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Alameda County
Environmental Health

ConocoPhillips
76 Broadway
Sacramento, California 95818

February 27, 2007

Mr. Jerry Wickham
Alameda County Health Agency
1131 Harbor Bay Parkway
Alameda, California 94502

Re: **Report Transmittal**
Work Plan – Site Investigation
76 Service Station #1156
4276 MacArthur Blvd
Oakland, CA

Dear Mr. Wickham:

I declare under penalty of perjury that to the best of my knowledge the information and/or recommendations contained in the attached report is/are true and correct.

If you have any questions or need additional information, please contact

Shelby S. Lathrop (Contractor)
ConocoPhillips
Risk Management & Remediation
76 Broadway
Sacramento, CA 95818
Phone: 916-558-7609
Fax: 916-558-7639

Sincerely,

Thomas Kosel
Risk Management & Remediation

Attachment

March 1, 2007

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

RE: Work Plan – Site Investigation
76 Station No. 1156
4276 MacArthur Boulevard
Oakland, California

DELTA

Dear Mr. Wickham:

On behalf of Conoco Phillips Company (COP), Delta Consultants (Delta), has prepared this work plan proposing the advancement of four soil borings and the installation of one monitoring well to delineate the horizontal and vertical extent of the petroleum hydrocarbon impact to the soil and the groundwater in the vicinity and down-gradient of the former waste-oil tank and the fuel dispensers along the south-western edge of the site. In addition, groundwater will be monitored in each of the four borings during advancement to determine if groundwater is under confined or semi-confined conditions at the site located at 4276 MacArthur Boulevard in Oakland California. The site location is shown on Figure 1.

Based on data collected during previous site investigations, the horizontal extent of the petroleum hydrocarbon impact to the soil has been defined down-gradient of the former underground storage tank (UST) basin and the fuel dispensers along the south-eastern edge of the site. However, the horizontal extent of the petroleum hydrocarbon impact to the soil down-gradient of the former waste-oil tank and the fuel dispensers located along the south-western edge of the site has not been defined. In addition the horizontal extent of the petroleum hydrocarbon impact to the groundwater down-gradient of monitoring well MW-5 has yet to be defined. Therefore, Delta is proposing the advancement of four soil borings to a maximum depth of approximately 30 feet below the ground surface (bgs) to determine the horizontal and vertical extent of the petroleum hydrocarbon impact to the soil down-gradient of the former waste-oil tank and the fuel dispensers located along the south-western edge of the site. In addition, one monitoring well will be installed to define the horizontal extent of the petroleum hydrocarbon impact to groundwater down-gradient of monitoring well MW-5. The proposed location of the four soil borings and the monitoring well are shown on Figure 2.

SITE DESCRIPTION

The site is located at the northeast corner of MacArthur Boulevard and High Street in Oakland, California. Two 12,000-gallon gasoline USTs are present in the southwestern portion of the site and two dispenser islands are present at the site, one to the northwest and one to the east of the USTs. A station building is present in the northern portion of the site. There are currently seven groundwater monitoring wells (MW-1 through MW-7) and one tank backfill well (TP-1) located at and in the vicinity of the site. Properties in the immediate vicinity of the site are utilized for commercial and residential purposes.

PREVIOUS ASSESSMENT

In 1997, Pacific Environmental Group Inc. (PEG) advanced 5 soil/gas probes in the vicinity of the USTs, dispenser islands, and product lines to depths ranging from 3 to 15 feet below the ground surface (bgs). Elevated soil vapor concentrations of total petroleum hydrocarbons as gasoline (TPH-G), benzene, and methyl tertiary butyl either (MTBE) were reported at concentrations up to 4,700, 70, and 140 micrograms per liter (µg/L), respectively.

