


CLEARWATER
G R O U P
Environmental Services

June 25, 2008

Mr. Jerry Wickham, PG, CEG, CHG
Alameda County Environmental Health Services
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

RECEIVED

9:24 am, Jul 17, 2008

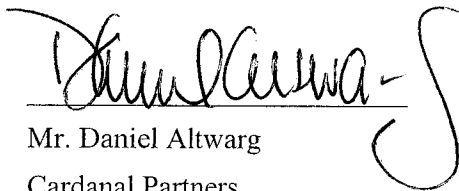
Alameda County
Environmental Health

RE: Cardanal Partners, LLC
632-638 2nd Street
(aka "626 2nd Street")
Oakland, California 94607
Clearwater Group Project # GB001H

Dear Mr. Wickham,

As the legally authorized representatives of the above-referenced project location, we have reviewed the *Soil and Groundwater Investigation Workplan Addendum* prepared by our consultant of record, Clearwater Group. We declare, under penalty of perjury, that the information and/or recommendations contained in this report are true and correct to the best of our knowledge.

Sincerely,


Mr. Daniel Altwarg
Cardanal Partners



June 25, 2008

Mr. Jerry Wickham, PG, CEG, CHG
Alameda County Environmental Health Services
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

RE: Workplan Addendum Letter

Cardanal Partners, LLC
632-638 2nd Street
(aka "626 2nd Street")
Oakland, California 94607
ACEH Case No. RO0002949 and Geotracker Global ID T0619758441
Clearwater Group Project # GB001H

Dear Mr. Wickham,

Clearwater Group (Clearwater) has received Alameda County Environmental Health (ACEH) Department's letter dated April 25, 2008. Since the submission of Clearwater's *Soil and Groundwater Investigation Workplan* dated March 7, 2008, Clearwater has received new information including significant utility conduits in the street and sidewalk of Second Street as well as 10 years of monitoring data from groundwater monitoring wells in close proximity (across the street and downgradient from the site). Based on this new information and the requests in ACEH Department's regulatory letter, Clearwater proposes to modify the Workplan in the following ways:

- Replace the passive soil gas survey points identified in the workplan with DPT soil sampling and grab groundwater sample acquisition. Samples will be analyzed for TPH-d by EPA method 8015 and TPH-g and BTEX by EPA method 8260B.



- Change the number of sample points to 15 at the locations shown in **Figure 1**. The sample points are placed on 40-foot centers extending from the three USTs to the PG&E MW-OAK6 monitoring well. The soil boring locations were chosen based on the underground utility locations (**Figure 2**).
- To facilitate vertical delineation of the contaminant plume, depth discrete groundwater samples will be collected at three boring locations, SB-7, SB-11, and SB-15. The groundwater samples will be taken at two depths, at the top of the saturated zone and a second at a field determined depth based on soil logs and PID readings. Clearwater's soil boring and groundwater sampling protocol is included as an attachment.
- For the soil borings in the immediate vicinity of the underground storage tanks (UST), SB-4, SB-5, SB-6, SB-7, and SB-8, soil samples will be collected every four feet and right above the water table; one groundwater sample will be collected at the water table, except for SB-7 in which 2 groundwater samples will be taken as explained in the previous paragraph.
- For soil borings SB-9 through SB-18, one sample will be taken at first encountered groundwater, and the acquisition of a soil sample will be at the field geologist's discretion based on screening levels obtained in the field by the PID.
- If substantial contamination is encountered in the borings surrounding the USTs, additional soil sampling at the other borings to determine the extent of soil contamination will be warranted.

Other aspects of the proposed work, including permitting, utility locates, waste disposal, and report preparation, would remain largely the same. Clearwater staff proposes no additional submission of a workplan, but rather a consideration of this letter and schedule to serve as an addendum to the original workplan. The proposed work schedule would be modified as shown below.

