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SOMA
ENVIRONMENTAL ENGINEERING, INC
6620 Owens Drive, Suite A • Pleasanton, CA 94588-3334

September 11, 2007

Mr. Jerry Wickham
Alameda County Health Care Services Agency
Environmental Health Services-Environmental Protection
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502

Subject: **Response to Technical Comments by Alameda County Health Care Services – Environmental Health Services (ACHCS) dated July 18, 2007, for Tony's Express Auto Services, 3609 International Boulevard, Oakland, California, Fuel Leak Case No. RO0000265 and Geotracker Global ID T0600101680**

Dear Mr. Wickham:

Thank you for your letter dated July 18, 2007, which included technical comments regarding the following documents prepared by SOMA Environmental Engineering, Inc. (SOMA) on behalf of Mr. Abolghassem Razi, the owner of Tony's Express Auto Services (Site).

- *Multi-Phase Extraction Pilot Test* dated May 22, 2007,
- *Second Quarter 2007 Groundwater Monitoring and Remediation System Operation Report* dated July 5, 2007, and,
- *Extraction Well Installation Report and Upgrade of the Groundwater Remediation System* dated May 31, 2007.

Presented below is SOMA's response to your comments.

Response to Technical Comments on MPE pilot test

Lateral Extent of Contamination

Chart 1 in Attachment 1 illustrates the concentrations of TPHg detected in groundwater samples collected from monitoring wells MW-1, MW-3, MW-6, MW-7, MW-4R and MW-8 during groundwater monitoring/sampling events conducted at the Site over the period of First Quarter 2001 to Second Quarter 2007. This period of record was chosen because prior to First Quarter 2001 quarterly groundwater sampling of these monitoring wells was conducted infrequently. After First Quarter 2001 quarterly groundwater sampling of these monitoring wells was conducted consistently by SOMA.

The monitoring wells are located hydraulically downgradient of the product dispenser islands and UST cluster on the Site. Over the period of record, concentrations of TPHg detected in groundwater samples collected from monitoring wells MW-1, MW-3 and MW-6 are consistently greater than those TPHg concentrations detected in groundwater samples collected from the remaining monitoring wells. With the exception of occasional concentration spikes detected in groundwater samples collected from monitoring well MW-6 in 2003, 2004 and 2005, and in groundwater samples collected from monitoring well MW-3 in 2001, 2002 and 2004, the concentrations of TPHg detected in groundwater samples collected from well MW-1 are consistently greater than those detected in monitoring wells MW-3 and MW-6.

Additionally, with the exception of concentration spikes detected in groundwater samples collected from monitoring well MW-6 in 2003, 2004 and 2005, the concentrations of TPHg detected in groundwater samples collected from monitoring well MW-3 are consistently greater than those detected in monitoring well MW-6.

Thus, impact to groundwater beneath the Site is greatest in proximity to monitoring wells MW-1 and MW-3, and is comparable to a “halo” of elevated concentrations in proximity to these two monitoring wells relative to impact at the remaining monitoring wells, including monitoring well MW-6.

Although elevated concentrations of dissolved hydrocarbons are present in groundwater beneath the Site hydraulically downgradient of the product dispenser islands and UST cluster, the highest elevated concentrations have consistently been detected in groundwater samples collected from monitoring wells MW-1 and MW-3.

SOMA’s review of the boring logs for MW-1 and MW-3 indicates the presence of a hydrocarbon smear zone (Smear Zone) above, at, and below the capillary fringe. The boring logs for both monitoring wells are included in Attachment 1. The Smear Zone is identified as light gray, gray to blue-green gray staining of soils above, at, and below the capillary fringe, accompanied by light to strong hydrocarbon odor. The thickness of the Smear Zone is approximately 20 feet in both wells. The “halo” of elevated concentrations occurring in groundwater beneath the Site in proximity to monitoring wells MW-1 and MW-3 suggests the Smear Zone at these locations is potentially the source of the elevated concentrations of dissolved-phase hydrocarbons in groundwater samples collected from these two wells. Based on the presence of a Smear Zone at groundwater monitoring wells MW-1 and MW-3, in addition to the potential that the Smear Zone is actively leaching dissolved-phase hydrocarbons to groundwater at these locations, SOMA proposes conducting MPE pilot testing to determine the feasibility of remediating the Smear Zone adjacent to the well screens in groundwater monitoring wells MW-1 and MW-3 using MPE methods and techniques.

Historical Soil Sampling Results and Water Levels

TPHg concentrations detected in soil samples collected by others at the capillary fringe in the borings for both monitoring wells MW-1 and MW-3 cannot be considered representative of the entire thickness of the Smear Zone. Further, leaching of dissolved-phase hydrocarbons to groundwater is not limited to the capillary fringe, but occurs along the entire thickness of the Smear Zone.

Based on the soil lithology of the uppermost aquifer beneath the Site as described on the boring logs for both monitoring wells (Attachment 1), and SOMA's previous experience conducting MPE pilot tests at other sites with aquifers exhibiting similar soil lithology, SOMA anticipates complete dewatering of both monitoring wells will occur quickly during the early portion of the MPE pilot test. Although groundwater will continue to enter the monitoring wells during the course of the pilot test, the rate of recharge will be much less than the pilot test extraction rate, resulting in the achievement of steady-state drawdown conditions, dewatering of the Smear Zone, and removal of light non-aqueous phase liquids (LNAPL) from the dewatered Smear Zone by vacuum-enhanced volatilization.

Silty Clay Soils

The results of SVE and/or air sparging pilot tests are not applicable to determine the effectiveness of MPE. Determination of whether MPE will be successful or not relies solely on conducting an MPE pilot test.

The results of SVE pilot testing are not applicable to determining MPE feasibility. SVE is utilized to extract volatile hydrocarbons as soil vapor from the vadose zone. SVE pilot tests are conducted to determine the volume rate of advected air flow needed to remove volatile hydrocarbons as soil vapor within a volume of impacted vadose zone. This is achieved by determining the Radius of Influence (ROI) which defines the lateral extent of advected flow generated by the SVE pilot test, and is not a measure of the capability of dewatering the Smear Zone by MPE, which is fundamental for application of MPE.

Similarly, the results of air sparging pilot testing are not applicable to determine MPE feasibility because air sparging involves injection of air under pressure and not extracting groundwater or volatile hydrocarbons as soil vapor. Air sparge pilot tests are conducted to determine the pressure and volume rate of flow needed to inject air into the aquifer to strip volatile dissolved-phase hydrocarbons from groundwater. The stripped hydrocarbons then migrate upward through the water column to the vadose zone for removal by SVE. The volume rate of air flow needed is determined by injecting air under pressure into the aquifer and measuring volatile hydrocarbon concentrations at monitoring points screened in the vadose zone, or at monitoring wells screened across the vadose zone. The lateral extent of injected air flow, or ROI, is determined by the detection of volatile hydrocarbon emissions at the monitoring points. The ROI determined is not a measure of the capability of dewatering the Smear Zone by MPE, which is fundamental for application of MPE.

SOMA is presently conducting MPE remediation at a site administered by the RWQCB-Central Valley Region in Contra Costa County exhibiting similar soil profiles. In addition, SOMA has conducted MPE pilot tests at sites that exhibit similar soil profiles in Alameda County administered by the ACEHS, and in Contra Costa County administered by the RWQCB-San Francisco Bay Region, with results indicating MPE is feasible.

