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Alameda County Environmental Health



July 6, 2007

Re:

Work Plan for Additional Soil and Groundwater Investigation

Shell Service Station 31235 Mission Blvd. Hayward, California

Dear Mr. Berkins:

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

Sincerely, Shell Oil Products US

Carl Carpey

Carol Campagna

Project Manager

July 6, 2007 Project SJ312-351-X SAP# 135356

Mr. Tom Berkins Groundwater Resources Engineer Alameda County Water District 43885 South Grimmer Blvd. Fremont, California 94538

Re: Work Plan for Additional Soil and Groundwater Investigation Shell-branded Service Station 31235 Mission Boulevard Hayward, California

Dear Mr. Berkins,

Delta Environmental Consultants, Inc. (Delta), on behalf of Shell Oil Products US (Shell), has prepared this work plan for an additional soil and groundwater investigation at the site referenced above. In an e-mail correspondence dated June 16, 2005, the Alameda County Water District (ACWD) requested a detailed work plan based on the recommendations from Delta's Off-Site Well Installation Report, dated February 28, 2007. Delta's recommendations included installation of two additional wells (MW-9 and MW-10) in order to define the down-gradient extent of methyl tertiary butyl ether (MTBE) and tertiary butyl alcohol (TBA) in groundwater. Also, an additional on site well, MW-11, is proposed to monitor the vertical extent of the MTBE/TBA directly down gradient from the area with the highest observed levels of MTBE and TBA in shallow groundwater.

BACKGROUND

The following sections provide an overview of previous assessment and remediation activities performed at the site.

Previous Soil and Groundwater Investigations

In October 2002, KHM Environmental Management, Inc. (KHM) supervised the drilling and installation of four groundwater monitoring wells (MW-1 through MW-4) under Shell's Groundwater Assessment





Program (GRASP). Site location is shown on Figure 1. A detailed site map with well locations is shown on Figure 1. GRASP is a voluntary initiative by Shell to install groundwater monitoring wells at numerous retail service stations.

In December 2003 and January 2004, Delta supervised the advancement of eight soil borings (SB-1 through SB-8) using GeoprobeTM and hollow stem auger (HSA) drilling equipment. MTBE was the primary constituent detected in soil samples. MTBE was detected in soil samples collected from Borings SB-1, SB-4, SB-5 and SB-6, at concentrations ranging from 0.0088 milligrams per kilogram (mg/kg) to 0.54 mg/kg. TBA was detected in the 21-foot sample collected from SB-1 at a concentration of 0.086 mg/kg. MTBE was detected in groundwater samples collected from each boring, ranging in concentration from 1.0 μ g/l (SB-8) to 5,800 μ g/l (SB-1). TBA was detected in the groundwater samples collected from Borings SB-3 and SB-4 at concentrations of 58 μ g/l and 11 μ g/l, respectively. Summaries of the historical soil and groundwater analytical results are included as Tables 1 and 2.

On November 15 and 16, 2004, Delta supervised the drilling and installation of Wells MW-5 through MW-8 (Figure 1). Off-site well locations (MW-5 through MW-8) were selected based on the groundwater analytical data from Borings SB-1 through SB-8. Groundwater was first detected in borings for wells at a depth of approximately 25 feet bg. The water level in borings stabilized at depths ranging from 17 to 20 feet bg. MTBE was the only analyte detected in soil samples collected at or near the top of the zone of saturation; Well MW-6 at 16 feet (0.011 mg/kg) and 21 feet (0.0094 mg/kg), and MW-7 at 21 feet (0.022 mg/kg) (Table 2). MTBE was the only analyte detected in groundwater samples from Wells MW-5 through MW-8 at concentrations ranging from 3.3 µg/l in Well MW-5 to 690 µg/l in Well MW-7 (Table 2).

Remediation Activities

Due to the presence of MTBE and TBA in groundwater, a temporary groundwater extraction (GWE) system was initiated in March 2004. GWE was performed utilizing Well MW-1 which had the highest concentrations of MTBE and TBA. A submersible pump was placed in Well MW-1. Extracted groundwater was piped to a 6,500-gallon holding tank and then transported to the Shell refinery in Martinez, California for disposal. GWE was performed at a constant pumping rate of 1.0 gallon per minute. GWE was performed from March 30, 2004 to June 8, 2004, and approximately 61,285 total gallons of groundwater were extracted. The MTBE concentration in Well MW-1 decreased from 13,000 µg/l prior to the GWE event, to 7,200 µg/l on June 8, 2004. The TBA concentration in Well MW-1 increased dramatically following the extraction event, likely indicating that the MTBE concentration was sufficiently lowered allowing bio-attenuation to begin degradation of MTBE into TBA. MTBE concentrations in site wells continue to decrease.

Quarterly Groundwater Monitoring and Sampling

Groundwater monitoring has been performed quarterly since initial sampling in December 2002. MTBE and TBA have been the two chemicals consistently detected in groundwater samples. The highest concentrations of MTBE and TBA have been detected in Well MW-1 located downgradient (west) of the site fuel dispensers and underground storage tanks (USTs). MTBE concentrations reached their highest levels in December 2003 at 22,000 μ g/l. Since December 2003, the MTBE concentration in Well MW-1 has declined to 66 μ g/l (March 2007). Historical groundwater analytical results are included as Attachment A.

Prior to off-site well installation, the horizontal groundwater flow direction at the site appeared to range from northwest to southwest. However, since off-site well installation the predominant flow direction at the site has been towards the west at an average gradient of approximately 0.01 feet/feet. A rose diagram illustrating historic groundwater flow directions at the site is included on Figure 1.

Lateral Delineation of Plume to Date

MTBE is currently detected in down-gradient Wells MW-6 through MW-8, located west of the site, at concentrations ranging from 40 to 370 μ g/l. Results of grab groundwater samples from borings SB-9 through SB-13 installed in February 2006, and from borings SB-14 through SB17 installed in May 2006, showed detectable MTBE concentrations extending as far west and northwest as SB-16.

Vertical Delineation of Plume to Date

In order to evaluate the vertical extent of petroleum hydrocarbons and oxygenates in groundwater, Delta drilled two cone penetration test (CPT) borings in 2006. (CPT-1 and CPT-2 on Figure 1). Groundwater samples were collected at approximately 45, 61, 81, and 94 feet bg in CPT-1. Groundwater samples were collected at approximately 65 and 82 feet bg in CPT-2 (no groundwater was recovered in attempted sampling at 23 and 45 feet bg).