In 1998, Tosco Marketing Company (Tosco, now ConocoPhillips) removed one 280-gallon used-oil UST, and removed and replaced two 10,000-gallon gasoline USTs, associated piping, and fuel dispensers. The new USTs were installed in a separate excavation. TPH as diesel (TPH-D), TPH-G, benzene, and total recoverable petroleum hydrocarbons (TRPH) were reported in the soil sample collected from the used-oil UST excavation at concentrations of 78,000, 130, 0.55, and 8,400 milligrams per kilogram (mg/kg), respectively. Following the over-excavation of approximately 4.6 tons of soil from the used-oil UST excavation, concentrations of TPH-D, TPH-G, benzene, and TRPH were reported in soil samples collected from the used-oil and UST excavation at concentrations up to 560, 81, 0.64, and 360 mg/kg, respectively. TPH-G and benzene were reported in the soil samples collected from the gasoline UST excavation, dispenser islands, and product lines at concentrations up to 1,200 and 1.6 mg/kg, respectively. Analytical data from a groundwater sample collected from the gasoline UST excavation indicated that TPH-G and MTBE were present at concentrations of 41,000 and 1,800 µg/L, respectively. Benzene was reported to be below the laboratories indicated reporting limit in the groundwater sample collected for analysis.

In 1999, Environmental Resolutions Inc. (ERI) conducted a soil and groundwater assessment which included the installation of four on-site groundwater monitoring wells (MW-1 through MW-4). Analytical data from the soil samples collected from the borings at a depth of 10.5 feet bgs indicated that TPH-G, benzene, and MTBE were present at concentrations up to 6,800, 2.6, and 0.71 mg/kg, respectively. The soil sample from MW-1, near the former used-oil UST, was also analyzed for TPH-D and TRPH. Analytical data from this soil sample indicated that TPH-D and TRPH were present at concentrations of 140 and 73 mg/kg, respectively. Analytical data from an additional soil sample collected at a depth of 20.5 feet bgs from the MW-4 boring indicated that TPH-G, benzene, and MTBE were not present above the laboratories indicated reporting limits. Quarterly groundwater monitoring and sampling activities commenced in July 1999 and are currently ongoing.

In July 2001, ERI installed a UST pit backfill well (TP-1) and initiated monthly purging of groundwater from the UST excavation. Bi-weekly groundwater purging was conducted at the site on wells TP-1 and MW-1 from July 2001 through December 2004.

In addition, during June 2004, the biweekly purging events included monitor well MW-7. Approximately 1,600 gallons of groundwater were removed from well MW-7 with a cumulative total of approximately 476,015 gallons removed from the site through December 2004.

In August 2001, ERI installed three off-site monitor wells (MW-5 though MW-7). Analytical data from the soil samples collected from these borings indicated that TPH-G and MTBE were not present above the laboratories indicated reporting limits. Analytical data indicated that benzene was present in one soil sample collected from MW-7 at a concentration of 0.18 mg/kg.

ATC Associates became the new lead consultant for the site in January 2005.

Delta Consultants became the new consultant for the site in September 2005.

SENSITIVE RECEPTORS

2001 – A GeoTracker database search was conducted which indicated that four public water supply wells owned by the East Bay Regional Park District (Park District) are present within one-half mile of the site. Representatives from the Park District reported having no knowledge or records of any wells located in this area and indicated that the wells may have belonged to the East Bay Municipal Utility District (EBMUD); however, EBMUD also reported to have no knowledge or records of any wells located in this area.

2001 – A Department of Water Resources (DWR) database search was conducted which indicated that four water supply wells belonging to Mills College are present within the one-half mile search area. A representative from Mills College indicated that all wells associated with Mills College had been destroyed and that Mills College was now connected to a municipal water supply. The DRW search also indicated that a well was located at 3397 Arkansas Street, approximately 880 feet outside of the search area. No other wells, surface water bodies, or potentially sensitive environmental habitats were identified during ERI's field receptor search.

2006 – A survey entailing a visit to the DWR office in Sacramento was conducted to examine well log records and to identify domestic wells within the survey area. The DWR survey provided two potential receptors within one mile of the site; one irrigation well located 0.9 miles northwest of the site and one domestic/irrigation well located 1.0 mile northeast of the site. Two additional potential receptors were identified although the specific addresses could not be located.

PROPOSED ACTIVITIES

Permitting, Utility Notification and Borehole Clearance

Before commencing field operations Delta will prepare a Health and Safety Plan in accordance with state and federal requirements for use during on-site assessment activities. In addition, drilling permits will be obtained for the soil borings and the groundwater monitoring well from the Alameda County Health Agency (ACHA). Prior to drilling, Underground Service Alert (USA) and a private utility locator will be notified as required to clear the proposed drilling locations for underground utilities.