Effects of Tank Pit Backfill

The boring logs for monitoring wells MW-1 and MW-3 are included in Attachment 1. Both wells were installed in August 1993, which postdates the date of the report referenced in your comments (July 1993). Therefore installation of monitoring wells MW-1 and MW-3 followed removal of the USTs. The boring logs for both monitoring wells describe silty clay and not imported fill material encountered to total depth.

It is likely the backfill material is more granular than the surrounding indigenous silty clay soil profile. It is possible that dewatering during the pilot test could be prolonged due to delayed draining of groundwater from the assumed more granular and permeable backfill material to the surrounding finer-grained less permeable silty clay soil. Once dewatering is effected it is possible short-circuiting by the more granular and permeable backfill material may occur as indicated by high air flow rates and low operating vacuums. This would result in lower hydrocarbon mass recovery values. However, if hydrocarbon mass recovery during the pilot test remains constant despite higher air flow rates and low operating vacuums then short-circuiting would not be an issue. To evaluate these multiple possibilities MPE pilot testing should be conducted.

Smear Zone Thickness

A Smear Zone is developed as LNAPL are released to the water table, spread laterally as a non-wetting phase in soils below the water table, and are distributed vertically through the upper aquifer during seasonal water table fluctuations. As smearing continues the LNAPL become trapped as discontinuous ganglia within soil pores of the upper aquifer. Thus, the Smear Zone is an area of intimate contact between LNAPL and groundwater, representing a long-term source for dissolved-phase hydrocarbons in the groundwater.

Chart 2 in Attachment 1 illustrates groundwater elevations measured in monitoring wells MW-1 and MW-3 during groundwater monitoring/sampling events conducted at the Site over the period Fourth Quarter 1994 to Second Quarter 2007. Groundwater elevations measured in monitoring well MW-1 have ranged from 15.50 feet below grade to 7.12 feet below grade, a difference of 8.38 feet. Groundwater elevations measured in monitoring well MW-3 have ranged from 15.36 feet below grade to 6.74 feet below grade, a difference of 8.62 feet.

The differences in groundwater elevations suggest the Smear Zone would be expected to be no more than approximately 9 feet thick at both monitoring well locations. However, identification of Smear Zone characteristics were observed and recorded on the boring logs for both monitoring wells, extending from approximately 10 feet below grade to total depth in each well (30 feet below grade). A possible explanation for the presence of the Smear Zone characteristics observed below 10 feet below grade is the potential that groundwater elevations prior to 1994 fluctuated more substantially than those observed after 1994. It is also possible that a spill event occurred at the location of the former USTs prior to 1993 (date that the former USTs were removed from the Site) resulting in fuel hydrocarbons directly entering the soil profile below groundwater.

Irregardless of the mechanism for the development of the Smear Zone at both monitoring wells MW-1 and MW-3, impact to groundwater beneath the Site is greatest in proximity to monitoring wells MW-1 and MW-3, and is analogous to a “halo” of elevated concentrations in proximity to these two monitoring wells, suggesting the Smear Zone at these locations is potentially the source of the dissolved-phase hydrocarbons in groundwater samples collected from these wells. Based on the presence of a Smear Zone at groundwater monitoring wells MW-1 and MW-3, in addition to the potential that the Smear Zone is actively leaching dissolved-phase hydrocarbons to groundwater at these locations, SOMA proposes conducting MPE pilot testing to determine the feasibility of remediating the Smear Zone adjacent to the well screens in groundwater monitoring wells MW-1 and MW-3 using MPE methods and techniques.

Hydrogeologic Cross-Sections

Attachment 2 includes three hydrogeologic cross-sections of the Site. Figure 1 in Attachment 2 illustrates the locations of the three cross-sections. Figure 2 illustrates hydrogeologic cross-section A-A’ which extends hydraulically downgradient beneath the west portion of the Site. Figure 3 illustrates hydrogeologic cross-section B-B’ which extends hydraulically cross-gradient beneath the Site. Figure 4 illustrates cross-section C-C’ which extends hydraulically downgradient beneath the west portion of the Site.

The soil analytical data shown on the cross-sections date from 1993 and 1995. Based on the soil analytical data, and the Smear Zone characteristics observed in the soil and monitoring well borings during drilling in 1993 and 1995 (discolored soil and moderate to strong hydrocarbon odor), the inferred extent of the Smear Zone beneath the Site is illustrated on the cross-sections. The Smear Zone appears to be more pervasive and thicker beneath the west portion of the Site than the east portion (Figures 2 and 4), and beneath the south portion of the product dispenser islands (Figure 3).

Response to Technical Comments on Second quarter 2007 Groundwater Monitoring and Remediation System Operation Report

Performance of the SVE System

In 1993, Soil Tech Engineering, Inc. installed four soil vapor extraction probes along the east and west sides of the product dispenser islands on the Site. The four probes were manifolded to a single extraction line terminating at the northeast corner of the Site’s

Station Building. The locations of the four soil vapor extraction probes (P-1, P-2, P-3 and P-4) are illustrated on Figure 1 in Attachment 2. In July 2000, SOMA installed the existing SVE treatment system, and on July 24, 2000, the SVE system was activated.

The system operated until January 2001, when the system was deactivated due to low soil vapor influent concentrations and rising groundwater levels inundating the extraction probe screens. The system was reactivated in August 2001 and operated until November 2001 when the system was deactivated to repair the extraction blower. The system was reactivated in February 2002 and operated until March 2002 when the system was deactivated due to low soil vapor influent concentrations. The system was reactivated in June 2002 and operated until November 2002 when the system was deactivated due to low soil vapor influent concentrations and rising groundwater levels inundating the extraction probe screens. The system was reactivated in May 2003 and operated until November 2003 when the system was deactivated due to low soil vapor influent concentrations and rising groundwater levels inundating the extraction probe screens. The system was reactivated in April 2004 and operated until October 2004 when the system was deactivated due to low soil vapor influent concentrations and rising groundwater levels inundating the extraction probe screens. The system was reactivated in April 2005 and operated until January 2006 when the system was deactivated due to low soil vapor influent concentrations and rising groundwater levels inundating the extraction probe screens. In November 2005, SOMA installed three soil vapor extraction wells in proximity to the UST cluster and at the northeast corner of the Site’s Station Building. The three extraction wells were joined to the existing SVE extraction manifold. The locations of the three soil vapor extraction wells (SVE-1, SVE-2 and SVE-3) are illustrated on Figure 1 in Attachment 2. The system was reactivated in April 2006 and operated until November 2006 when the system was deactivated due to low soil vapor influent concentrations and rising groundwater levels inundating the extraction probe screens. The system was reactivated in May 2007 and has continued to operate since that time. Over the period of operation from July 2004 to June 2007, approximately 953.09 pounds of fuel hydrocarbons have been removed from the vadose zone by the SVE system.

Chart 3 illustrates operation of the SVE system over the period July 2000 to June 2007. From initial startup in July 2000 to the initial deactivation in March 2002, influent concentrations generally exhibited a decreasing trend, with the exception of concentration spikes over the period August 2001 to February 2002. From June 2002 when the system was reactivated to November 2002 when the system was deactivated, influent concentrations rebounded and subsequently decreased, but were overall generally lower than the influent concentrations before June 2002. The same scenario occurred after system reactivation in May 2003, April 2004 and April 2005. Influent concentrations continued to remain lower than those before June 2002 from May 2003 until the period October – November 2005 when concentration spikes occurred.