PROPOSED SCHEDULE

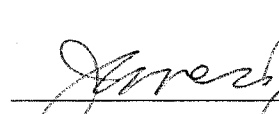
Task	Description	Start Date	Estimated End Date	Duration
1	Work plan addendum approval by Local Oversight Agency	6/30/08	7/30/08	30
2	Use comments to amend proposed work	7/30/08	8/13/08	14
3	Budget preparation and client approval	8/13/08	8/27/08	14
4	ACPWA Permit application, City encroachment and excavation acquisition submittal and approval. Engage driller, USA notification, HSP update	8/27/08	10/06/08	40
5	Soil borings @ 6' to 15' bgs after GPR screening	10/06/08	10/13/08	5
12	Analytical Received and Report Preparation	10/13/08	11/27/08	45

If you have any questions or require further information, please do not hesitate to email me at elervaag@clearwatergroup.com or call me at 510-307-9943 x227.

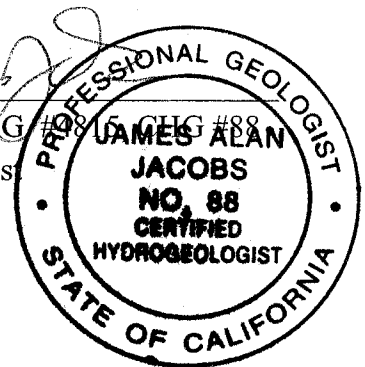
Sincerely,



Erik Lervaag
Project Manager



James A. Jacobs, P.G.
Chief Hydrogeologist



Attachments:

Figure 1

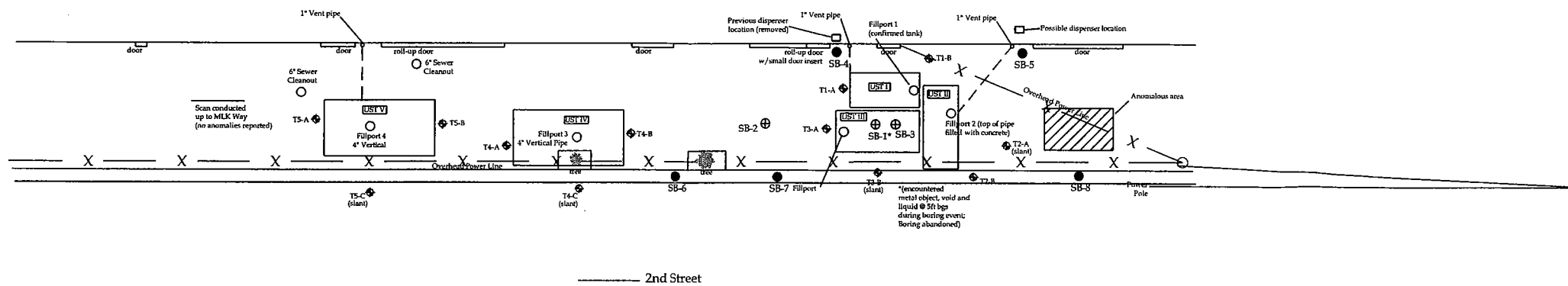
Figure 2

Clearwater Group Direct-Push Drilling Investigation Procedures

ATTACHMENTS

Martin Luther King Way

Markus Supply
Ace Hardware
Building



2nd Street

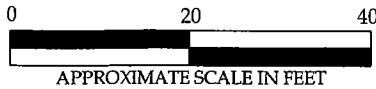
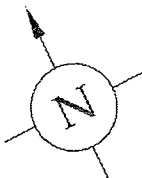
KEY:

- ⊕ Boring (locations approximate) for samples taken in 1996
- Fill port
- I Tank #
- Tank Outline
- ⊕ Soil and Groundwater Sampling Locations
- Proposed Soil Boring locations

TANK DIMENSIONS

- I - 10' x 5' (L x Dia)
- II - 12' x 6'
- III - 12' x 5'
- IV - 16' x 8'
- V - 16' x 8'

