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Sacramento, CA 95818
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July 3, 2007

Mr. Jerry Wickham
Supervising Hazardous Materials Specialist
Alameda County Environmental Health Services
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

RE: Work Plan for Additional Ozone Injection Well Installation
Delta Project No. C104186171
Dated: June 26, 2007

76 Service Station no. 4186
1771 First Street
Livermore, California

Dear Mr. Wickham,

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

Please feel free to contact me if you have any questions or require additional information.

Respectfully,

Bill Borgh

Bill Borgh
Site Manager – Risk Management and Remediation

Attachment

July 12, 2007

Mr. Jerry Wickham
Alameda County Health Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Re: Work Plan for Additional Ozone Injection Well Installation
76 Service Station No. 4186
1771 First Street
Livermore, California
Delta Project No. C104186171

DELTA

Dear Mr. Wickham:

On behalf of ConocoPhillips Company (COP), Delta Environmental Consultants, Inc. (Delta) has prepared this *Work Plan for Additional Ozone Injection Well Installation* proposing the installation of seven additional ozone injection wells to address residual contamination at the above-referenced site.

SITE BACKGROUND AND PREVIOUS ENVIRONMENTAL WORK

The site is located on the southwest corner of the intersection of First Street and N Street (Figure 1), and is an active 76 service station. Two 10,000-gallon gasoline underground storage tanks (USTs), four dispenser islands, and a station building are present at the site (Figure 2). The site is located in a generally commercial area.

In June 1996, during dispenser and piping replacement activities, six soil samples were collected beneath the dispensers and product piping. Total petroleum hydrocarbons as gasoline (TPHg) and benzene, toluene, ethyl-benzene and total xylenes (BTEX) were not reported above the laboratories indicated reporting limits in any of the samples.

In September 1997, a soil gas survey was conducted at the site. Six soil gas probes were advanced and samples were collected at 3 or 15 feet below ground surface (bgs) in the vicinity of the USTs, dispenser islands, and product lines. TPHg was reported in the samples at concentrations ranging from 41 to 4,500 parts per billion by volume (ppbv), benzene was reported at concentrations up to 110 ppbv, and methyl tertiary butyl ether

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(MTBE) was reported at concentrations up to 8,000 ppbv. The highest concentrations were reported in the area of the USTs.

In June 1998, three groundwater monitoring wells (U-1 through U-3) were installed at the site to depths of 34 feet bgs. TPHg, benzene, and MTBE were not reported above the laboratories indicated reporting limits in soil samples collected from the well borings. The approximate well locations are presented on Figure 2.

A site conceptual model (SCM) was completed for the site in May 2000. The groundwater flow velocity was calculated to estimate plume travel time to the nearest down-gradient receptor. Groundwater velocity was calculated to be 46 feet per year. It was concluded that hydrocarbon impact to groundwater appears to fluctuate with the rise and fall of the groundwater surface beneath the site.

In February 2001, two additional monitoring wells (U-4 and U-5) were installed. The monitoring wells were installed to depths of 45 feet bgs (U-4) and 47 feet bgs (U-5). TPHg, BTEX, and MTBE were not reported above the laboratories indicated reporting limits in soil samples collected from the well borings. TPHg and benzene were not reported above the laboratories indicated reporting limits in the initial groundwater samples collected from monitoring wells U-4 and U-5; however, MTBE was reported at concentrations of 38.2 and 55.4 micrograms per liter (µg/L), respectively. The approximate well locations are presented on Figure 2.

In December 2001, two additional monitoring wells (U-6 and U-7) and eight ozone sparge wells (SP-1 through SP-4, SP-5/5S, SP-6S, SP-7S, and SP-8/8S) were installed at the site. The monitoring wells were installed to 45 feet bgs. The sparge points in wells SP-1 through SP-4 were installed to a depth of 45 feet bgs. The sparge points in wells SP-6S and SP-7S were installed to a shallower depth of 25 feet bgs. The remaining two sparge wells each contained dual-nested sparge points installed to 25 feet bgs (SP-5S and SP-8S) and 45 feet bgs (SP-5 and SP-8). An ozone microsparge system was then installed and began operation in December 2001. The system injected ozone into the 10 sparge points. The approximate well locations are presented on Figure 2.