Soil Borings and Grab Groundwater Samples

Delta proposes to advance four (4) exploratory borings, SB-1 through SB-4 using a truck mounted 8-inch hollow stem auger in the vicinity and down-gradient of the former waste-oil tank location and the fuel dispensers located along the south-western edge of the site. The soil borings will be advanced to a maximum depth of approximately 30 feet bgs or until auger refusal.

Soil samples will be logged using the Unified Soil Classification System (USCS) for lithologic interpretation and field screened for the presence of volatile organic compounds by headspace analysis using a pre-calibrated photo-ionization detector (PID). Soil samples will be collected for lithologic interpretation and field screening at 5 foot intervals. The soil sample with the highest PID reading from each boring as well as the soil sample collected from above first water will be submitted for analysis. If PID readings do not indicate the presence of volatile organic compounds, the soil sample collected from above first water will be submitted for analysis. A chain-of-custody will accompany the samples during transportation to the laboratory. The selected soil samples will be submitted to a California-certified laboratory for analyses of total purgeable petroleum hydrocarbons (TPPH), benzene, toluene, ethyl-benzene, and xylenes (BTEX), methyl tertiary butyl ether (MTBE), di-isopropyl ether (DIPE), ethyl tertiary butyl ether (ETBE), tertiary amyl methyl ether (TAME), tertiary butyl alcohol (TBA), 1,2-dichloroethane (1,2-DCA), ethanol, and ethylene di-bromide (EDB) - (8 oxygenates) by EPA Method 8260B. Soil samples collected from the borings in the vicinity of and down-gradient of the former waste-oil tank location will be additionally analyzed for total oil and grease (TOG) using Standard Methods 5520E, halogenated volatile organic compounds by EPA Method 8260, and semi-volatile organic compounds by EPA Method 8270.

Groundwater samples will be collected at first water and at depths of 20 and 30 feet bgs. Depth discrete grab groundwater samples will be obtained using a Hydropunch sampling tool. Non-disposable sampling equipment will be decontaminated between samples in a non-phosphate detergent and double rinsed with potable water.

Groundwater samples obtained from the borings will be decanted into properly labeled sample bottles and placed on ice as noted above pending transportation to a California-certified laboratory. A chain-of-custody will accompany the samples during transportation to the laboratory. The collected groundwater samples will be analyzed for TPPH, BTEX, MTBE, DIPE, ETBE, TAME, TBA, 1, 2-DCA, Ethanol, and EDB - (8 oxygenates) by EPA Method 8260B. Groundwater samples collected from the borings in the vicinity of and down-gradient of the former waste-oil tank location will be

additionally analyzed for total oil and grease (TOG) using Standard Methods 5520E, halogenated volatile organic compounds by EPA Method 8260, and semi-volatile organic compounds by EPA Method 8270.

Once the sampling has been completed, the borings will be backfilled to the surface with bentonite grout.

Down-hole drilling tools will be decontaminated between borings to avoid cross contamination. The decontamination process will consist of multiple wash and rinse cycles using potable water and a non-phosphate detergent.

Monitoring Well Installation

The boring for the proposed monitoring well will be drilled to a depth of approximately 15 feet bgs using a truck mounted 8-inch hollow stem auger. Soil samples will be logged using the USCS for lithologic interpretation and field screened for the presence of volatile organic compounds by headspace analysis using a pre-calibrated PID. Soil samples will be collected for lithologic interpretation and field screening at 5 foot intervals and from just above first water, anticipated to be at a depth of approximately 9 feet bgs. The soil sample exhibiting the highest PID reading from the boring will be submitted for analysis. If PID readings don't indicate the presence of volatile organic compounds, the soil sample collected from just above first encountered water will be submitted for analysis. A chain-of-custody will accompany the samples during transportation to the laboratory. The selected soil samples will be submitted to a California-certified laboratory for analyses of TPPH, BTEX, MTBE, DIPE, ETBE, TAME, TBA, 1,2-DCA, ethanol, and EDB - (8 oxygenates) by EPA Method 8260B.