No petroleum hydrocarbons, MTBE, or TBA were detected in the two groundwater samples collected from CPT-2. TPH-D was detected in the 61, 81, and 94 foot bg groundwater samples in CPT-1 (maximum 380 μ g/l at 61 feet bg). Toluene and xylenes were detected at low levels (maximum 1.6 μ g/l) in groundwater samples from 81 and 94 feet bg, but the laboratory report noted levels may be biased high due to carry over from a previous analysis. MTBE was detected in one groundwater sample from CPT-1 at a depth of 45 feet (5.5 μ g/l).

WORK PLAN

Delta proposes to install two additional groundwater monitoring wells, MW-9 and MW-10, at the locations shown on Figure 1. The purpose of these wells is to define and monitor the down gradient extent of the MTBE/TBA plume in the shallowest saturated zone. Delta also proposes the installation of one additional well, shown as MW-11 on Figure 1, to monitor the vertical extent of the MTBE/TBA plume.

Prefield Activities

An access agreement will be required for the installation of monitoring wells on each adjacent property. Delta will obtain necessary drilling permits from the Alameda County Public Works Agency. Delta will also contact ACWD's Permit Section to schedule an inspector for the proposed drilling dates. A site-specific health and safety plan will be prepared prior to initiating field activities. Delta will mark the location of each proposed boring, and contact Underground Services Alert a minimum of 48 hours prior to drilling. In addition, a utility locating contractor will be retained to perform a geophysical survey of the proposed boring locations, and each location will be air-knifed to a depth of approximately seven feet bg to minimize the possibility of drilling equipment encountering any unidentified underground utilities. The air-knife and well drilling equipment will be provided and operated by Test America Drilling (License C57- 819548).

Well Drilling and Installation

Proposed groundwater monitoring wells MW-9 and MW-10 will be placed to define the down gradient extent of MTBE and TBA in groundwater. MW-9 will be located adjacent to previous soil boring SB-16, due to the elevated MTBE levels detected in this location. MW-10 will be located approximately 300 feet further downgradient (to the northwest) to better define the downgradient edge of the MTBE plume.

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Borings for MW-9 and MW-10 will be drilled to a depth of approximately 25 feet bg. Proposed monitoring well MW-11 will be placed on-site near the location of CPT-1 in order to assess the vertical extent of the MTBE plume. The boring for MW-11 will be drilled to a depth of approximately 65 feet bg.

Soil samples will be collected from well borings for MW-9 and MW-10 at 5-foot intervals from the extent of the air-knife hole to the total depth of the boring. Well boring for MW-11 will be continuously cored to a total depth of the boring in order to evaluate best depth for the screened interval, and to evaluate whether conductor casing is needed to prevent creating a conduit for downward migration of contaminants. Each well boring will be drilled using hollow stem auger (HSA) drilling equipment. A photo-ionization detector (PID) will be used to measure soil hydrocarbon concentrations at 5-foot intervals. The PID soil samples will be placed in a sealed plastic bag. After approximately 5-minutes, the PID probe will be inserted into the plastic bag and soil gas allowed to pass through the PID until readings stabilize. The resulting concentration reading will be recorded on the geologist's field log. Soil samples with a photo-ionization detector (PID) reading greater than 10 parts per million (ppm) will be analyzed for the presence of petroleum hydrocarbons and fuel oxygenates. Soil samples will be logged on to a chain-of-custody form. Samples will be shipped to the laboratory in a cooler with ice. Excess soils generated from the drilling activities will be placed in sealed containers with proper labeling. After return of soil analytical data, Delta will arrange for the proper disposal of the soil. Waste disposal documentation will be included in the investigation report.

The field geologist will carefully examine each soil sample as it is collected. Soils will be classified based on the Unified Soil Classification System using the American Society for Testing and Materials (ASTM) Method D-2487 published in May 2000. In addition to classifying the soils, the geologist will examine the sample for such features as root-holes, fractures, mineralization, and thin micro-bedding.

Wells will be drilled using 8-inch diameter hollow-stem augers. Wells will be constructed using 2-inch diameter polyvinylchloride (PVC) casing and manufactured well screen. Wells MW-9 and MW-10 will be screened in the 15 to 25 foot depth interval using 0.010-inch well screen. Well MW-11 will be screened from approximately 55 to 65 feet below grade. Exact location of the screen will be determined in the field based on analysis of the soil samples collected during continuous coring of the boring. Due to the fine grained lithologies present from 25 feet bg to 69 feet bg in CPT-1, it is anticipated that conductor casing will not be needed. The hollow stem auger will provide an adequate barrier to downward migration of impacted water from the shallow saturated zone. A 2/12 sand pack will be installed from the bottom of hole to 1 foot above the screen, 2 feet of bentonite will then be placed above the sand pack, and a cement grout seal will be placed to approximately 0.5 feet bg. A traffic-rated vault box will be installed flush to the ground surface over each well.

All down hole drilling tools will be decontaminated between holes. The decontamination process will consist of multiple wash and rinse cycles. The first washing involves scrubbing all trace soil or contaminants from the drilling tools, then washing them with a non-phosphate detergent and water. Following the initial washing with detergent, the tools are then dip-rinsed and sprayed with water. A final rinse is performed using deionized water that is poured directly over the sampling tools, followed by placement into a clean container for air drying.

Analytical Testing

Soil samples from each borehole will be selected for chemical analysis based on PID screening data. Soil samples will be selected to confirm the distribution of any petroleum hydrocarbons indicated by the field PID readings. Soil samples will be analyzed for total petroleum hydrocarbons as gasoline (TPH-G), total

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petroleum hydrocarbons as diesel (TPH-D), benzene, toluene, ethylbenzene, and xylene (BTEX compounds) and fuel oxygenates MTBE and TBA by EPA Method 8260B.

After installation, wells will be developed, gauged and sampled by Blaine Tech Services (Blaine). Groundwater will be analyzed for TPH-G, TPH-D, BTEX compounds and fuel oxygenates MTBE and TBA by EPA Method 8260B.

Well Installation Report

Delta will prepare a report describing field methods and summarizing the results of chemical analyses of soil samples collected during the installation of the well borings. The report will contain boring logs, certified analytical reports, and chain of custody documentation. After initial sampling, MW-9, MW-10, and MW-11 will be placed on the quarterly monitoring schedule corresponding to existing on-site wells. The off site property owner will receive copies of all documents related to the existence of petroleum hydrocarbons in soil and groundwater beneath the subject property.