Beginning in March 2006 the air sparging system became operational. As a result, influent concentrations for the SVE system increased beginning with the rebound following reactivation in April 2006. However, influent concentrations decreased gradually until deactivation in November 2006, with the exception of two concentration spikes in June and October 2006. Influent concentrations rebounded again at the next reactivation in May 2007 but again have generally decreased since that time.

Between May 2003 to January 2006, influent concentrations for the SVE system were at their lowest (Chart 3), indicating the mass of fuel hydrocarbons available in the vadose zone for volatilization and removal by SVE was exhausted. Thus, removal of soil impact at the Site by SVE can be considered complete, and the SVE system should be deactivated.

However, since April 2006, following activation of the air sparging system in March 2006, the SVE system has removed fuel hydrocarbons as soil vapor in the vadose zone likely volatilized from groundwater by the air sparging system. Although rebound of influent concentrations occurred following reactivation of the SVE system in April 2006, the influent concentrations in the rebound were low and rapidly dissipated over the operating period up to deactivation in November 2006. The influent concentrations in the rebound following reactivation in May 2007 were equally low, and have rapidly dissipated up to June 2007. This suggests that the mass of dissolved-phase hydrocarbons available for volatilization by the air sparging system is limited and may be reaching depletion.

To identify and quantify the composition of soil vapor in the influent to determine continued combined operation of the SVE and air sparging systems, SOMA proposes to collect samples of the influent at the SVE blower, and collect soil vapor samples from the SVE system extraction wellheads. During recent asphalt repaving activities at the Site, all of the extraction wellheads with the exception of extraction wells SVE-1 and SVE-3 were paved over. Thus, collection of soil vapor samples from the extraction wellheads will be limited to these two extraction wells. The analytical results will be compared with the Environmental Screening levels (ESLs) for Indoor Air and Soil Gas for Vapor Intrusion Concerns (February 2005), as established by the Regional Water Quality Control Board – San Francisco Bay, as a basis for justifying continued operation or deactivation of both the SVE and air sparging systems.

Performance of the Air Sparge System

The air sparge system consists of five air sparge points connected by manifold to an air compressor. Air under pressure is delivered to the sparge points to volatilize dissolved-phase hydrocarbons in groundwater. Upon volatilization, or stripping, the volatilized mass migrates upward through the water column to the capillary fringe and diffuses upward through the vadose zone where removal is effected by the SVE system.

Air pressure to each air sparge point is monitored by individual pressure gauges installed in the delivery line from the compressor to the air sparge point. The amount of air pressure to the air sparge points is adjusted at the compressor. The system is operated 15 minutes out of every hour.

Dissolved oxygen measurements collected during quarterly sampling events are conducted during well purging prior to collecting groundwater samples for analyses. To purge efficiently, SOMA uses a submersible pump for well purging. However, purging in this manner results in volatilization of dissolved oxygen from the purge water. As a result, the amount of dissolved oxygen in the purge water is artificially low. Beginning with the Fourth Quarter 2007, SOMA will cease measuring dissolved oxygen in purge water, and begin measuring dissolved oxygen in groundwater bailed from the well following purging and prior to sample collection.

Bioattenuation Study

Beginning with the Fourth Quarter 2007, SOMA will discontinue collection of biodegradation parameters with the exception of dissolved oxygen to monitor effectiveness of the air sparging system.

2001 Increase in Concentrations

In November 2001 a possible release may have occurred at the fuel product dispensers. SOMA is currently evaluating this possibility with Mr. Razi. In January 2002, the fuel product dispensers at the Site were replaced. A possible explanation of the concentration spike is the potential for migration of the possible release to the UST cluster via backfill material surrounding the product lines leading from the USTs to the product dispensers.

Table 1

The necessary corrections to Table 1 have been completed and will appear in the Third Quarter Groundwater Monitoring and Remediation System Operation Report.

Response to Technical Comment on Extraction Well Installation Report

Effectiveness of Groundwater Extraction

Extraction Well EX-1 began operating on April 20, 2007. Based on groundwater elevations collected in the well during the Second Quarter 2007 (May 23, 2007), extraction at well EX-1 has resulted in the development of a groundwater capture zone localized around well EX-1. Figure 5 in Attachment 2 illustrates the capture zone developed around Extraction Well EX-1. The depression developed by well EX-1 augments the existing capture zone established by the French drain.

Should you have any questions or comments about this response to the LOP's comments, please do not hesitate to call Matt Spielmann, Senior Geologist, or me at (925) 734-6400.

Sincerely,

Mansour Sepehr, Ph.D., P.E.
Principal Hydrogeologist

REGISTERED PROFESSIONAL ENGINEER
MANSOUR SEPEHR
No. C042928
Exp. 3-31-08
CIVIL
STATE OF CALIFORNIA

Attachments: Attachment 1

Attachment 2

ATTACHMENT 1

Boring Logs – MW-1 and MW-3
Chart 1 – TPHg in Groundwater Onsite Monitoring Wells
Chart 2 – Groundwater Elevations Monitoring Wells MW-1 and MW-2
Chart 3 – SVE System Influent Concentrations

File No 7-92-514-SA

Logged By Noori Ameli	Exploratory Boring Log	Boring No. B-11/STMW-1
Date Drilled. 8/20/93	Approx. Elevation	Boring Diameter 8-inch

Drilling Method Mobile drill rig B-40L	Sampling Method

Depth, Ft.	Sample No.	Field Test for Total Ionization	Penetration Resistance Blows/Ft.	Unified Soil Classification	DESCRIPTION
					6-inches dark yellowish-brown baserock. Munsell Color: HUE 10YR 3/4
1				CL	Very dark grey silty pea gravelly clay, hard. Munsell Color: HUE 5y 3/1
2					
3					
4					
5	B-11-5			CL	Color changes to dark olive-grey silty clay, stiff. Munsell Color: HUE 5Y 3/2
6				CL	Color changes to olive-grey silty clay, stiff. Munsell Color: HUE 5Y 4/2
7					
8					
9					
10	B-11-10			CL	Olive-grey silty clay, stiff, very light petroleum odor. Munsell Color: HUE 5Y 4/2
11					
12					Mild petroleum odor.
13					
14	B-11-14			CL	Olive-grey silty clay, stiff, strong petroleum odor, damp. Munsell Color: HUE 5Y 4/2
15				CL	Olive-grey silty clay, stiff, strong petroleum odor, moist. Munsell Color: HUE 5Y 4/2
16					▽ First groundwater encountered at 16 feet.