In April 2006, seven borings (B-1 through B-7) were advanced at the site. Three boreholes were advanced at each boring location. The initial borehole was advanced to record a cone penetrometer (CPT) log of subsurface lithology. The second borehole was advanced for the purpose of collecting soil samples for observation and laboratory analysis, and to collect discrete groundwater samples at depths of approximately 38 feet to 44 feet bgs. The third borehole was advanced to collect a discrete groundwater sample at approximately 57 feet to 65 feet bgs. Three general stratigraphic zones were identified: an upper zone from 36 to 43 feet bgs, a middle clay zone from 43 to 55 feet bgs, and a lower zone from 55 to the maximum depth of 65.5 feet bgs explored. Soil samples from various depths were submitted for laboratory analysis. TPHg was reported in five upper zone, six clay zone, and three lower zone soil samples at concentrations up to 700 milligrams per kilogram (mg/kg). MTBE was reported in three upper zone, three clay zone, and two lower zone soil samples at concentrations up to 0.29 milligrams per kilogram (mg/kg). Benzene was reported in three clay zone soil samples at concentrations up to 1.3 milligrams per kilogram (mg/kg). TPHg was reported in all of the 14 groundwater samples at concentrations up to 26,000 µg/L. Benzene was reported in five upper zone, and six lower zone groundwater samples at

concentrations up to 510 µg/L. MTBE was reported in four upper zone, and six lower zone groundwater samples at concentrations up to 1,100 µg/L.

In March 2007, two additional on-site borings (B-8 and B-9) and one additional off-site boring (B-10) were drilled using a CPT rig. The borings were advanced to further evaluate the vertical extent of impacted groundwater to the base of the lowermost sand and gravel unit, to evaluate groundwater quality in the lowermost sand and gravel unit down-gradient of the site, and to evaluate the presence of a clay layer underlying the lowermost coarse-grained soils which may represent a regional aquitard. Four soil samples were collected for laboratory analysis from off-site boring B-10. MTBE was reported in two of the samples at concentrations up to 0.016 mg/kg; TPHg and benzene were not reported above the laboratories indicated reporting limits in any of the soil samples collected for analysis. TPHg (200 µg/L), benzene (0.94 µg/L), and MTBE (7.1 µg/L) were reported in the groundwater sample collected at 79 to 83 feet bgs from boring B-8. TPHg, BTEX, and fuel oxygenates were not reported above the laboratories indicated reporting limits in the groundwater sample collected at 78 to 88 feet bgs from boring B-9. A low concentration of MTBE (0.73 µg/L) was reported in the groundwater sample collected at 66 to 70 feet bgs from boring B-10, and a low concentration of toluene (1.4 µg/L) was reported in the groundwater sample collected at 83 to 87 feet bgs from boring B-10. Based on the results of the investigation, soil and groundwater in the area of off-site boring B-10 did not appear to be significantly impacted, groundwater within the lowermost sand and gravel unit in the area of boring B-8 was slightly impacted, and groundwater within the lowermost sand and gravel unit in the area of boring B-9 was not impacted.

Quarterly monitoring of the site wells has been performed since July 1998. Historically, the groundwater flow direction has varied from the north to the southwest. The depth to groundwater has varied from 21.62 feet bgs to 46.31 feet bgs.

Although the ozone system experienced problems with consistent operation, it appeared to be effective as TPHg, BTEX, and MTBE concentrations in monitoring well U-3 significantly decreased since startup of the system. The system was shut down in October 2006 to evaluate for groundwater concentration rebound. In March 2007, oxygen injection testing was performed in sparge wells SP-5/5S and SP-6S to evaluate the radius of influence (ROI) of the existing sparge wells, and to evaluate the effectiveness of the existing system. As described in our *Additional Subsurface Assessment Report*, dated April 26, 2007, the testing suggested a ROI of between 10 to 15 feet around the wells on average, but perhaps greater in some areas.

Impacted groundwater remains beneath the site in the areas of monitoring wells U-6 and U-7. Impacted groundwater also remains in the northwest portion of the site based on the results of the borings advanced in April 2006.

PRE-FIELD ACTIVITIES AND UTILITY LOCATION

Pre-Field Activities

Drilling permits and/or access agreements will be obtained for the wells as necessary from the appropriate parties prior to commencing field work. Delta will also prepare a health and safety plan (HASP) specific to the site and work being performed.