Schedule

Delta will request access from adjacent property owners following acceptance of this work plan by the ACWD. Delta will commence field activities within 30 days of receipt of off-site property access agreements.

REMARKS

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 any questions, please call Tom Hargett at (408) 826-1868.

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TOM HARGET NO. 5510

OF CALIFO

Sincerely,

Delta Environmental Management, Inc.

Sean Gehlke

Staff Geologist

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Tom Hargett

Project Manager

PG 5510

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Attachments: Table 1 – Summary of Soil Analytical Data

Table 2 – Summary of Boring Grab-Groundwater Sample Analytical Data

Figure 1 – Proposed Boring Locations and Site Map

Attachment A – Blaine Groundwater Monitoring and Sampling Report, April 7, 2007

cc: Carol Campagna, Shell Oil Products US, Carson Danny Galang, Hayward Fire Department Howard Pearlman, Bartko, Zankel, Tarrant & Miller, San Francisco Allen and Nelson Hutchinson, Property Owner, Hayward

TABLE 1 HISTORICAL SUMMARY OF SOIL ANALYTICAL DATA

31235 Mission Boulevard Hayward, California

Sample I.D.	Sample Collection Date	TPH-G	TPH-D	Benzene	Toluene	Ethyl- benzene	Total Xylenes	MTBE	DIPE	ETBE	TAME	TBA
MW-1 25.5'-26'	10/28/02	<1.0	NA	<0.005	<0.005	<0.005	<0.005	0.6	<0.5	<0.5	<0.5	0.5
MW-1 30.5'-31'	10/28/02	<1.0	NA	<0.005	<0.005	<0.005	<0.005	1.9	<0.5	<0.5	<0.5	<0.5
MW-1 32.5'-33'	10/28/02	<1.0	NA	<0.005	<0.005	<0.005	<0.005	1.7	<0.5	<0.5	<0.5	<0.5
MW-2 27.5'-28'	10/29/02	<1.0	NA	<0.005	<0.005	<0.005	<0.005	<0.5	<0.5	<0.5	<0.5	<0.5
MW-3 20.5'-21'	10/29/02	150	NA	<0.025	<0.025	0.62	0.06	<0.5	<0.5	<0.5	<0.5	<0.5
MW-3 25.5'-26	10/29/02	250	NA	<0.05	<0.05	0.061	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5
MW-3 30.5'-31	10/29/02	<1.0	NA	<0.005	<0.005	<0.005	<0.005	0.5	<0.5	<0.5	<0.5	<0.5
MW-3 32'-32.5'	10/29/02	<1.0	NA	<0.005	<0.005	<0.005	<0.005	0.9	<0.5	<0.5	<0.5	<0.5
MW-4 19'-19.5'	10/28/02	<1.0	NA	<0.005	<0.005	<0.005	<0.005	<0.5	<0.5	<0.5	<0.5	<0.5
MW-4 24'-24.5'	10/28/02	<1.0	NA	<0.005	<0.005	<0.005	<0.005	0.9	<0.5	<0.5	<0.5	<0.5
MW-4 26'-26.5'	10/28/02	11	NA	<0.005	<0.005	<0.005	<0.005	1.9	<0.5	<0.5	<0.5	0.6
MW-4 30.5'-31'	10/28/02	<1.0	NA	<0.005	<0.005	<0.005	<0.005	1.7	<0.5	<0.5	<0.5	<0.5
SB-1 @ 21'	01/28/04	<1.0	4.0*	<0.005	<0.005	<0.005	<0.005	0.13	<0.01	<0.005	<0.005	0.086
SB-1 @ 26'	01/28/04	<4.3	<1.0	<0.022	<0.022	<0.022	<0.022	0.49	<0.043	<0.022	<0.022	<0.043
SB-1 @ 30'	01/28/04	<4.3	<1.0	<0.021	<0.021	<0.021	<0.021	0.54	<0.043	<0.021	<0.021	<0.043
SB-3 @ 21'	01/29/04	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01
SB-3 @ 25'	01/29/04	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01
SB-4 @ 21'	01/29/04	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	0.021	<0.01	<0.005	<0.005	<0.01
SB-4 @ 25'	01/29/04	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	0.018	<0.01	<0.005	<0.005	<0.01
SB-5 @ 16'	01/29/04	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01
SB-5 @ 21'	01/29/04	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01
SB-5 @ 25'	01/29/04	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	0.20	<0.01	<0.005	<0.005	<0.01
SB-6 @ 21'	01/28/04	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01
SB-6 @ 26'	01/28/04	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	0.0088	<0.01	<0.005	<0.005	<0.01
SB-7 @ 21'	01/28/04	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01
SB-7 @ 26'	01/28/04	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01

TABLE 1 HISTORICAL SUMMARY OF SOIL ANALYTICAL DATA

31235 Mission Boulevard Hayward, California

Sample I.D.	Sample Collection Date	TPH-G	TPH-D	Benzene	Toluene	Ethyl- benzene	Total Xylenes	мтве	DIPE	ETBE	TAME	TBA
SB-8 @ 26'	01/28/04	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01
SB-8 @ 30'	01/28/04	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01
MW-5 @ 11	11/15/04	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01
MW-5 @ 16	11/16/04	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01
MW-5 @ 21	11/16/04	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01
MW-6 @ 11	11/15/04	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01
MW-6 @ 16	11/15/04	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	0.011	<0.01	<0.005	<0.005	<0.01
MW-6 @ 21	11/15/04	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	0.0094	<0.01	<0.005	<0.005	<0.01
MW-7 @ 11	11/15/04	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01
MW-7 @ 16	11/15/04	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01
MW-7 @ 21	11/15/04	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	0.022	<0.01	<0.005	<0.005	<0.01
MW-8 @ 11	11/16/04	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01
MW-8 @ 16	11/16/04	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01
MW-8 @ 21	11/16/04	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01
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Notes:

All data reported in milligrams per kilogram (mg/kg)

TPH-G - Total Petroleum Hydrocarbons as gasoline

TPH-D - Total Petroleum Hydrocarbons as Diesel

MTBE - Methyl tert-butyl ether

DIPE - Di-isopropyl ether

*Hydrocarbon reported is in the late diesel range, and does not match the laboratory diesel standard