The boring will be converted to a groundwater monitoring well by installing a 2-inch diameter schedule 40 PVC well casing with a screened interval based on the lithology encountered during well installation. The screen interval is anticipated to be between 5 and 15 feet bgs, to correspond with the depth at which first water is anticipated to be encountered. The perforation size in the screen interval will be 0.020-inch. A sand pack of RMC Lonestar Sand # 2/12 or equivalent will be installed into the annular space and extend approximately one (1) foot above the top of the screen interval.

A one (1) foot thick bentonite seal will be placed on top of the sand pack. The well will be surged prior to the placement of the bentonite seal to promote settling of the sand pack. The remainder of the annular space will be filled with neat cement and the well will be fitted with a locking cap and encased in a traffic-rated protective vault placed at existing ground level. Well construction details are presented on Figure 3.

Disposal of Drill Cuttings and Wastewater

Drill cuttings and decontamination water generated during the soil boring advancement and well installation activities will be placed into properly labeled 55-gallon Department of Transportation (DOT) approved steel drums and stored on the property. Samples of the drill cuttings and wastewater will be collected, properly labeled and placed on ice for submittal to a California-certified laboratory and analyzed for TPPH, BTEX, and MTBE by EPA Method 8260B and total lead by EPA Method 6010B. A chain-of-custody will accompany the samples during transportation to the laboratory. Subsequent to receiving the laboratory analytical results, the drummed drill cuttings and wastewater will be profiled, transported, and disposed of at a COP approved facility.

Reporting

Following completion of the field work and receipt of analytical results, a site investigation report will be prepared and submitted within 60 days. The report will present the details of the boring activities, including copies of boring permits, and details of disposal activities and copies of disposal documents. Required electronic submittals will be uploaded to the State Geotracker database.

DISSCUSSION

Based on Plate 2 contained in the report, *Underground Storage tank and Associated Piping and Dispenser Replacement*, prepared by ERI dated August 24, 1998 and the as-built for this site dated May 6, 1966 it appears that the fuel USTs were in the same location from 1966 until their removal in March of 1998. These documents also indicate that the fuel dispensers have remained in the same general location that they were in 1966.

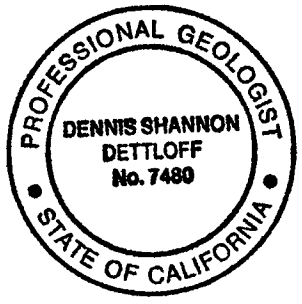
REMARKS/SIGNATURES

The recommendations contained in this report represent Delta's professional opinions based upon the currently available information and are arrived at in accordance with currently acceptable professional standards. This report is based upon a specific scope of work requested by the client. The Contract between Delta and its client outlines the scope of work, and only those tasks specifically authorized by that contract or outlined in this report will be performed. This report is intended only for the use of Delta's Client and anyone else specifically listed on this report. Delta will not and cannot be liable for unauthorized reliance by any other third party. Other than as contained in this paragraph, Delta makes no express or implied warranty as to the contents of this report.

If you have any questions regarding this project, please contact me at (916) 503-1261 or Ms. Shelby Lathrop of ConocoPhillips at 916-558-7609.