Remarks

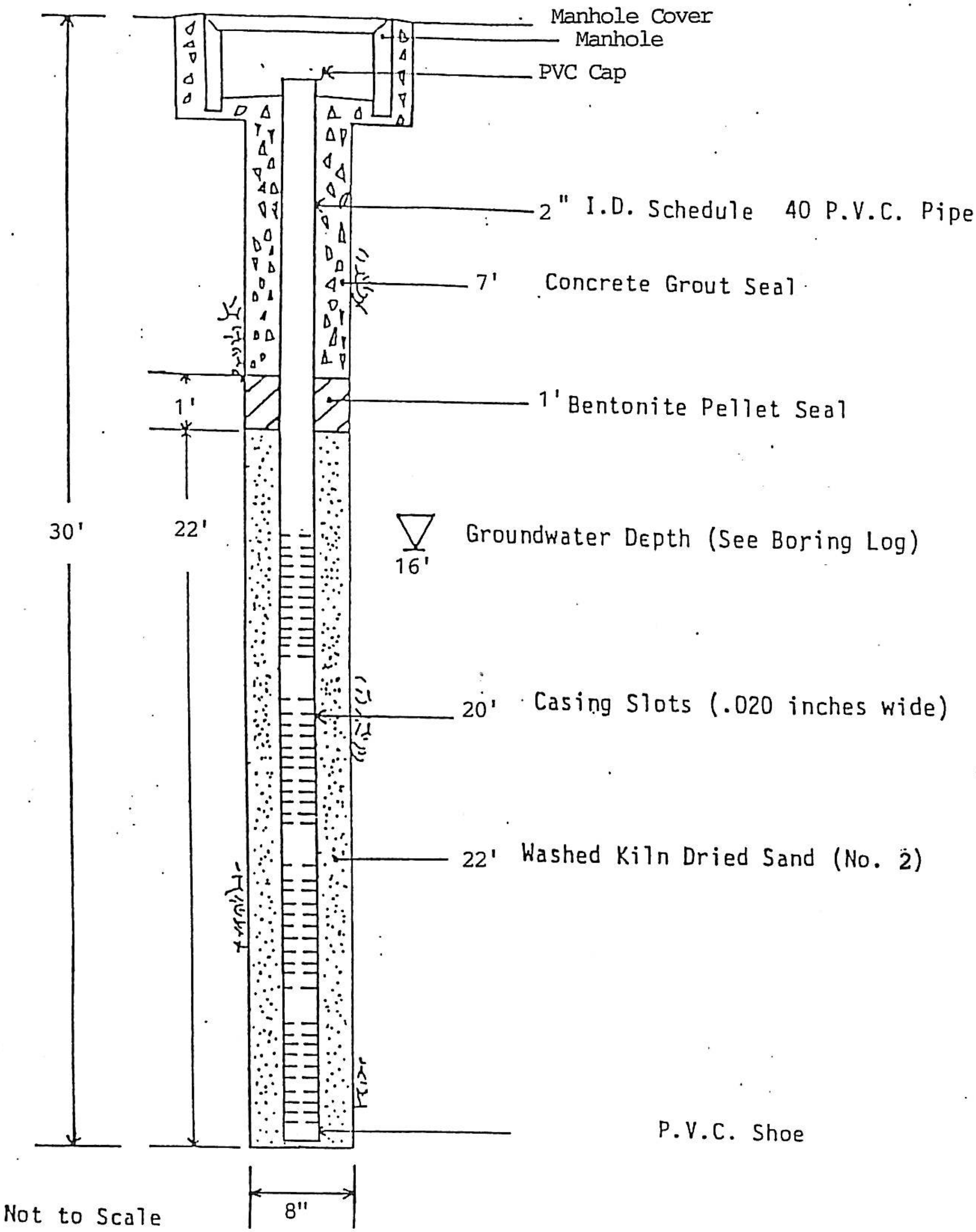
File No. 7-92-514-SA

Logged By: Noori Ameli	Exploratory Boring Log	Boring No. B-11/STMW-1
Date Drilled: 8/23/93	Approx. Elevation	Boring Diameter 8-inch

Drilling Method Mobile drill rig B-40L	Sampling Method

Depth, Ft.	Sample No.	Field Test for Total Ionization	Penetration Resistance Blows/Ft.	Unified Soil Classification	DESCRIPTION
				CL	Olive-grey silty clay, stiff, strong petroleum odor, moist.
17					Munsell Color: HUE 5Y 4/2
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30				CL	Olive-grey silty clay, stiff, strong petroleum odor, wet, yellowish-brown sheen on the water. Munsell Color: HUE 5Y 4/2
31					Boring terminated at 30 feet.
32					

Remarks



STMW-1

Piezometer Schematic

SOIL TECH ENGINEERING, INC.

File No. 7-92-514-SA

Logged By: Noori Ameli	Exploratory Boring Log	Boring No. B-7/STMW-3
Date Drilled: 8/20/93	Approx. Elevation	Boring Diameter 8-inches

Drilling Method Mobile drill rig B-40L	Sampling Method

Depth, Ft.	Sample No.	Field Test for Total Ionization	Penetration Resistance Blows/6"	Unified Soil Classification	DESCRIPTION
					6-inches dark yellowish-brown baserock. Munsell Color: HUE 10YR 3/4
1				CL	Very dark grey silty pea gravelly clay, hard, light sewage odor. Munsell Color: HUE 5Y 3/1
2					
3					
4					
5	B-7-5			CL	Color changes to dark olive-grey silty clay, stiff. Munsell Color: HUE 5Y 3/2
6					
7					
8					
9					
10	B-7-10			CL	Color gets lighter to olive-grey silty clay, stiff, light petroleum odor. Munsell Color: HUE 5Y 4/2
11					
12					
13					
14	B-7-14			CL	Olive-brown silty clay, stiff, light petroleum odor. Munsell Color: HUE 2.5Y 4/4
15					
16					▽ First groundwater encountered at 16 feet.

Remarks

SOIL TECH ENGINEERING, INC.