ETBE - Ethyl tert-butyl ether

TAME - Tert-amyl methyl ether

TBA - Tert-Butanol

NA - Not analyzed

<n = Below the detection limit

TPH-D quantified using EPA Method 8015

TPH-g quantified using EPA Method 8260B

BTEX Compounds, MTBE, DIPE, ETBE, TAME, and TBA analyzed using EPA Method 8260B

TABLE 2 HISTORICAL SUMMARY OF GROUNDWATER ANALYTICAL DATA

31235 Mission Boulevard Hayward, California

Sample I.D.	Sample Collection Date	TPH-G	TPH-D	Benzene	Toluene	Ethyl- benzene	Total Xylenes	MTBE	DIPE	ETBE	TAME	TBA
GP-2	12/11/03	<50	68*	<0.50	<0.50	<0.50	<1.0	150	<2.0	<2.0	<2.0	<5.0
SB-1	01/28/04	<2500	<50	<25	<25	<25	<50	5,800	<100	<100	<100	<250
SB-3	01/29/04	<500	<50	<5.0	<5.0	<5.0	<10	1,100	<20	<20	<20	58
SB-4	01/29/04	<100	<50	<1.0	<1.0	<1.0	<2.0	260	<4.0	<4.0	<4.0	11
SB-5	01/29/04	<1000	260**	<10	<10	<10	<20	2,800	<40	<40	<40	<100
SB-6	01/28/04	<50	140**	<0.50	0.99	<0.50	1.2	99	<2.0	<2.0	<2.0	<5.0
SB-7	01/28/04	<50	140**	<0.50	<0.50	<0.50	<1.0	1.6	<2.0	<2.0	<2.0	<5.0
SB-8	01/28/04	<50	130**	<0.50	<0.50	<0.50	<1.0	1.0	<2.0	<2.0	<2.0	<5.0
SB-9 @ 17'	02/09/06	<50	78*/<50 a	<0.5	<0.5	<0.5	<1.0	<0.5	NA	NA	NA	<5.0
SB-10 @ 16'	02/09/06	<50	100*/ 81*a	<0.5	<0.5	<0.5	<1.0	7.8	NA	NA	NA	6.1
SB-11 @ 16.5'	02/09/06	210	52*/ <50 a	<0.5	<0.5	<0.5	<1.0	290	NA	NA	NA	51
SB-12 @ 18'	02/09/06	230	53*/< 50 a	<0.5	<0.5	<0.5	<1.0	350	NA	NA	NA	61
SB-13 @15'	02/08/06	200	250*/160* a	<0.5	<0.5	<0.5	<1.0	350	NA	NA	NA	61
SB-14	05/31/06	<50	<52.1	<0.5	0.580	<0.5	0.510	11.3	NA	NA	NA	<10
SB-15	05/31/06	<50	<52.1	<0.5	0.770	<0.5	<0.5	<0.5	NA	NA	NA	<10
SB-16	05/31/06	218	<52.1	<0.5	<0.5	<0.5	<0.5	396	NA	NA	NA	<10
SB-17	05/31/06	<50	<52.1	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	<10
CPT2 @ 65'	02/10/06	<50	<50	<0.5	<0.5	<0.5	<1.0	<0.5	NA	NA	NA	<5.0
CPT2 @ 82'	02/10/06	<50	<50	<0.5	<0.5	<0.5	<1.0	<0.5	NA	NA	NA	<5.0
CPT-01 @ 45'	03/07/06	<50	NA	<0.5	<0.5	<0.5	<0.5	5.5	NA	NA	NA	<20
CPT-01 @ 61'	03/07/06	<50	380	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	<20
CPT-01 @ 81'	03/07/06	<50	110	<0.5	0.77 ¹	<0.5	1.6 ¹	<0.5	NA	NA	NA	<20
CPT-01 @ 94'	03/07/06	<50	86	<0.5	0.68 ¹	<0.5	1.2 ¹	<0.5	NA	NA	NA	<20
Notes:			·									

Notes:

All data reported in micrograms per liter (µg/L)

TPH-G - Total Petroleum Hydrocarbons as gasoline

TPH-D - Total Petroleum Hydrocarbons as Diesel

MTBE - Methyl tert-butyl ether

TBA - Tert-Butanol

NA - Not analyzed

<n = Below the detection limit

TPH-D quantified using EPA Method 8015

TPH-G quantified using EPA Method 8260B

BTEX Compounds, MTBE, and TBA analyzed using EPA Method 8260B

DIPE = Di-isopropyl ether

ETBE = Ethyl tert-butyl ether

TAME = Tert-amyl methyl ether

*Hydrocarbon reported does not match the pattern

of the laboratory's diesel standard

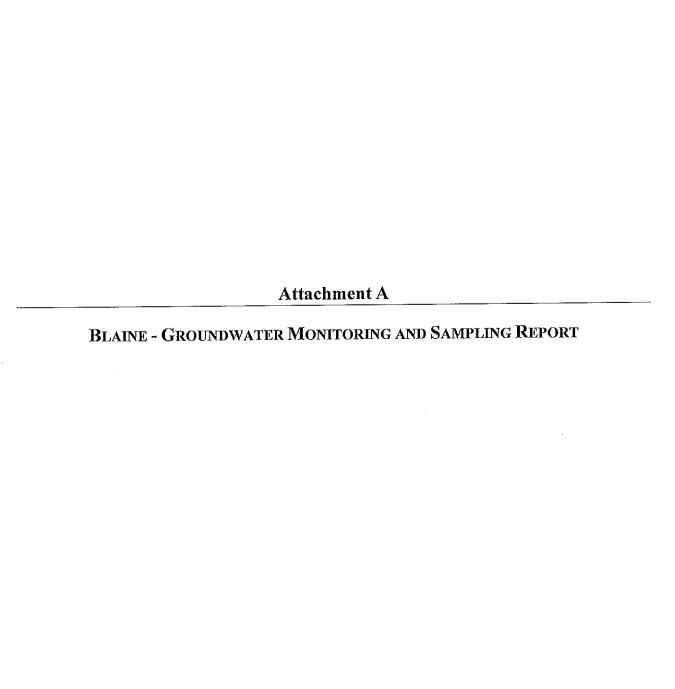
**Hydrocarbon reported is in the late Diesel range,

and does not match the laboratory's diesel standard

a - Sample re-analyzed for TPH-D with silica get cleanup

1 - Sample ran out of hold time and result may be biased high due to carry over

from a preceding analysis



BLAINE TECH SERVICES INC.