Sincerely,

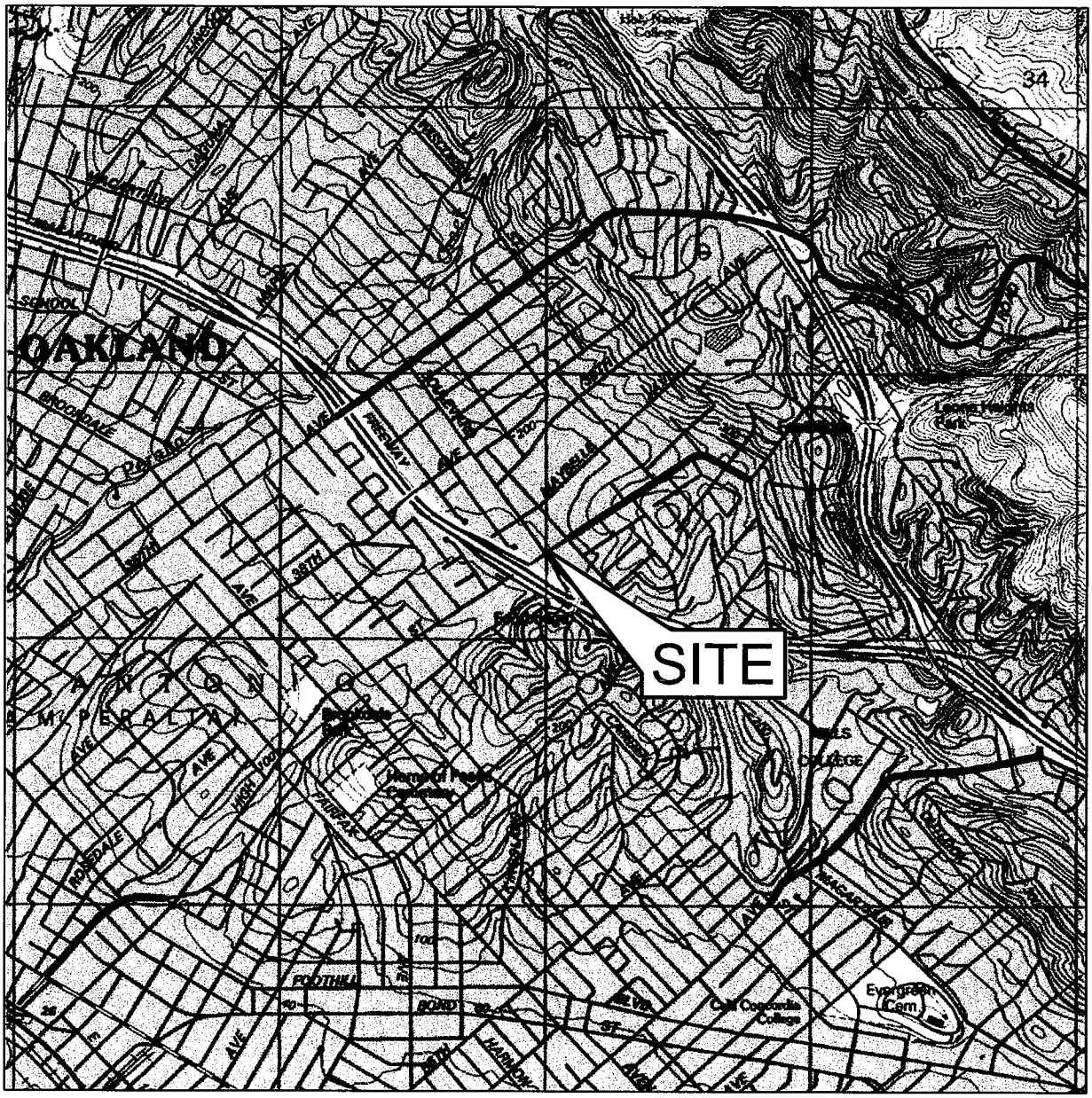
DELTA ENVIRONMENTAL CONSULTANTS, INC.



Dennis S. Dettloff, P.G.
Senior Project Manger
California Registered Professional Geologist No. 7480

Attachments:
Figure 1 – Site Location Map
Figure 2 – Site Plan
Figure 3 – Well Construction Diagram

cc: Ms. Shelby Lathrop, ConocoPhillips (electronic copy only)



