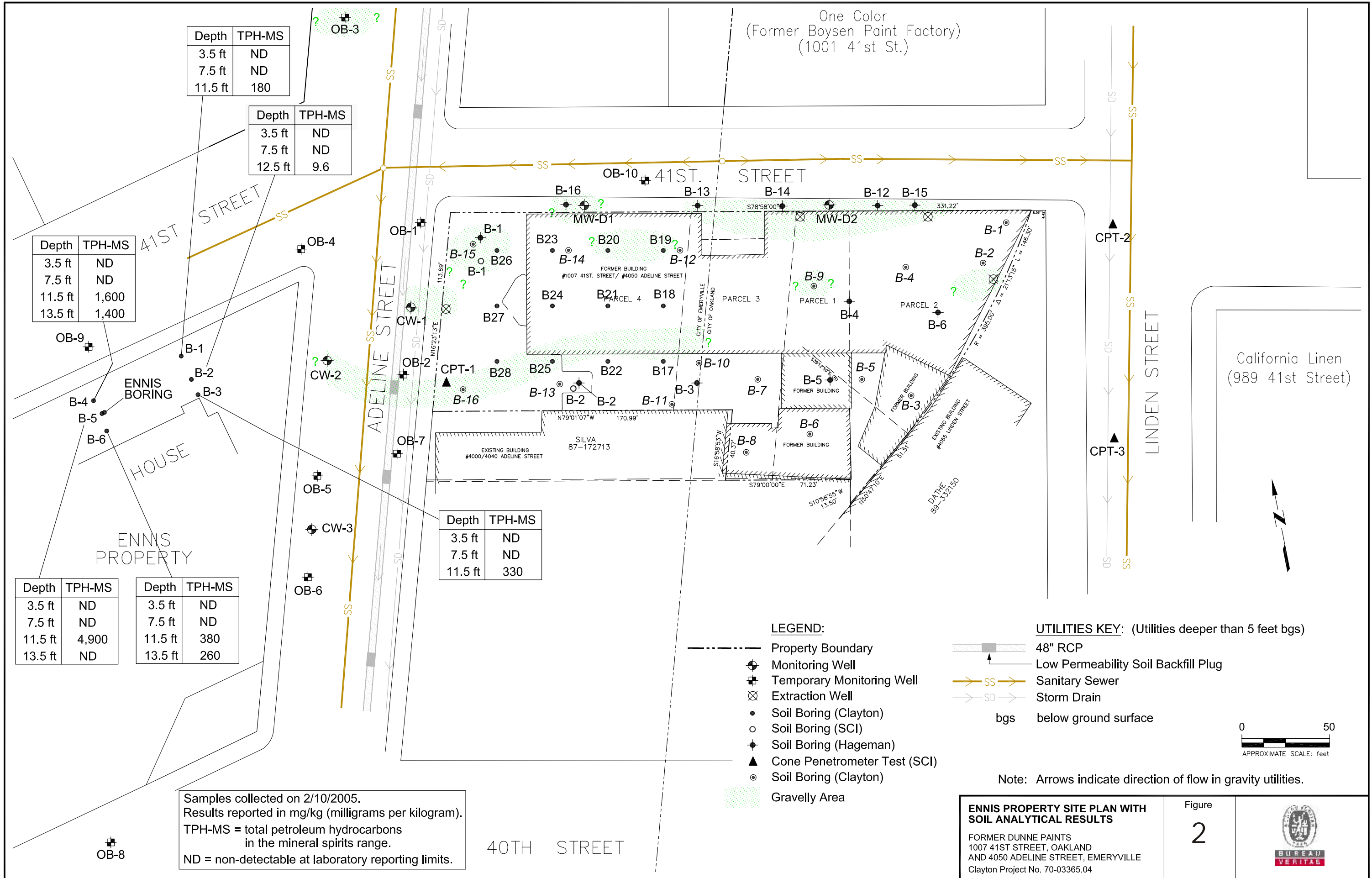
Enclosure

cc: Jon Rosso, Clayton Group Services  
Matt Oliver, Oliver & Associates  
Ami Ebright, Green City Lofts, LLC  
Jon Benjamin, Farella Braun & Martel LLP  
Deborah Castles, McGrath Properties  
John Cavanaugh, ERM



## FIGURES





Samples collected on 2/10/2005.  
 Results reported in mg/kg (milligrams per kilogram).  
 TPH-MS = total petroleum hydrocarbons  
 in the mineral spirits range.  
 ND = non-detectable at laboratory reporting limits.