GROUNDWATER SAMPLING SPECIALISTS SINCE 1985

April 4, 2007

Carol Campagna HSE – Environmental Services Shell Oil Products US 20945 South Wilmington Avenue Carson, CA 90810

> First Quarter 2007 Groundwater Monitoring at Shell-branded Service Station 31235 Mission Boulevard Hayward, CA

Monitoring performed on March 12, 2007

Groundwater Monitoring Report 070312-MA-1

This report covers the routine monitoring of groundwater wells at this Shell-branded facility. In accordance with standard procedures that conform to Regional Water Quality Control Board requirements, routine field data collection includes depth to water, total well depth, thickness of any separate immiscible layer, water column volume, calculated purge volume (if applicable), elapsed evacuation time (if applicable), total volume of water removed (if applicable), and standard water parameter instrument readings. Sample material is collected, contained, stored, and transported to the laboratory in conformance with EPA standards. Purgewater (if applicable) is, likewise, collected and transported to the Martinez Refining Company.

Basic field information is presented alongside analytical values excerpted from the laboratory report in the cumulative table of **WELL CONCENTRATIONS**. The full analytical report for the most recent samples and the field data sheets are attached to this report.

At a minimum, Blaine Tech Services, Inc. field personnel are certified on completion of a forty-hour Hazardous Materials and Emergency Response training course per 29 CFR 1910.120. Field personnel are also enrolled in annual eight-hour refresher courses.

AS BROLINA

SACRAMENTO

LOS ANGELES

SAN DIEGO

FAX (408) 573-7771 LIC. 746684

Blaine Tech Services, Inc. conducts sampling and documentation assignments of this type as an independent third party. Our activities at this site consisted of objective data and sample collection only. No interpretation of analytical results, defining of hydrological conditions or formulation of recommendations was performed.

Please call if you have any questions.

Yours truly,

Mike Ninokata Project Manager

MN/ks

attachments: Cumulative Table of WELL CONCENTRATIONS

Certified Analytical Report

Field Data Sheets

cc: Debbie Bryan

Delta Environmental

175 Bernal Road, Suite 200

San Jose, CA 95119

				i				MTBE							Depth to	GW
Well ID	Date	TPPH	TEPH	В	Т	E	X	8260	DIPE	ETBE	TAME	TBA	Ethanol	TOC	Water	Elevation
		(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(MSL)	(ft.)	(MSL)
MW-1	12/02/2002	NA	NA	NA	NA	NA	NA	NA	NA	NΑ	NA	NA	NA	NA	22.82	NA
MW-1	12/23/2002	<2,000	<100	<20	<20	<20	<20	9,600	<20	<20	<20	1,200	NA	NA	18.77	NA
MW-1	03/20/2003	<13,000	<50	<130	<130	<130	<250	14,000	<250	<130	<130	1,400	NA	42.19	20.58	21.61
MW-1	06/16/2003	<10,000	75 a	<100	<100	<100	<200	14,000	<400	<400	<400	2,100	NA	42.19	19.99	22.20
MW-1	09/18/2003	<10,000	<50	<100	<100	<100	<200	19,000	<400	<400	<400	3,000	NA	42.19	21.66	20.53
MW-1	12/02/2003	<13,000	69 a	<130	<130	<130	<250	22,000	<500	<500	<500	1,500	NA	42.19	22.08	20.11
MW-1	03/01/2004	<10,000	90 a	<100	<100	<100	<200	13,000	<400	<400	<400	1,200	NA	42.19	18.76	23.43
MVV-1	06/08/2004	<5,000	84 a	<50	<50	<50	<100	7,200	<200	<200	<200	3,500	NA	42.19	21.71	20.48
MW-1	09/24/2004	<1,000	<50	<10	<10	<10	<20	420	<40	<40	<40	8,200	NA	42.19	22.85	19.34
MVV-1	12/23/2004	<1,000	79 b	<10	<10	<10	<20	130	<40	<40	<40	11,000	NA	42.19	21.89	20.30
MW-1	03/02/2005	<1,000	84 b	<10	<10	<10	<20	79	<40	<40	<40	6,600	NA	42.19	16.84	25.35
MW-1	06/17/2005	<1,000	67 b	<10	<10	<10	<20	110	<40	<40	<40	7,400	NA	42.19	17.75	24.44
MW-1	09/01/2005	<1,000	<50	<10	<10	<10	<20	120	<40	<40	<40	1,800	NA	42.19	19.68	22.51
MW-1	12/08/2005	<250	<47	<2.5	<2.5	<2.5	<2.5	170	NA	NA	NA	5,000	NA	42.19	20.95	21.24
MW-1	03/16/2006	<500	i	<0.500	<0.500	<0.500	<0.500	770	NA	NA	NA	2,550	NA	42.19	15.15	27.04
MW-1	06/01/2006	<50.0	86.8 h	<0.500	<0.500	<0.500	<0.500	99.6	NA	NA	NA	2,400	NA	42.19	15.91	26.28
MW-1	09/26/2006	290	80.1 h	<5.0	<5.0	<5.0	<10	490	<10	<10	<10	4,800	<1,500	42.19	19.40	22.79
MVV-1	12/08/2006	470	55 h	<0.50	<0.50	<0.50	<1.0	230	NA	NA	NA	3,500	NA	42.19	20.13	22.06
MW-1	03/12/2007	170	<50 h	<1.0	<1.0	<1.0	<2.0	66	NA	NA	NA	3,000	NA	42.19	18.28	23.91
	1							·					-	T		
MW-2	12/02/2002	NA	NA	NA	NA	NA	NA	NA	NA	-NA	NA	NA	NA	NA	22.71	NA NA
MW-2	12/23/2002	<1,000	<100	<10	<10	<10	<10	4,200	<10	<10	<10	130	NA	NA	18.51	NA NA
MW-2	03/20/2003	<13,000	<60	<130	<130	<130	<250	8,800	<250	<130	<130	<1300	NA	42.18	20.70	21.48
MW-2	06/16/2003	<10,000	70 a	<100	<100	<100	<200	6,200	<400	<400	<400	<1000	NA	42.18	20.00	22.18
MW-2	09/18/2003	<2,500	630 a	<25	<25	<25	<50	8,700	<100	<100	<100	330	NA	42.18	21.68	20.50
MW-2	12/02/2003	<5,000	59 a	<50	<50	<50	<100	5,000	<200	<200	<200	940	NA	42.18	22.08	20.10