North

SOURCE: USGS 7.5 MINUTE TOPOGRAPHIC MAP, OAKLAND EAST QUADRANGLE, 1967

FIGURE 1

SITE LOCATOR MAP

76 SERVICE STATION NO. 1156
4276 MACARTHUR BOULEVARD
OAKLAND, CALIFORNIA

PROJECT NO. C101-156	DRAWN BY JH 03/01/07
FILE NO. Site Locator	PREPARED BY MC
REVISION NO.	REVIEWED BY

DELTA

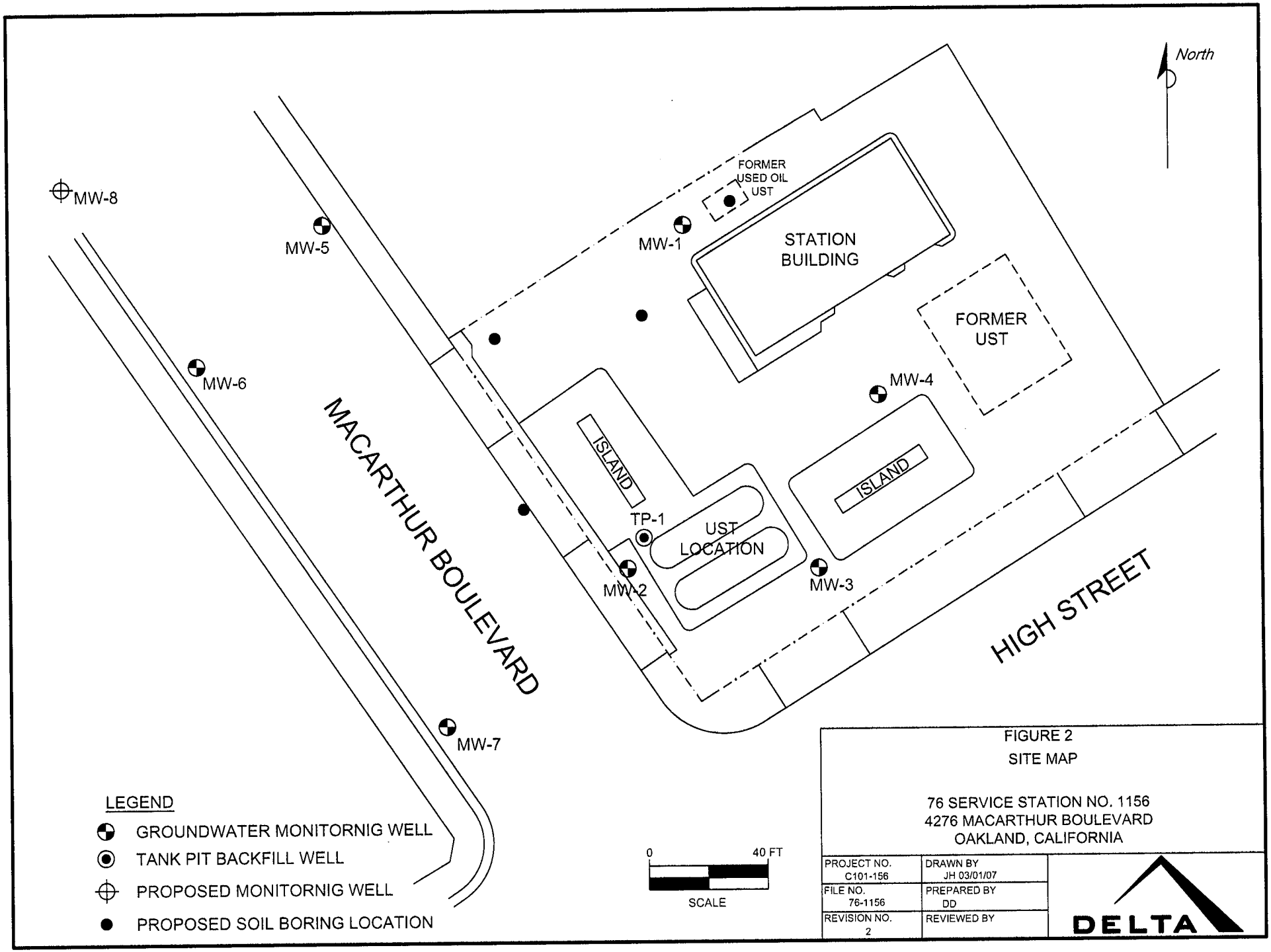


FIGURE 2
SITE MAP

76 SERVICE STATION NO. 1156
4276 MACARTHUR BOULEVARD