File No. 7-92-514-SA

Logged By: Noori Ameli
Date Drilled: 8/23/93

Exploratory Boring Log
Approx. Elevation

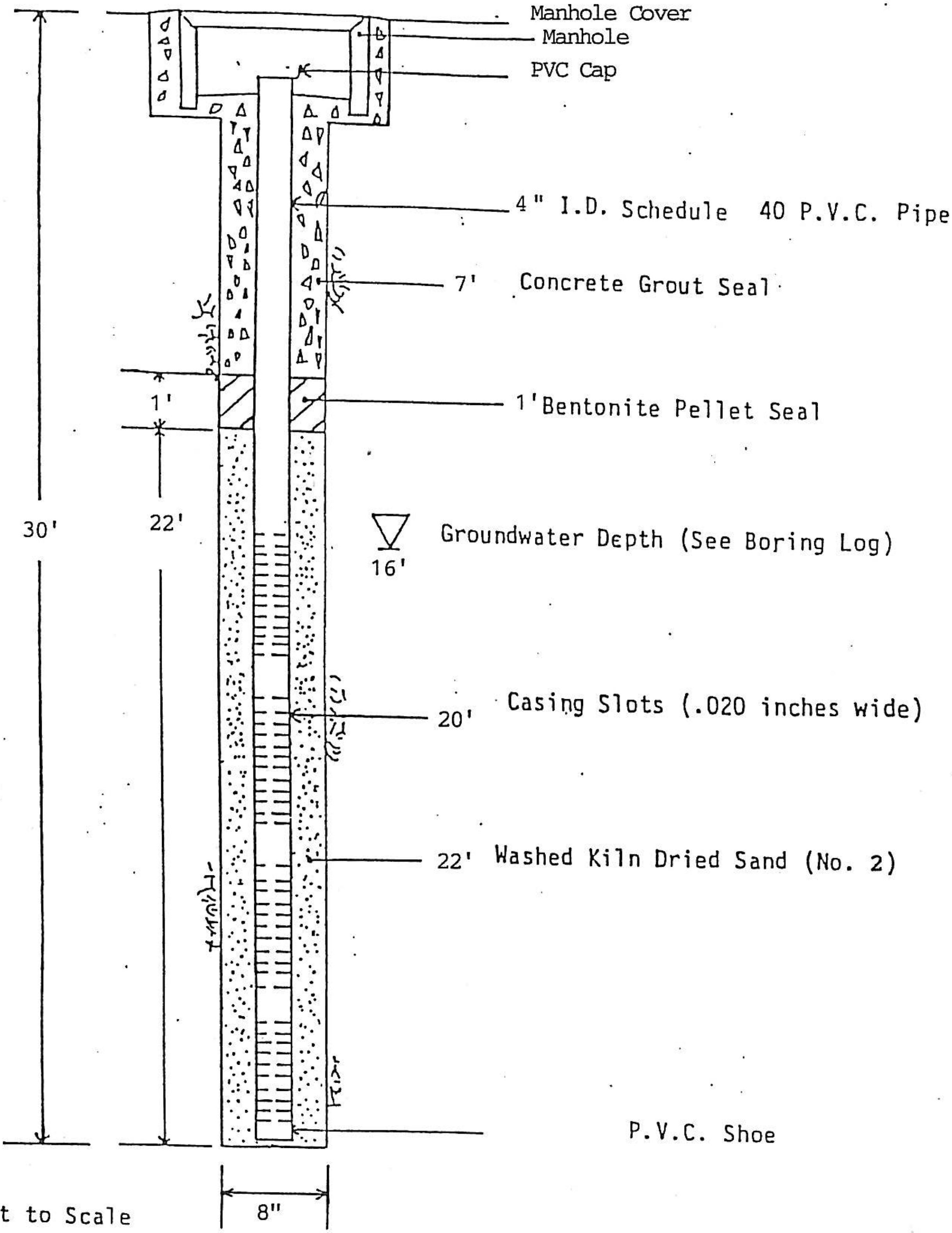
Boring No. B-7/STMW-3
Boring Diameter 8-inch

Drilling Method
Mobile drill rig B-40L

Sampling Method

Depth, Ft.	Sample No.	Field Test for Total Ionization	Penetration Resistance Blows/Ft.	Unified Soil Classification	DESCRIPTION
17				CL	Olive-brown silty clay, stiff, light petroleum odor. Munsell Color: HUE 2.5Y 4/4
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30				CL	Olive-brown silty clay, stiff, strong petroleum odor, wet, yellowish sheen on the water. Munsell Color: HUE 2.5Y 4/4 Boring terminated at 30 feet.
31					
32					

Remarks



Not to Scale

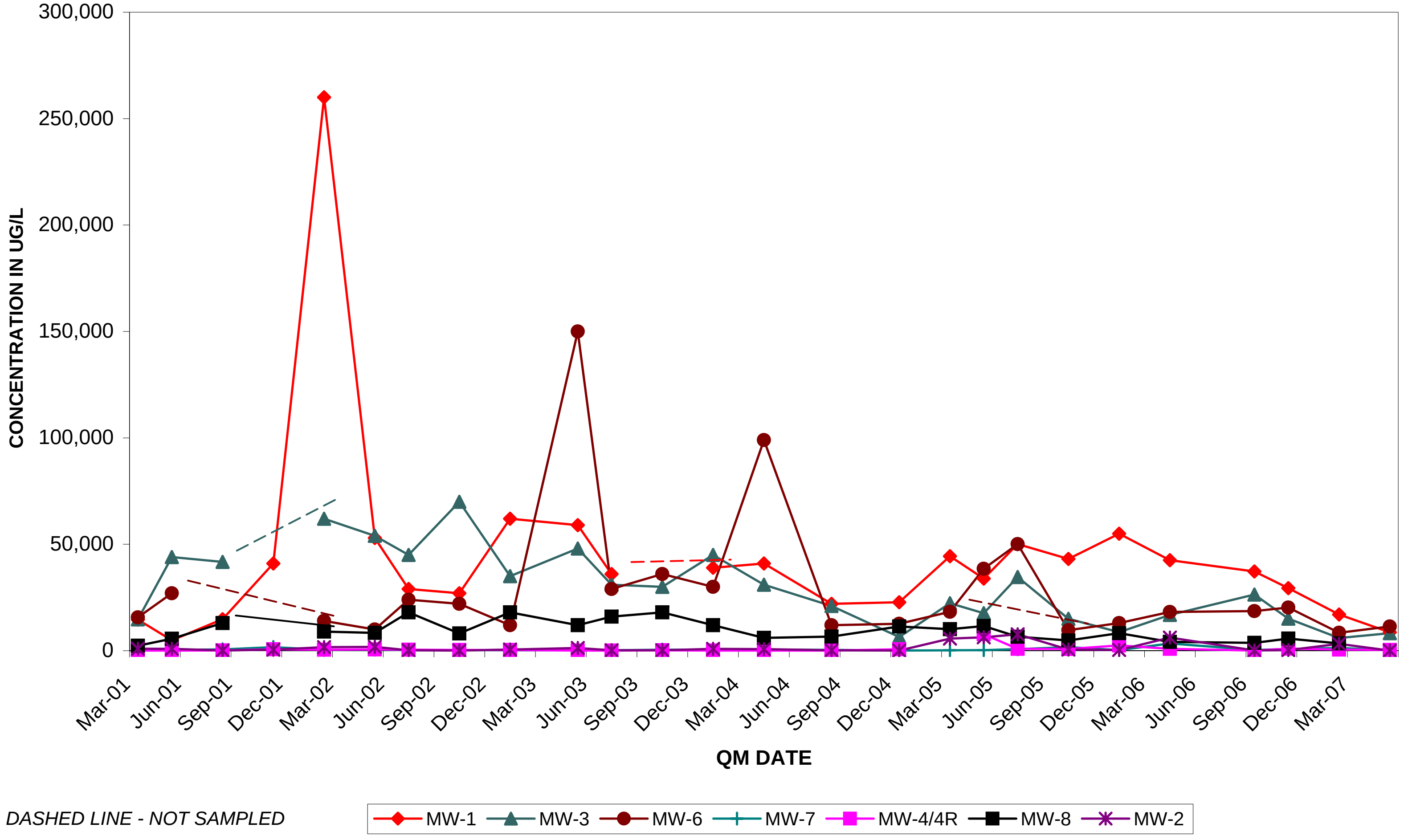
STMW-3

Piezometer Schematic

SOIL TECH ENGINEERING, INC.