								MTBE							Depth to	GW
Well ID	Date	TPPH	TEPH	В	T	E	Х	8260	DIPE	ETBE	TAME	TBA	Ethanol	TOC	Water	Elevation
		(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(MSL)	(ft.)	(MSL)
MW-2	03/01/2004	<2,000	67 a	<20	<20	<20	<40	1,900	<80	<80	<80	2,000	NA	42.18	18.65	23.53
MW-2	06/08/2004	<500	<50	<5.0	<5.0	<5.0	<10	79	<20	<20	<20	3,100	NA	42.18	21.63	20.55
MW-2	09/24/2004	<500	<50	<5.0	<5.0	<5.0	<10	10	<20	<20	<20	4,100	NA	42.18	22.84	19.34
MW-2	12/23/2004	<500	93 a	<5.0	<5.0	<5.0	<10	20	<20	<20	<20	2,300	NA	42.18	21.94	20.24
MW-2	03/02/2005	<100 d	50 a	<1.0	<1.0	<1.0	<2.0	3.8	<4.0	<4.0	<4.0	770	NA	42.18	16.54	25.64
MW-2	06/17/2005	<50	<50	<0.50	<0.50	<0.50	<1.0	6.2	<2.0	<2.0	<2.0	540	NA	42.18	17.64	24.54
MW-2	09/01/2005	<50	<50	<0.50	<0.50	<0.50	<1.0	10	<2.0	<2.0	<2.0	280	NA	42.18	19.63	22.55
MW-2	12/08/2005	<250	<48	<2.5	<2.5	<2.5	<2.5	12	NA	NA	NA	200	NA	42.18	20.89	21.29
MW-2	03/16/2006	<50.0	159 h	<0.500	<0.500	<0.500	<0.500	1.97	NA	NA	NA	52.8	NA	42.18	14.80	27.38
MW-2	06/01/2006	<50.0	58.0 h	<0.500	<0.500	<0.500	<0.500	9.02	NA	NA	NA	432	NA	42.18	15.83	26.35
MW-2	09/26/2006	<50	<47.6 h	<0.50	<0.50	<0.50	<1.0	3.0	<1.0	<1.0	<1.0	28	<150 k,l,m	42.18	19.34	22.84
MW-2	12/08/2006	<50	<56 h,n	<0.50	<0.50	<0.50	<1.0	2.1	NA	NA	NA	16	NA	42.18	20.02	22.16
MW-2	03/12/2007	<50	<50 h	<0.50	<0.50	<0.50	<1.0	3.4	NA	NA	NA	80	NA	42.18	17.63	24.55
E-WM	12/02/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	22.40	NA
MW-3	12/23/2002	4,000	<1,600	5.2	<5.0	170	160	3,000	<5.0	<5.0	6.4	610	NA	NA	18.06	NA
MW-3	03/20/2003	<10,000	1,900	<100	<100	100	<200	4,300	<200	<100	<100	1,100	NA	42.24	20.03	22.21
MW-3	06/16/2003	2,900	1,400 a	<25	<25	69	50	4,800	<100	<100	<100	1,500	NA	42.24	20.23	22.01
MW-3	09/18/2003	3,700	820 a	<10	<10	40	29	3,700	<40	<40	<40	460	NA	42.24	20.85	21.39
MW-3	12/02/2003	2,900 a	690 a	<10	<10	40	<20	1,400	<40	<40	<40	280	NA	42.24	21.21	21.03
MW-3	03/01/2004	2,000	660 a	<10	<10	22	<20	1,400	<40	<40	<40	260	NA	42.24	19.00	23.24
MW-3	06/08/2004	2,200	650 a	<5.0	<5.0	26	24	1,400	<20	<20	<20	380	NA	42.24	21.63	20.61
MW-3	09/24/2004	3,300 a	1,100 b	<5.0	<5.0	52	13	1,500	<20	<20	<20	540	NA	42.24	22.57	19.67
MW-3	12/23/2004	3,300	810 a	15	<5.0	25	<10	700	<20	<20	<20	910	NA	42.24	22.03	20.21
MW-3	03/02/2005	3,600	670 b	56	16	33	21	550	<20	<20	<20	790	NA	42.24	16.48	25.76
MW-3	06/17/2005	NA	NA	NA	NA	NA	NA	NA	NA	NA.	NA	NA	NA	42.24	17.34	24.90

								MTBE							Depth to	GW
Well ID	Date	TPPH	TEPH	В	Т	E	Х	8260	DIPE	ETBE	TAME	TBA	Ethanol	тос	Water	Elevation
		(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(MSL)	(ft.)	(MSL)
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MW-3	06/29/2005	3,300	680 a	7.3	<5.0	26	11	290	<20	<20	<20	1,100	NA	42.24	17.89	24.35
MW-3	09/01/2005	1,900 e	470 b	<5.0	<5.0	10	<10	190	<20	<20	<20	1,300	NA	42.24	19.57	22.67
MVV-3	12/08/2005	1,900	520 g	2.3	<0.50	17	3.5	84	NA	NA	NA	1,200	NA	42.24	20.67	21.57
MW-3	03/16/2006	4,490	1,530 h	0.910	<0.500	44.1	24.3	92.6	NA	NA	NA	484	NA	42.24	15.05	27.19
MW-3	06/01/2006	8,450	2,150 h	1.91	<0.500	178	116	53.9 j	NA	NA	NA	465 j	NA	42.24	15.36	26.88
MW-3	09/26/2006	2,600	593 h	<1.2	<1.2	43	10	26	<2.5	<2.5	<2.5	860	<380	42.24	18.43	23.81
MW-3	12/08/2006	2,800	720 h	0.86	<0.50	29	6.7	46	NA	NA	NA	1,200	NA	42.24	20.02	22.22
MW-3	03/12/2007	3,000	450 h	0.95	<0.50	28	3.7	44	NA	NA	NA	580	NA	42.24	18.55	23.69
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MW-4	12/02/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	22.00	NA
MW-4	12/23/2002	<1,000	300	<10	<10	<10	<10	3,200	<10	<10	<10	830	NA	NA	17.22	NA
MW-4	03/20/2003	<10,000	410	<100	<100	100	<200	9,700	<200	<100	<100	2300	NA	42.41	20.47	21.94
MW-4	06/16/2003	<5,000	370 a	<50	<50	<50	<100	7,300	<100	<100	<100	2100	NA	42.41	20.18	22.23
MW-4	09/18/2003	<2,500	250 a	<25	<25	<25	<50	3,700	<100	<100	<100	910	NA	42.41	21.13	21.28
MW-4	12/02/2003	<2,000	540 a	<20	<20	<20	<40	3,000	<80	<80	<80	420	NA	42.41	21.22	21.19
MW-4	03/01/2004	<2,500	320 a	<25	<25	<25	<50	3,700	<100	<100	<100	540	NA	42.41	18.35	24.06
MW-4	06/08/2004	<1,000	250 a	<10	<10	<10	<20	2,700	<40	<40	<40	180	NA	42.41	21.34	21.07
MW-4	09/24/2004	<500	280 a	<5.0	<5.0	<5.0	<10	1,100	<20	<20	<20	930	NA	42.41	22.89	19.52
MW-4	12/23/2004	1,200	450 b	120	<5.0	<5.0	<10	710	<20	<20	<20	1,800	NA	42.41	21.44	20.97
MW-4	03/02/2005	990	190 a	110	39	<5.0	29	1,000	<20	<20	<20	1,000	NA	42.41	16.08	26.33
MW-4	06/17/2005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	42.41	17.76	24.65
MW-4	06/29/2005	670 e	390 a	<5.0	<5.0	<5.0	<10	290	<20	<20	<20	2,100	NA	42.41	17.80	24.61
MW-4	09/01/2005	<500	170 a	<5.0	<5.0	<5.0	<10	17	<20	<20	<20	1,900	NA	42.41	19.58	22.83
MW-4	12/08/2005	<500	200 g	<5.0	<5.0	<5.0	<5.0	410	NA	NA	NA	1,200	NA	42.41	20.79	21.62
MW-4	03/16/2006	744	523 h	<0.500	<0.500	<0.500	<0.500	190	NA	NA	NA NA	635	NA	42.41	15.85	26.56
MW-4	06/01/2006	<50.0	652 h	<0.500	<0.500	<0.500	<0.500	50.8	NA	NA	NA	588	NA	42.41	15.63	26.78