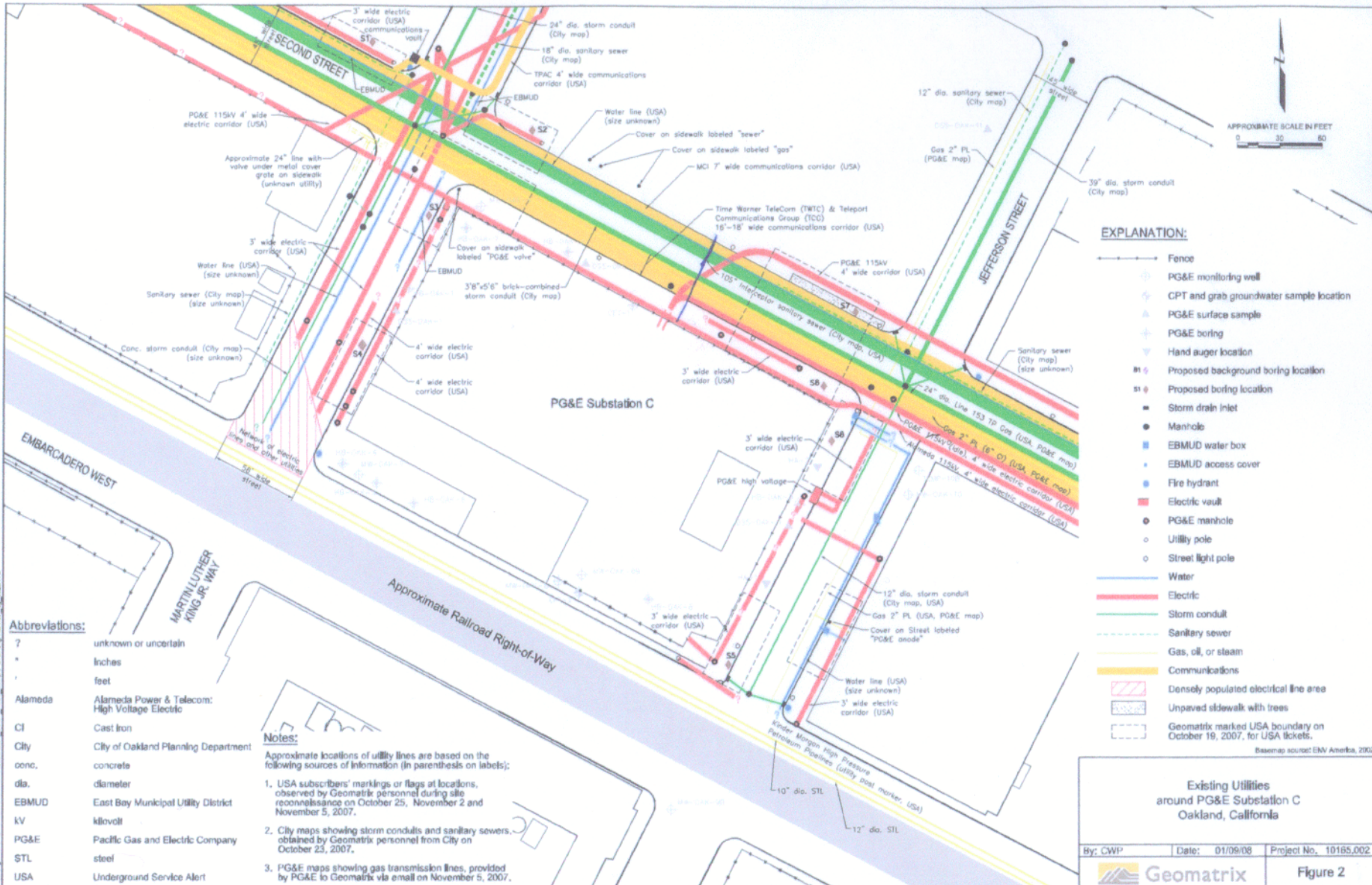
⊕ MW-OAK-6



CLEARWATER
GROUP
Environmental Services
229 Teaksbury Avenue, Point Richmond, California 94801
Phone (510-307-9943) Fax (510-232-2823)

Site Plan and Proposed Soil Borings

PROJECT NO. GB001	FIGURE: 1
DATE: 6/08	REVISION: 6/08
	DRAWN BY: P. Ilagan



APPROXIMATE SCALE IN FEET
0 30 60

- EXPLANATION:**
- Fence
 - ⊕ PG&E monitoring well
 - ⊕ CPT and grab groundwater sample location
 - ⊕ PG&E surface sample
 - ⊕ PG&E boring
 - ⊕ Hand auger location
 - ⊕ Proposed background boring location
 - ⊕ Proposed boring location
 - Storm drain inlet
 - Manhole
 - EBMUD water box
 - EBMUD access cover
 - Fire hydrant
 - Electric vault
 - PG&E manhole
 - Utility pole
 - Street light pole
 - Water
 - Electric
 - Storm conduit
 - Sanitary sewer
 - Gas, oil, or steam
 - Communications
 - ▨ Densely populated electrical line area
 - ▨ Unpaved sidewalk with trees
 - ▨ Geomatrix marked USA boundary on October 19, 2007, for USA tickets.