Depth	TPH-MS
3.5 ft	ND
7.5 ft	ND
11.5 ft	1,600
13.5 ft	1,400

Depth	TPH-MS
3.5 ft	ND
7.5 ft	ND
11.5 ft	180

Depth	TPH-MS
3.5 ft	ND
7.5 ft	ND
12.5 ft	9.6

Depth	TPH-MS
3.5 ft	ND
7.5 ft	ND
11.5 ft	330

Depth	TPH-MS
3.5 ft	ND
7.5 ft	ND
11.5 ft	4,900
13.5 ft	ND

Depth	TPH-MS
3.5 ft	ND
7.5 ft	ND
11.5 ft	380
13.5 ft	260

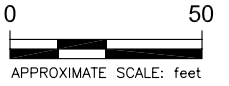
**LEGEND:**

- Property Boundary
- ⊕ Monitoring Well
- ⊕ Temporary Monitoring Well
- ⊗ Extraction Well
- Soil Boring (Clayton)
- Soil Boring (SCI)
- ◆ Soil Boring (Hageman)
- ▲ Cone Penetrometer Test (SCI)
- ⊙ Soil Boring (Clayton)
- ▨ Gravelly Area

**UTILITIES KEY:** (Utilities deeper than 5 feet bgs)

- 48" RCP
- Low Permeability Soil Backfill Plug
- SS → Sanitary Sewer
- SD → Storm Drain
- bgs below ground surface