Well ID	Date	ТРРН	TEPH	В	Т	E	х	MTBE 8260	DIPE	ЕТВЕ	TAME	ТВА	Ethanol	тос	Depth to Water	GW Elevation
		(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(MSL)	(ft.)	(MSL)
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MW-4	09/26/2006	160	532 h	<0.50	<0.50	<0.50	<1.0	1.5	<1.0	<1.0	<1.0	480	<150 k,l	42.41	19.42	22.99
MW-4	12/08/2006	250	170 h	<0.50	<0.50	<0.50	<1.0	50	NA	NA	NA	600	NA	42.41	20.14	22.27
MW-4	03/12/2007	170	99 h	<0.50	<0.50	<0.50	<1.0	45	NA	NA	NA	520	NA	42.41	18.44	23.97
MW-5	11/23/2004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	40.66	21.05	19.61
MW-5	12/23/2004	<50	<50	<0.50	<0.50	<0.50	<1.0	3.3	<2.0	<2.0	<2.0	<5.0	NA	40.66	20.65	20.01
MW-5	03/02/2005	<50	<50	<0.50	<0.50	<0.50	<1.0	1.3	<2.0	<2.0	<2.0	<5.0	NA	40.66	15.75	24.91
MW-5	06/17/2005	<50	<50	<0.50	<0.50	<0.50	<1.0	1.6	<2.0	<2.0	<2.0	<5.0	NA	40.66	16.35	24.31
MW-5	09/01/2005	<50	140 a,f	<0.50	<0.50	<0.50	<1.0	1.4	<2.0	<2.0	<2.0	<5.0	NA	40.66	18.41	22.25
MW-5	12/08/2005	<50	110 g	<0.50	<0.50	<0.50	<0.50	1.3	NA	NA	NA	<5.0	NA	40.66	19.66	21.00
MW-5	03/16/2006	<50.0	<100 h	<0.500	<0.500	<0.500	<0.500	1.37	NA	NA	NA	<10.0	NA	40.66	14.79	25.87
MW-5	06/01/2006	<50.0	<49.5 h	<0.500	<0.500	<0.500	<0.500	1.42	NA	NA	NA	51.8	NA	40.66	14.39	26.27
MW-5	09/26/2006	50	<47.6 h	<0.50	<0.50	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<150 k,l	40.66	18.12	22.54
MW-5	12/08/2006	<50	<56 h,n	<0.50	<0.50	<0.50	<1.0	0.88	NA	NA	NA	<5.0	NA	40.66	18.81	21.85
MW-5	03/12/2007	<50	<50 h	<0.50	<0.50	<0.50	<1.0	0.78	NA	NA	NA	5.3	NA	40.66	16.39	24.27
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MVV-6	11/23/2004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	39.43	20.15	19.28
MW-6	12/23/2004	<250	110 a	<2.5	<2.5	<2.5	<5.0	390	<10	<10	<10	<25	NA	39.43	19.50	19.93
MW-6	03/02/2005	<250	<50	<2.5	<2.5	<2.5	<5.0	400	<10	<10	<10	<25	NA	39.23 c	14.72	24.51
MW-6	06/17/2005	<50	<50	<0.50	<0.50	<0.50	<1.0	250	<2.0	<2.0	<2.0	28	NA	39.23	15.27	23.96
MW-6	09/01/2005	<250	<50	<2.5	<2.5	<2.5	<5.0	500	<10	<10	<10	<25	NA	39.23	17.22	22.01
MW-6	12/08/2005	<500	<47	<5.0	<5.0	<5.0	<5.0	240	NA	NA	NA	<50	NA	39.23	18.43	20.80
MW-6	03/16/2006	862	<100 h	<0.500	<0.500	<0.500	<0.500	221	NA	NA	NA	<10.0	NA	39.23	12.66	26.57
MW-6	06/01/2006	<50.0	<49.5 h	<0.500	<0.500	<0.500	<0.500	102	NA	NA	NA	<10.0	NA	39.23	13.58	25.65
MW-6	09/26/2006	170	<48.1 h	<1.0	<1.0	<1.0	<2.0	150	<2.0	<2.0	<2.0	<20	<300 k,l	39.23	16.96	22.27
MW-6	12/08/2006	260	<56 h,n	<0.50	<0.50	<0.50	<1.0	170	NA	NA	NA NA	<5.0	NA	39.23	17.78	21.45