Abbreviations:

?	unknown or uncertain
"	Inches
'	feet
Alameda	Alameda Power & Telecom: High Voltage Electric
CI	Cast Iron
City	City of Oakland Planning Department
conc.	concrete
dia.	diameter
EBMUD	East Bay Municipal Utility District
kV	kilovolt
PG&E	Pacific Gas and Electric Company
STL	steel
USA	Underground Service Alert

Notes:

Approximate locations of utility lines are based on the following sources of information (in parenthesis in labels):

- USA subscribers' markings or flags at locations, observed by Geomatrix personnel during site reconnaissance on October 25, November 2 and November 5, 2007.
- City maps showing storm conduits and sanitary sewers, obtained by Geomatrix personnel from City on October 23, 2007.
- PG&E maps showing gas transmission lines, provided by PG&E to Geomatrix via email on November 5, 2007.

Existing Utilities
around PG&E Substation C
Oakland, California

By: CWP	Date: 01/09/08	Project No.: 10185.002
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Geomatrix Figure 2

Plot Date: 01/09/08 - 8:56am. Plotted by: amr/abw
Drawing File: S:\10185\10185\0185\002\Main.dwg
Drawing Name: 10185.dwg
Drawing Number: 10185.002

CLEARWATER GROUP

Direct-Push Drilling Investigation Procedures

The direct-push method of drilling soil borings has several advantages over hollow-stem auger drilling. The direct-push method produces no drill cuttings and is capable of 150 to 200 feet of soil boring or well installation work per day. Direct-push drilling can be used for soil gas surveys, soil sampling, groundwater sampling, and installation of small-diameter monitoring well and remediation system components such as air sparge points. The equipment required to perform direct-push work is varied, ranging from a roto-hammer and operator to a pickup truck-mounted rig capable of substantial static downward force combined with percussive force. This method allows subsurface investigation work to be performed in areas inaccessible to conventional drill rigs such as basements, beneath canopies, or below power lines. Direct-push equipment is ideal at sites with unconsolidated soil or overburden, and for sampling depths less than 30 feet. This method is not appropriate for boring through bedrock or gravelly soils.

Permitting and Site Preparation

Prior to direct-push drilling, Clearwater Group will obtain all necessary permits and locate all underground and above-ground utilities through Underground Service Alert and a thorough site inspection. All drilling equipment will be inspected daily and will be maintained in safe operating condition. All down-hole drilling equipment will be cleaned prior to arriving on-site. Working components of the rig near the borehole, as well as casing and sampling equipment, will be thoroughly decontaminated between each boring location by either steam cleaning or washing with an Alconox® solution. All drilling and sampling methods will be consistent with ASTM Method D-1452-80 and county, state, and federal regulations.

Boring Installation and Soil Sampling

Direct-push drilling uses a 1.5-inch outer barrel with an inner rod held in place during pushing. Soil samples are collected by penetrating to the desired depth, retracting the inner rod, and

attaching a soil sampler. The sampler is then thrust beyond the outer barrel into native soil. Soil samples are recovered in brass, stainless steel, or acetate sample tubes held inside the sampler.

Soil removed from the upper tube section is used for lithologic descriptions, according to the Unified Soil Classification System. If organic vapors will be analyzed in the field, a portion of each soil sample will be placed in a plastic zip-lock bag. The bag will be sealed and warmed for approximately 10 minutes to allow soil vapors to be released from the sample and diffused into the head space of the bag. The bag is then pierced with the probe of a calibrated organic vapor detector and the detector readings recorded with the lithologic descriptions on the soil boring log. Soil samples selected for laboratory analysis will be covered on both ends with Teflon™ tape and plastic end caps. The samples will then be labeled, recorded on a chain-of-custody document, stored on ice in a cooler, and transported to a state-certified analytical laboratory.