CHART 1

3609 INTERNATIONAL BOULEVARD, OAKLAND, CA.
TPHg IN GROUNDWATER
ONSITE MONITORING WELLS
(hydraulically downgradient of product dispenser islands and UST cluster)



DASHED LINE - NOT SAMPLED

CHART 2

3609 INTERNATIONAL BOULEVARD, OAKLAND, CA.
GROUNDWATER ELEVATIONS
MONITORING WELLS MW-1 AND MW-3

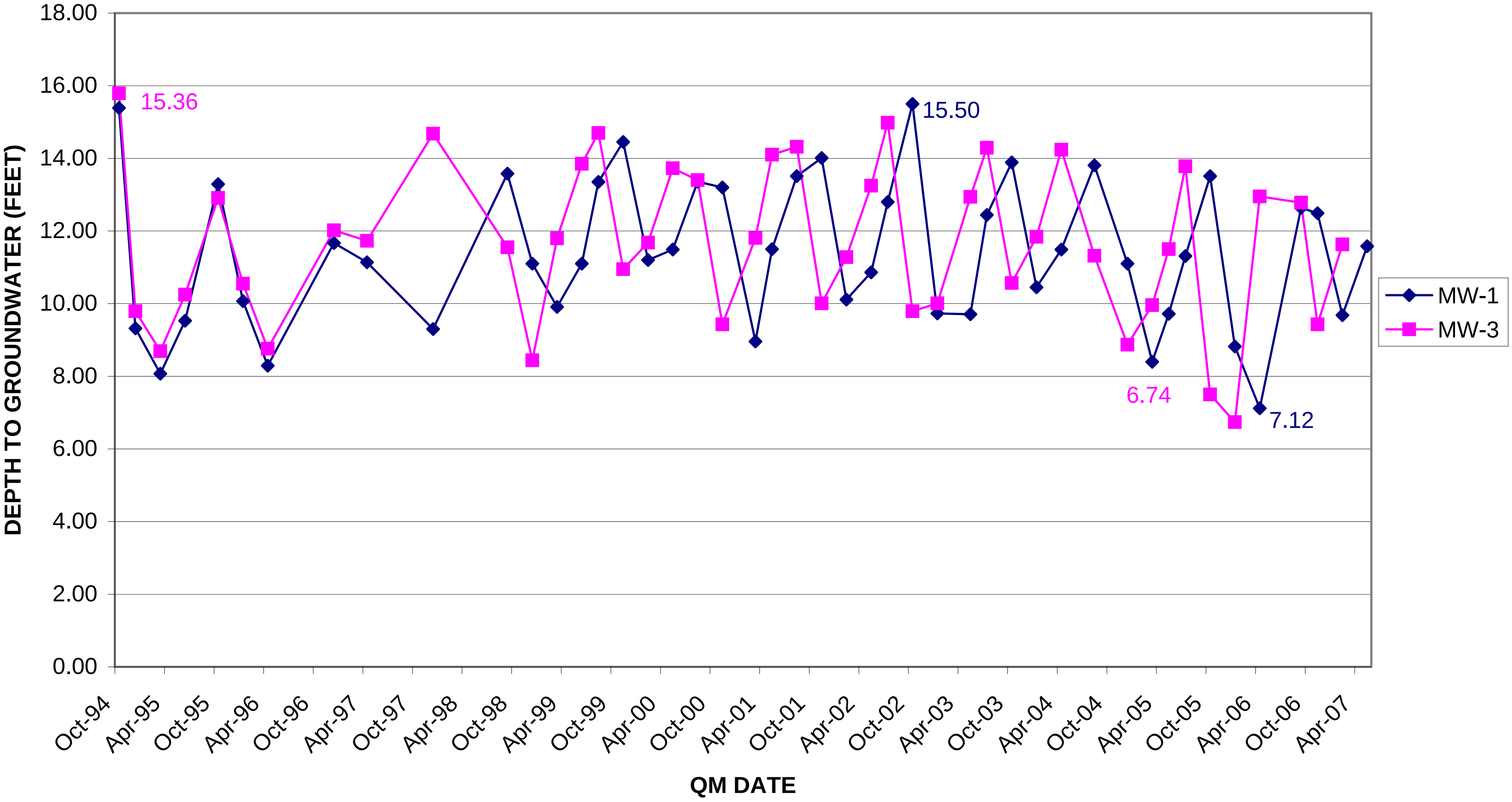
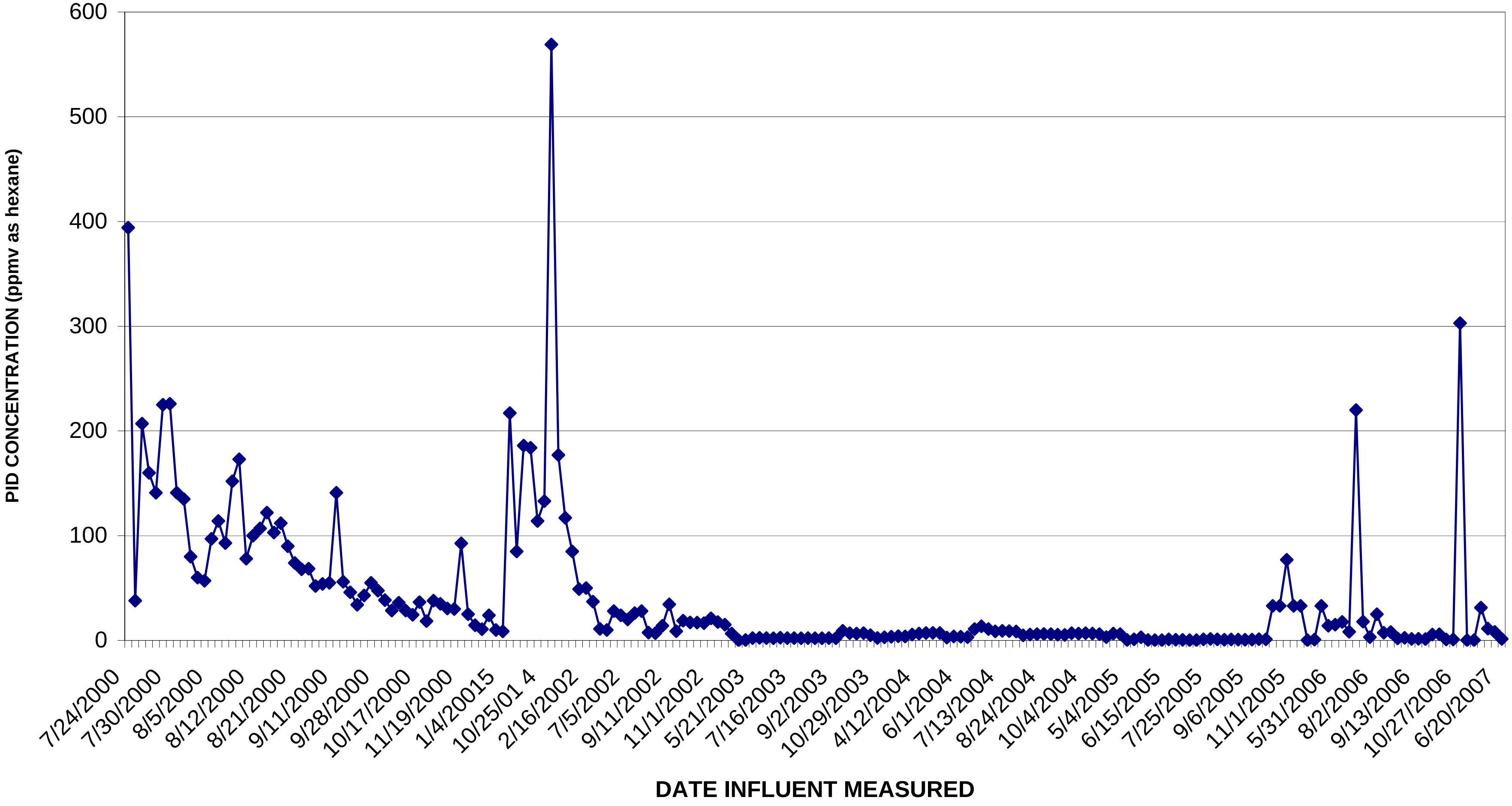