OAKLAND, CALIFORNIA

PROJECT NO. C101-156	DRAWN BY JH 03/01/07
FILE NO. 76-1156	PREPARED BY DD
REVISION NO. 2	REVIEWED BY

DELTA

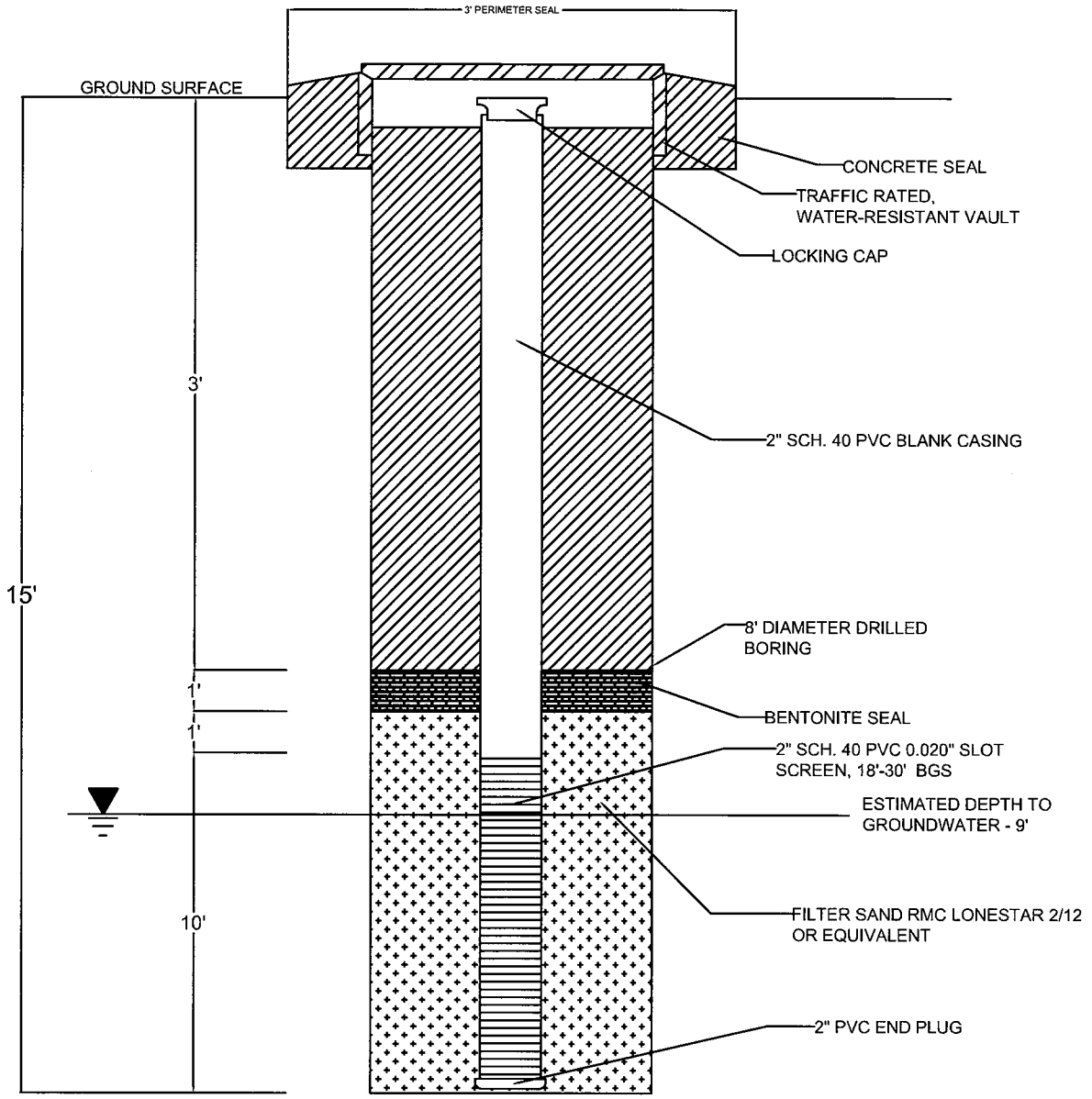


FIGURE 3

PROPOSED GROUNDWATER MONITORING WELL
CONSTRUCTION DETAIL

76 STATION NO. 1156
4276 MACARTHUR BOULEVARD
OAKLAND, CALIFORNIA

PROJECT NO. C101-156	DRAWN BY JH 03/01/07
FILE NO. 1156-WELLDETAIL	PREPARED BY DD
REVISION NO.	REVIEWED BY

DELTA