Temporary Well Installation and Groundwater Sampling

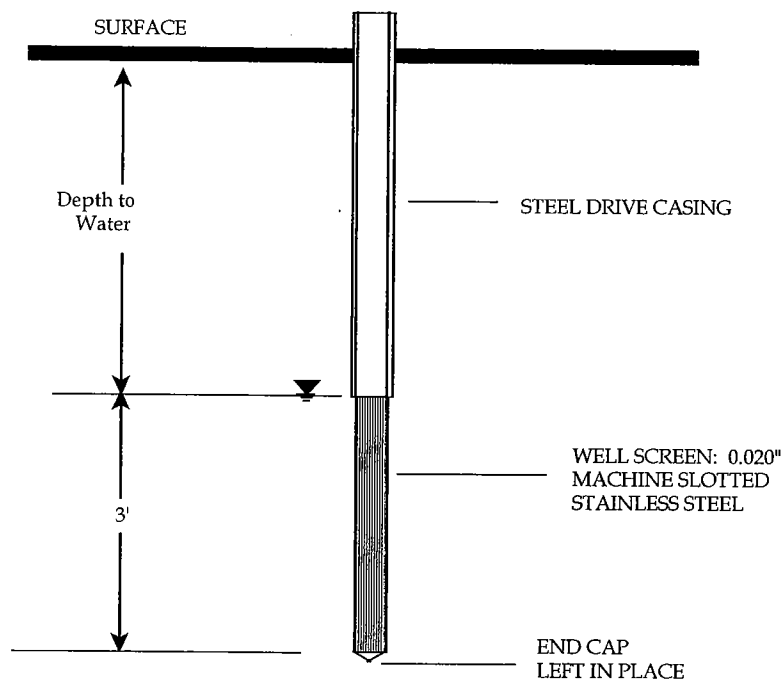


Figure 1

Grab Groundwater Sample Collection

Groundwater samples are collected by removing the inner rod and attaching a 4-foot stainless steel screen with a drive point at the end (**Figure 1**). The screen and rod are then inserted inside

the outer barrel and driven to the desired depth, where the outer rod is retracted to expose the screen. If enough water for sampling is not produced through the stainless well screen, a 1-inch PVC screen can be installed in the boring and the outer rod retracted to leave a temporary well point for collecting groundwater samples, water level, or other parameters.

Monitoring Well Installation and Development

Permanent small-diameter monitoring wells are installed by driving a 2-inch diameter outer barrel and inner rod as described above. Upon reaching the desired depth, the system is removed, and 1-inch outside diameter (OD) (1/2-inch inside diameter [ID]) pre-packed PVC piping is installed. The well plug is created using granular bentonite. The well seal is constructed of cement and sealed at the surface with a conventional “Christy® Box” or similar vault. Monitoring wells are developed by surging the well with a small-diameter bailer and removing approximately 10 casing volumes of water, until the water is clear.

Groundwater Sample Collection and Water Level Measurement from Monitoring Wells

Before groundwater is collected from the wells, the water levels are measured in all wells using an electronic water-level gauge. Monitoring wells are prepared for sampling by purging three or more well volumes of water. Water is removed using small-diameter bailers, a peristaltic pump, or by manually pumping using tubing with a check valve at the bottom. During removal of each well volume of water, the temperature, pH, and conductivity are measured and recorded on the field sampling form. Successive well volumes are removed until the parameters have stabilized or the well has gone dry. Prior to sampling, the well is allowed to recover to within 90% of the stabilized water levels. The groundwater samples¹ are collected using small-diameter bailers.

¹ Small-diameter wells often produce small sample quantities and are appropriate for analysis of volatile and aromatic compounds and dissolved metals analysis using VOA vials. Obtaining liter-size samples can be difficult and time consuming. Monitoring wells installed by the direct-push method are most effective at sites where the subsurface soils are more coarse than silt, gasoline components are the key contaminants of concern, and water levels are not more than 25 feet below ground surface.

The samples are decanted into laboratory-supplied containers, labeled, recorded on a chain-of-custody document, stored on ice in a cooler, and transported to a certified analytical laboratory for analysis.