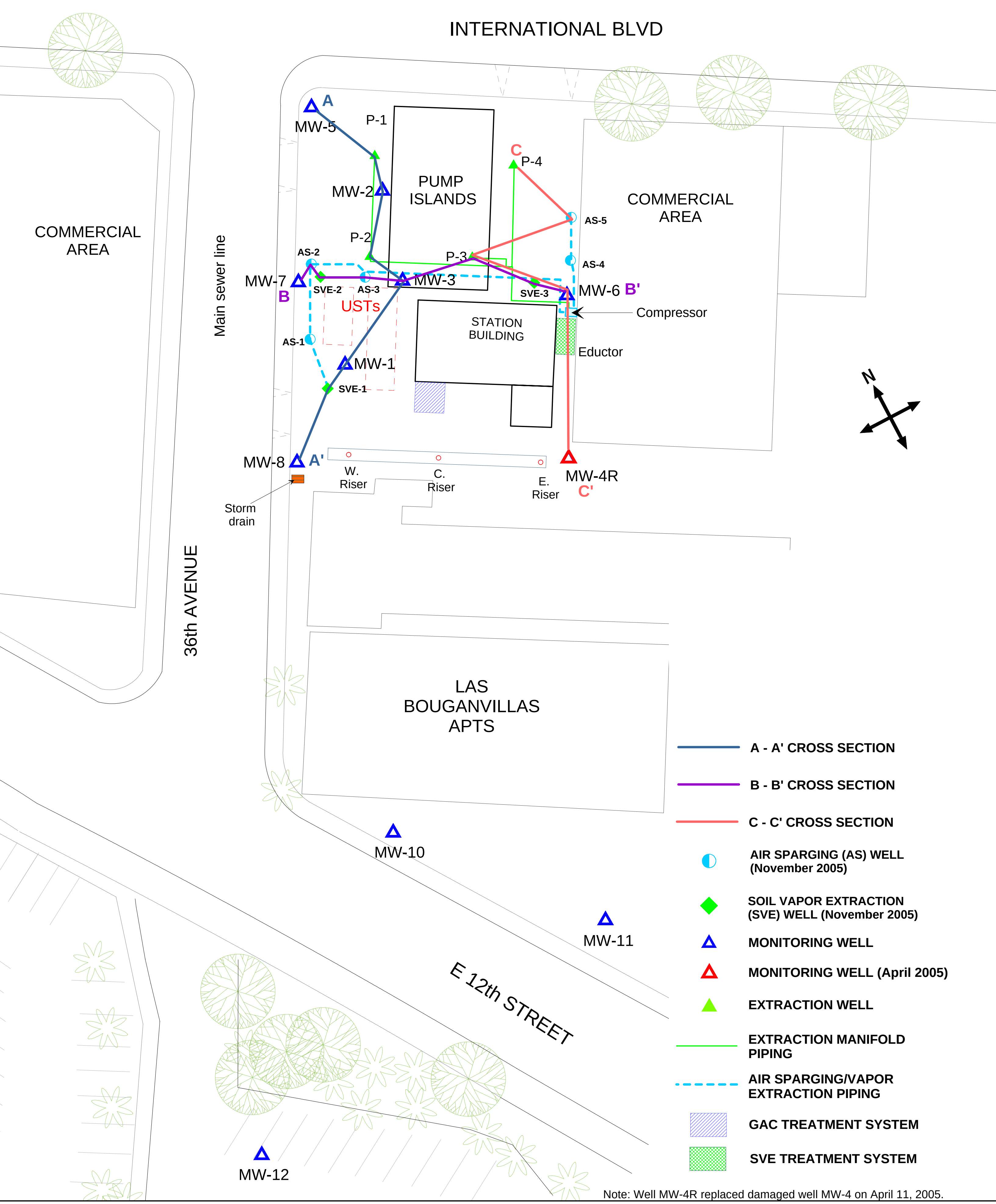
CHART 3

3609 INTERNATIONAL BOULEVARD, OAKLAND, CA.
SVE SYSTEM INFLUENT CONCENTRATIONS
JULY 200 TO JUNE 2007



ATTACHMENT 2

Figure 1 – Hydrogeologic Cross-Section Location Map
Figure 2 – Hydrogeologic Cross-Section A-A’
Figure 3 – Hydrogeologic Cross-Section B-B’
Figure 4 – Hydrogeologic Cross-Section C-C’
Figure 5 – Groundwater Elevation Contour Map in Feet, May 23, 2007



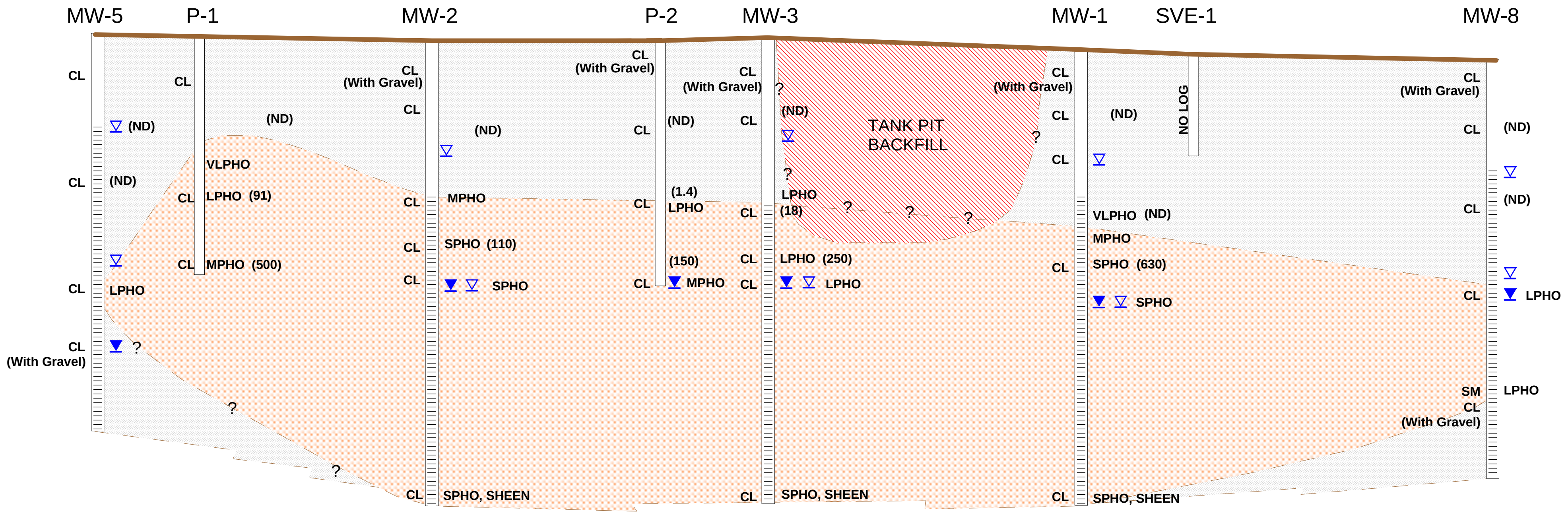
Note: Well MW-4R replaced damaged well MW-4 on April 11, 2005.