Underground Utility Location
The proposed well locations will be marked in the field prior to drilling, and Underground Services Alert (USA) will be contacted at least 48 hours prior to initiating drilling to minimize the risk of damaging underground utilities. A private utility locator will also be retained to survey the locations and further minimize the risk of damaging underground utilities. Additionally, an air-knife vacuum truck will be used to clear each proposed well location to a depth of at least 5 feet bgs prior to drilling.

PROPOSED OZONE INJECTION WELL INSTALLATION

The propose work was recommended to the Alameda County Health Agency (ACHA) in Delta's *Additional Subsurface Assessment Report*, dated April 26, 2007. In a letter dated May 23, 2007 the ACHA concurred with Delta's recommendations. To attempt to remediate the residual contamination at the site and limit the off-site migration of impacted groundwater, we propose the installation of seven ozone injection wells at the locations shown on Figure 2. These locations were selected based on the areas of greatest groundwater impact (monitoring wells U-3, U-6, and U-7), and the groundwater flow direction which varies from north to southwest.

Subsurface Investigation
The well borings will be drilled with truck-mounted 8-inch hollow-stem auger equipment. The injection wells will be constructed with 1.5-inch diameter by 18-inch-long sparge points attached to 1-inch Schedule 80 polyvinyl chloride (PVC) casing to near surface grade capped with a wellhead connection. A sand filter pack will extend from the total depth of the well boring to 2 feet above the top of the sparge point, sealed with 3 feet of bentonite chips saturated in place, and then capped to the ground surface with cement grout and completed with traffic-rated vault boxes. The sparge point depth will be based on the subsurface lithology encountered in the borings. A diagram detailing the proposed injection well construction is included as Figure 3.

Delta anticipates that each of the proposed injection wells will be installed to a total depth of approximately 43 feet bgs, with the sparge point placed from approximately 42 to 40.5 feet bgs. Soil samples for lithologic logging and chemical analysis will be collected at 5-foot intervals from each of the proposed borings to a depth of 35 feet bgs. From 35 feet bgs to the total depth of the borehole the soil will be collected and logged continuously using a five foot by 94 millimeter continuous core barrel. The screen intervals for the ozone injection wells will be determined based upon the lithology observed during the continuous logging in each borehole. Selected soil samples will be field screened with a photo-ionization detector (PID) for the presence of volatile organic compounds. Delta will collect one soil sample for laboratory analysis from each boring at the depths that exhibit the highest PID readings. Selected soil samples will be analyzed for TPHg, BTEX, and MTBE by EPA Method 8260B.

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.

DISPOSAL OF DRILL CUTTINGS AND WASTEWATER

Drill cuttings and any wastewater generated during field activities will be placed into properly labeled 55-gallon Department of Transportation (DOT)-approved steel drums

and stored on-site. Samples of the drill cuttings will be collected and submitted to a California-certified laboratory where they will be analyzed for TPHg, BTEX, and MTBE by EPA Test Method 8260B; and total lead by EPA Method 6010B. Pending laboratory analytical results, the drummed drill cuttings and wastewater will be profiled, transported, and disposed at a COP-approved facility. A copy of the waste disposal manifest(s) will be included in the investigation report.

REPORT

Delta will prepare and submit a Well Installation Report once all field activities have been completed and all laboratory results have been received. The report will contain a description of the activities performed, and will include a site plan showing the boring locations, and copies of the boring logs and well construction diagrams, laboratory analytical reports, and waste manifests.

RECOMMENDATION

Delta recommends that the existing ozone injection system be upgraded to a newer, more reliable system to obtain more consistent operation. Ozone systems are currently being evaluated.

REMARKS/SIGNATURES

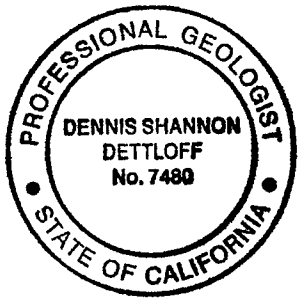
The recommendations contained in this report represent Delta's professional opinions based upon the currently available information and are arrived at in accordance with currently acceptable professional standards. This report is based upon a specific scope of work requested by the client. The Contract between Delta and its client outlines the scope of work, and only those tasks specifically authorized by that contract or outlined in this report were 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 questions regarding this work plan, please call Dennis Dettloff at (916) 503-1261.