								MTBE							Depth to	GW
Well ID	Date	TPPH	TEPH	В	T	E	Х	8260	DIPE	ETBE	TAME	TBA	Ethanol	TOC	Water	Elevation
		(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(MSL)	(ft.)	(MSL)
															,	
MW-6	03/12/2007	150	<50 h	<0.50	<0.50	<0.50	<1.0	130	NA	NA	NA	16	NA	39.23	15.25	23.98
MW-7	11/23/2004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	39.50	19.98	19.52
MVV-7	12/23/2004	<250	<50	<2.5	<2.5	<2.5	<5.0	690	<10	<10	<10	<25	NA	39.50	19.55	19.95
MW-7	03/02/2005	<250	<50	<2.5	<2.5	<2.5	<5.0	590	<10	<10	<10	<25	NA	39.50	15.35	24.15
MW-7	06/17/2005	<50	<50	<0.50	<0.50	<0.50	<1.0	330	<2.0	<2.0	<2.0	34	NA	39.50	15.16	24.34
MW-7	09/01/2005	<500	<50	<5.0	<5.0	<5.0	<10	430	<20	<20	<20	<50	NA	39.50	17.45	22.05
MW-7	12/08/2005	<500	<48	<5.0	<5.0	<5.0	<5.0	380	NA	NA	NA	<50	NA	39.50	18.66	20.84
MW-7	03/16/2006	881	<100 h	<0.500	<0.500	<0.500	<0.500	396	NA	NA	NA	<10.0	NA	39.50	12.90	26.60
MW-7	06/01/2006	<50.0	<49.5 h	<0.500	<0.500	<0.500	<0.500	192	NA	NA	NA	<10.0	NA	39.50	13.91	25.59
MW-7	09/26/2006	270	<48.5 h	<1.0	<1.0	<1.0	<2.0	290	<2.0	<2.0	<2.0	35	<300 k,l	39.50	17.17	22.33
MVV-7	12/08/2006	480	65 h	<0.50	<0.50	<0.50	<1.0	360	NA	NA	NA	<5.0	NA	39.50	17.88	21.62
MW-7	03/12/2007	<500	<50 h	<5.0	<5.0	<5.0	<10	370	NA	NA	NA	<50	NA	39.50	15.36	24.14
MW-8	11/23/2004	NA	NA	NA	NA	NA	NA	NA	NΑ	NA	NA	NA	NA	39.92	20.42	19.50
MW-8	12/23/2004	<250	<50	<2.5	<2.5	<2.5	<5.0	530	<10	<10	<10	<25	NA	39.92	19.98	19.94
8-WM	03/02/2005	<50 d	<50	<0.50	<0.50	<0.50	<1.0	130	<2.0	<2.0	<2.0	<5.0	NA	39.92	14.43	25.49
MW-8	06/17/2005	<50	<50	<0.50	<0.50	<0.50	<1.0	50	<2.0	<2.0	<2.0	6.5	NA	39.92	15.92	24.00
MW-8	09/01/2005	<50	<50	<0.50	<0.50	<0.50	<1.0	34	<2.0	<2.0	<2.0	<5.0	NA	39.92	17.85	22.07
MW-8	12/08/2005	<50	97 g	<0.50	<0.50	<0.50	<0.50	63	NA	NA	NA	5.6	NA	39.92	19.08	20.84
8-WM	03/16/2006	<50.0	<100 h	<0.500	<0.500	<0.500	<0.500	15.0	NΑ	NA	NA	<10.0	NA	39.92	13.13	26.79
MW-8	06/01/2006	<50.0	<46.9 h	<0.500	<0.500	<0.500	<0.500	15.2	NA	NA	NA	<10.0	NA	39.92	14.20	25.72
MW-8	09/26/2006	<50	<48.5 h	<0.50	<0.50	<0.50	<1.0	20	<1.0	<1.0	<1.0	<10	<150 k,l	39.92	17.57	22.35
8-WM	12/08/2006	99	51 h	<0.50	<0.50	<0.50	<1.0	-56	NA	NA	NA	<5.0	NA	39.92	18.31	21.61
8-WM	03/12/2007	<50	<50 h	<0.50	<0.50	<0.50	<1.0	40	NA	NA	NA	<5.0	NA	39.92	15.83	24.09

								MTBE							Depth to	GW
Well ID	Date	TPPH	TEPH	В	Т	E	X	8260	DIPE	ETBE	TAME	TBA	Ethanol	TOC	Water	Elevation
		(ug/L)	(MSL)	(ft.)	(MSL)											

Abbreviations:

TPPH = Total petroleum hydrocarbons as gasoline by EPA Method 8260B.

TEPH = Total petroleum hydrocarbons as diesel by modified EPA Method 8015.

BTEX = Benzene, toluene, ethylbenzene, xylenes by EPA Method 8260B.

MTBE = Methyl tertiary butyl ether

DIPE = Di-isopropyl ether, analyzed by EPA Method 8260B

ETBE = Ethyl tertiary butyl ether, analyzed by EPA Method 8260B

TAME = Tertiary amyl methyl ether, analyzed by EPA Method 8260B

TBA = Tertiary Butanol or Tertiary butyl alcohol, analyzed by EPA Method 8260B

TOC = Top of Casing Elevation

GW = Groundwater

ug/L = Parts per billion

MSL = Mean sea level

ft. = Feet

<n = Below detection limit

NA = Not applicable

																1
1								MTBE							Depth to	GW
Well ID	Date	TPPH	TFPH	В	Т	E	х	8260	DIPE	ETBE	TAME	TBA	Ethanol	TOC	Water	Elevation
	Dute	(ug/L)	(MSL)	(ft.)	(MSL)											

Notes:

- a = Hydrocarbon reported does not match the laboratory standard.
- b = Hydrocarbon reported is in the early Diesel range and does not match the laboratory Diesel standard.
- c = TOC altered -0.20 ft. due to wellhead maintenace on February 16, 2005.
- d = The concentration reported reflect(s) individual or discrete unidentified peaks not matching a typical fuel pattern.
- e = Quantity of unknown hydrocarbon(s) in sample based on gasoline.
- f = Possible septum contamination in the sample. Sample was reanalyzed past hold time with surrogate recoveries within control limits and results of <50ppb.
- g = Hydrocarbon pattern is present in the requested fuel quantitation range but does not resemble the pattern of the requested fuel.
- h = Analyzed with silica gel clean-up.
- i = Ambers were lost in transit to lab no Diesel analysis was performed.
- j = Secondary ion abundances were outside method requirements. Identification based on analytical judgement.
- k = Calibration Verification recovery was above the method control limit for this analyte. Analyte not detected, data not impacted.
- 1 = Laboratory Control Sample recovery was above the method control limits. Analyte not detected, data not impacted.
- m = The MS and/or MSD were above the acceptance limits. See Blank Spike (LCS).
- n = Reporting limit raised due to insufficient sample volume.

Ethanol analyzed by EPA 8260B.

Site surveyed December 11, 2002 by Mid Coast Engineers.

Wells MW-5, MW-6, MW-7, and MW-8 surveyed on November 29, 2004. Survey data provided by Delta Environmental.