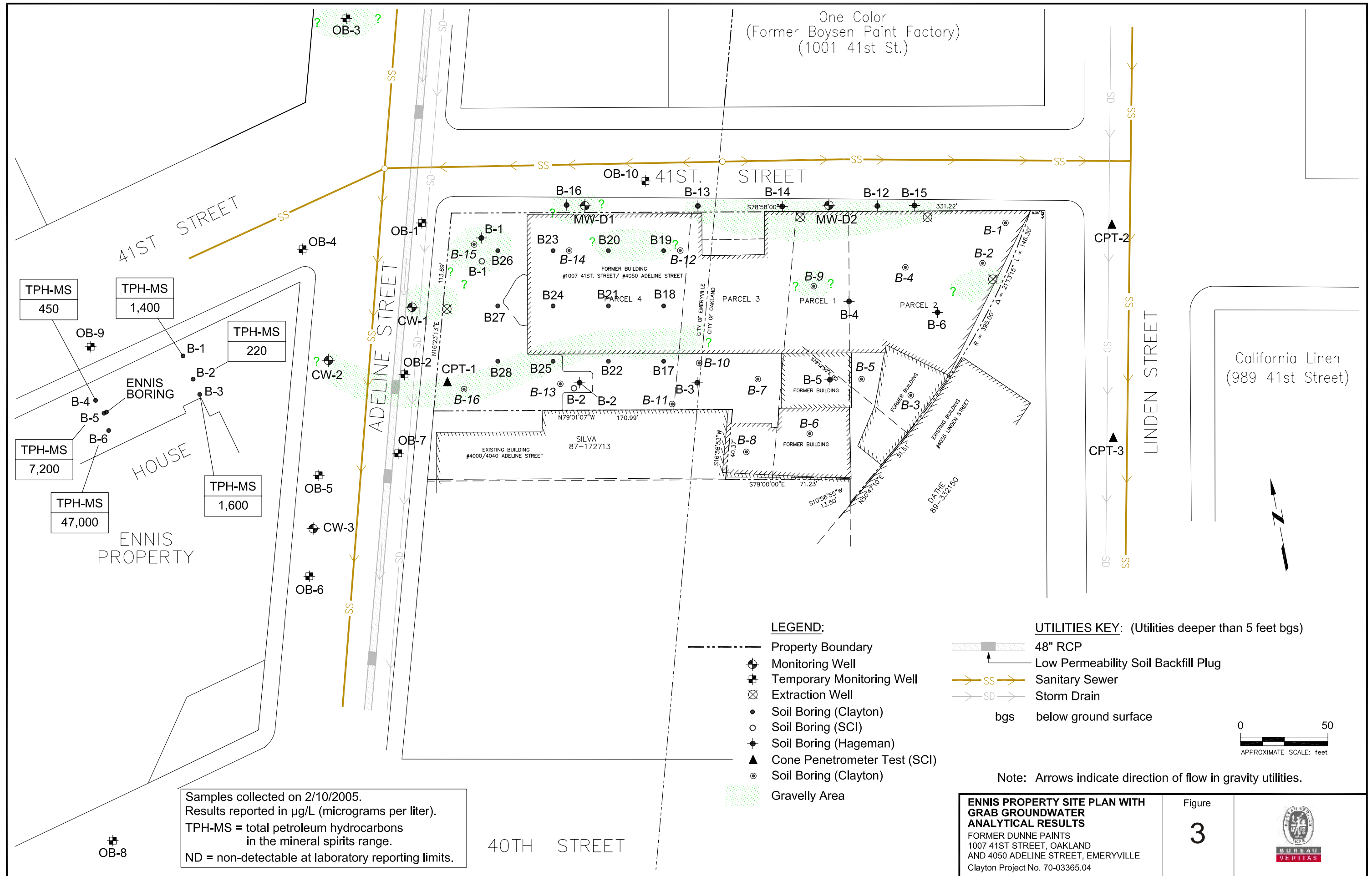
Note: Arrows indicate direction of flow in gravity utilities.



**ENNIS PROPERTY SITE PLAN WITH SOIL ANALYTICAL RESULTS**  
 FORMER DUNNE PAINTS  
 1007 41ST STREET, OAKLAND  
 AND 4050 ADELINE STREET, EMERYVILLE  
 Clayton Project No. 70-03365.04

Figure  
**2**





One Color  
(Former Boysen Paint Factory)  
(1001 41st St.)

California Linen  
(989 41st Street)

ENNIS PROPERTY

Samples collected on 2/10/2005.  
Results reported in µg/L (micrograms per liter).  
TPH-MS = total petroleum hydrocarbons  
in the mineral spirits range.  
ND = non-detectable at laboratory reporting limits.

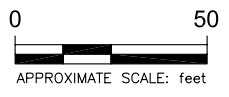
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**UTILITIES KEY: (Utilities deeper than 5 feet bgs)**

- ▬ 48" RCP
- ▬ Low Permeability Soil Backfill Plug
- SS → Sanitary Sewer
- SD → Storm Drain
- bgs below ground surface

Note: Arrows indicate direction of flow in gravity utilities.






**ENNIS PROPERTY SITE PLAN WITH  
GRAB GROUNDWATER  
ANALYTICAL RESULTS**  
FORMER DUNNE PAINTS  
1007 41ST STREET, OAKLAND  
AND 4050 ADELINE STREET, EMERYVILLE  
Clayton Project No. 70-03365.04

Figure  
**3**



40TH STREET



LEGEND	
	Proposed Groundwater Monitoring Locations by GCL/1001 42nd Street, LLC
	Proposed Groundwater Monitoring Locations by Oakwalk
	Soil/Gas Sampling Locations

SITE LOCATION MAP	
Proposed Off-Site Investigation Locations at Ennis Property	
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**FIGURE**  
**4**