Sincerely,

DELTA ENVIRONMENTAL CONSULTANTS, INC.

James P. Kiernan, P.E.
Senior Project Engineer



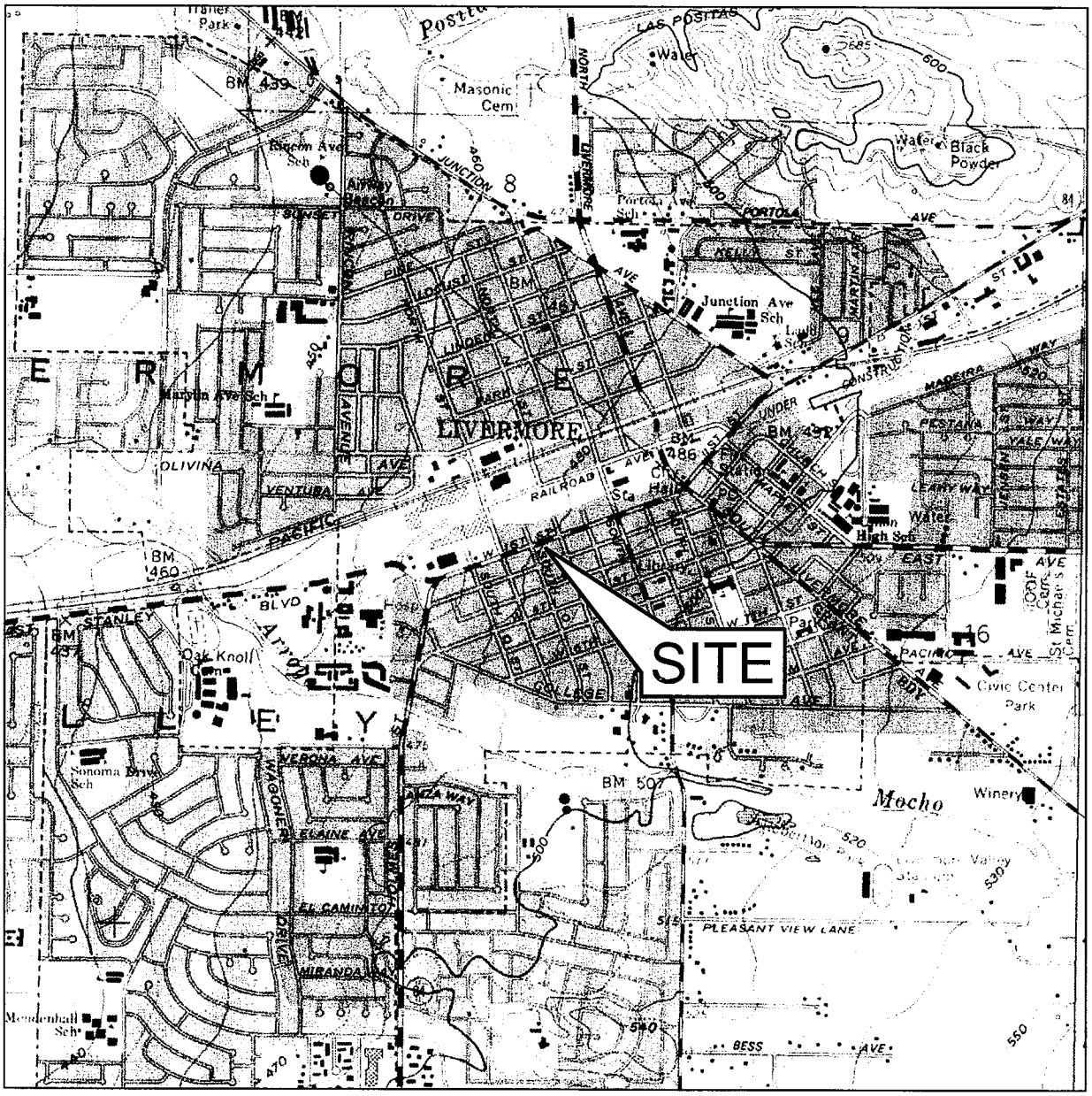
Dennis Dettloff, P.G.
Senior Project Manager
California Registered Professional Geologist No. 7480

DSD:JPK

cc: Mr. William Borgh – ConocoPhillips (1 electronic copy only)

Figures: Figure 1 – Site Location Map
Figure 2 – Site Plan and Proposed Ozone Injection Well Locations
Figure 3 – Well Construction Diagram

Figures



SOURCE: USGS 7.5 MINUTE TOPOGRAPHIC MAP, CALABASAS QUADRANGLE, 1967

FIGURE 1

SITE LOCATION MAP

76 STATION NO. 4186
1771 FIRST STREET
LIVERMORE, CA

PROJECT NO. C104-186	DRAWN BY MC 12/28/05
FILE NO. Site Locator 4186	PREPARED BY MC
REVISION NO. 1	REVIEWED BY

DELTA

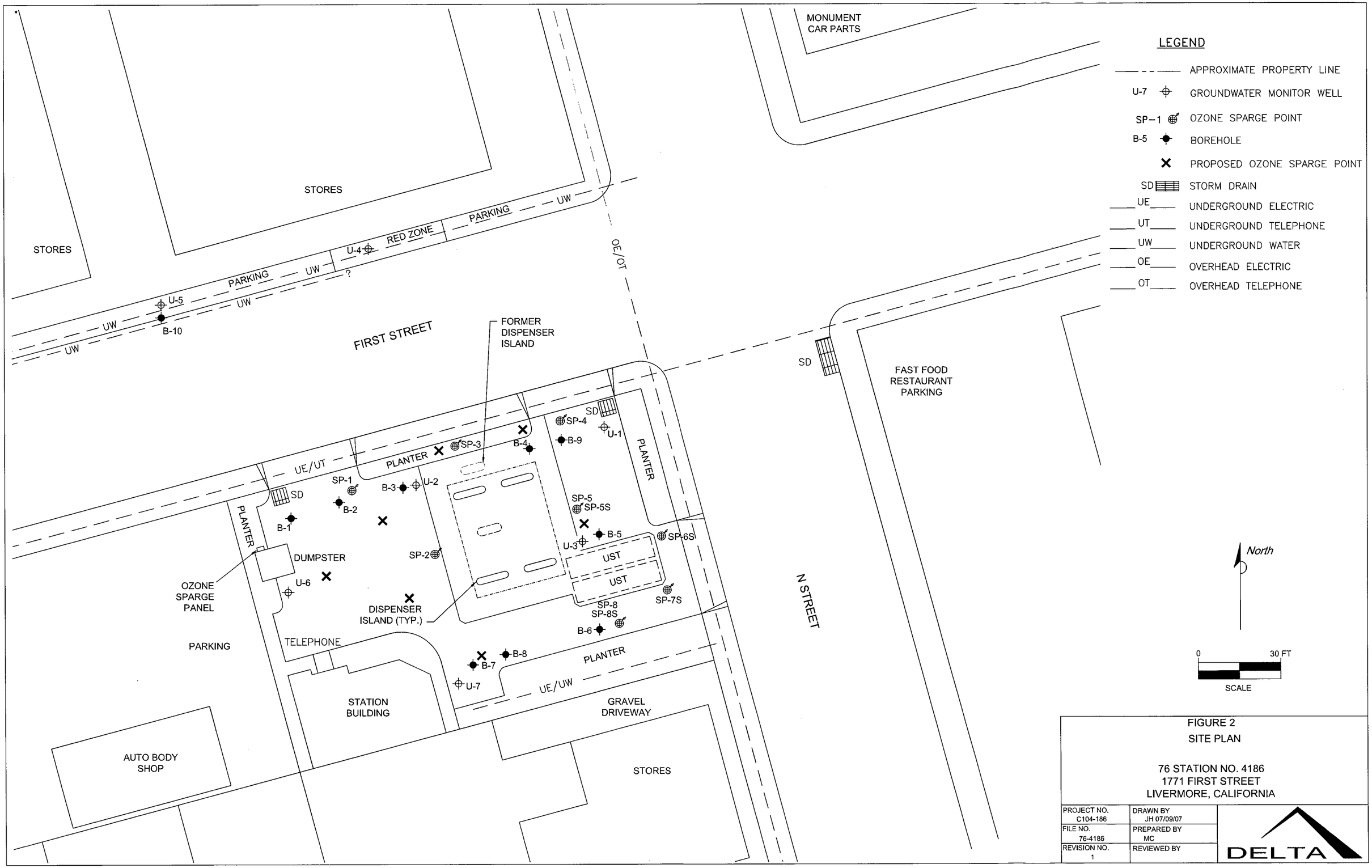
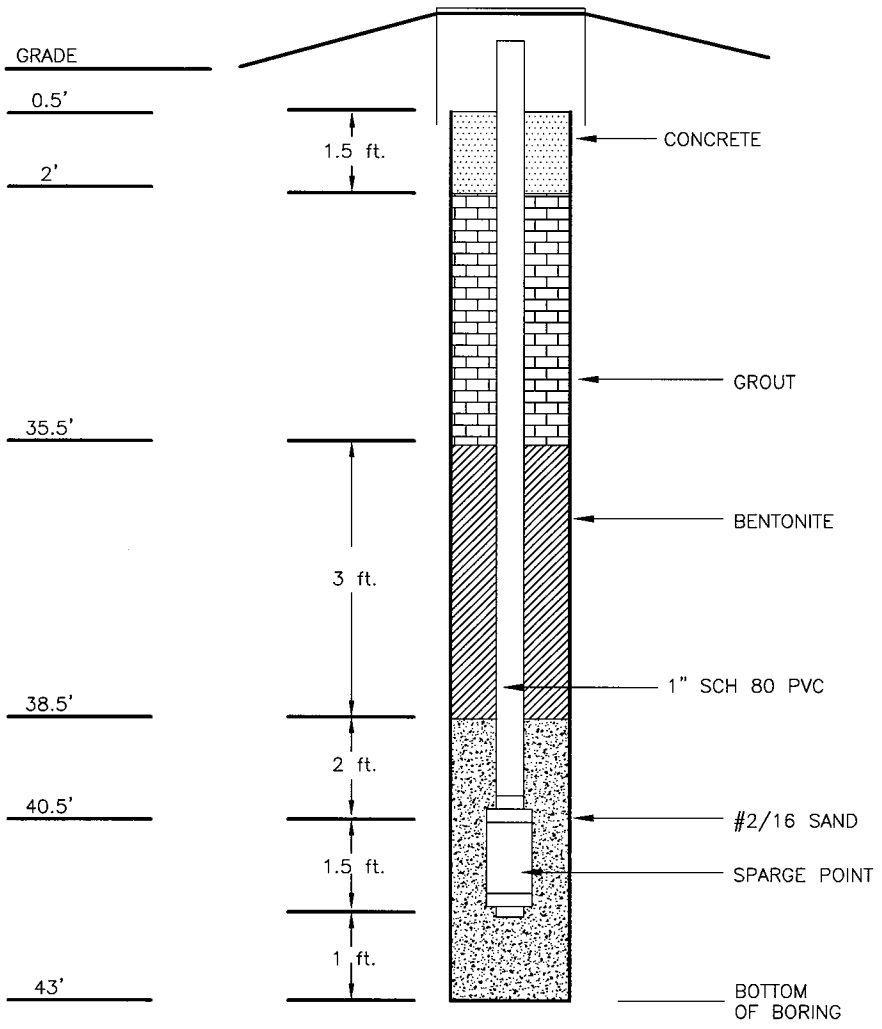


FIGURE 2
SITE PLAN

76 STATION NO. 4186
1771 FIRST STREET
LIVERMORE, CALIFORNIA

PROJECT NO. C104-186	DRAWN BY JH 07/09/07
FILE NO. 76-4186	PREPARED BY MC
REVISION NO. 1	REVIEWED BY

DELTA



NOTES:

1. NOT DRAWN TO SCALE
2. DEPTH MEASUREMENTS AND INTERVALS ARE APPROXIMATE. ACTUAL WELL DESIGN WILL BE BASED ON EXPLORATORY BORING AND SITE CONDITIONS

FIGURE 3
WELL CONSTRUCTION DIAGRAM

76 SERVICE STATION 4186
1771 FIRST STREET
LIVERMORE, CALIFORNIA

PROJECT NO.	PREPARED BY	DRAWN BY
C104186171	DD	JH
DATE	REVIEWED BY	FILE NAME
07/12/07		4186-PropW

DELTA