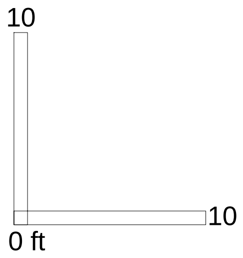
approximate scale in feet

0 20 40

Figure 1: Hydrogeologic Cross-Section Location Map

SOMA ENVIRONMENTAL ENGINEERING, INC.

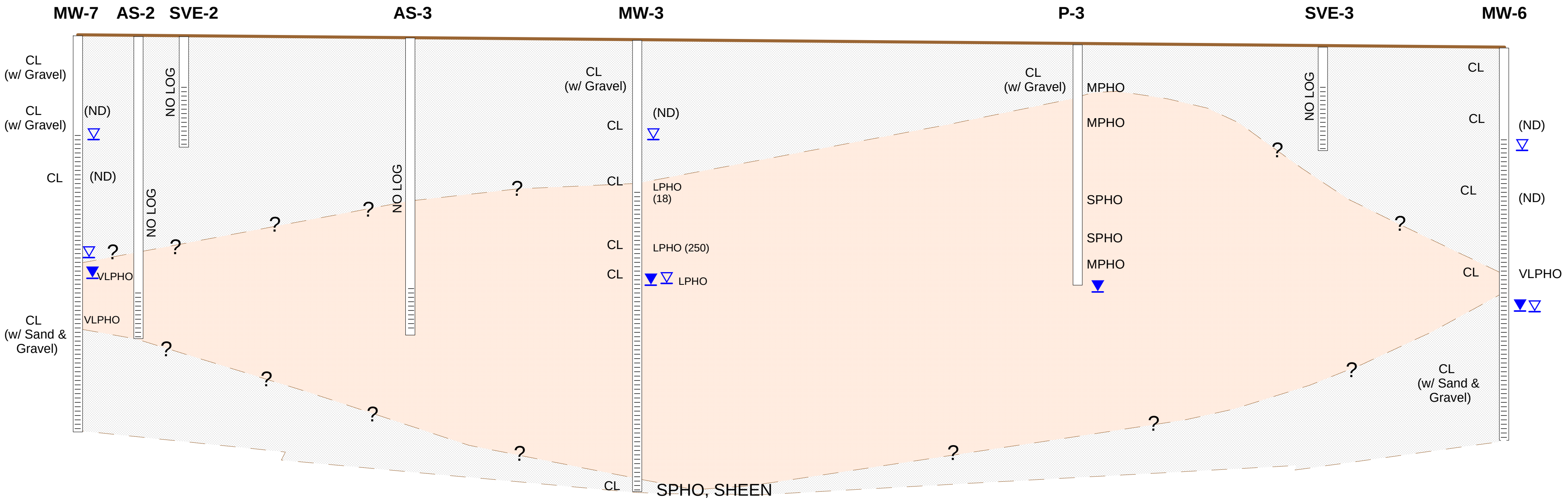


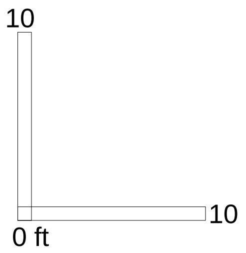


EXPLANATION

VLPHO	Very Light Petroleum Hydrocarbon Odor
LPHO	Light Petroleum Hydrocarbon Odor
MPHO	Moderate Petroleum Hydrocarbon Odor
SPHO	Strong Petroleum Hydrocarbon Odor
(650)	Total Petroleum Hydrocarbons as Gasoline (TPHg) concentration in soil in milligrams per kilogram (mg/kg)
(ND)	Not Analytically Detected
▽	Maximum and minimum groundwater elevations - 4th Quarter 1994 - 2nd Quarter 2007
▼	Groundwater encountered during well borehole drilling
≡	Monitoring well screen interval
?	Inferred contact
●	Approximate Extent of Smear Zone, queried where inferred
▨	Approximate Extent of Tank Pit Backfill, queried where inferred

Figure 2: Cross Section A-A'



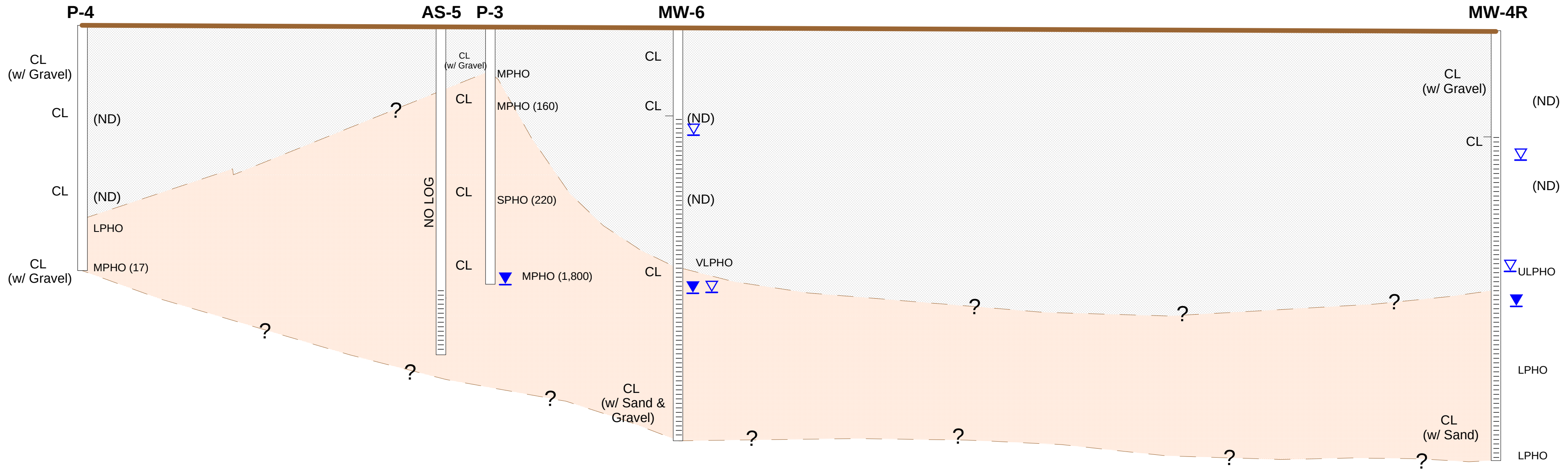


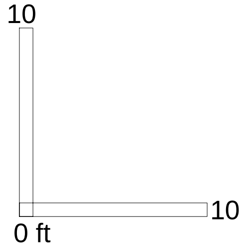
EXPLANATION

VLPHO	Very Light Petroleum Hydrocarbon Odor
LPHO	Light Petroleum Hydrocarbon Odor
MPHO	Moderate Petroleum Hydrocarbon Odor
SPHO	Strong Petroleum Hydrocarbon Odor
(650)	Total Petroleum Hydrocarbons as Gasoline (TPHg) concentration in soil in milligrams per kilogram (mg/kg)
(ND)	Not Analytically Detected
▽	Maximum and minimum groundwater elevations - 4th Quarter 1994 - 2nd Quarter 2007
▼	Groundwater encountered during well borehole drilling
≡	Monitoring well screen interval
?	Inferred contact
⬭	Approximate Extent of Smear Zone, queried where inferred

Figure 3: Cross Section B-B'

ENVIRONMENTAL ENGINEERING, INC.

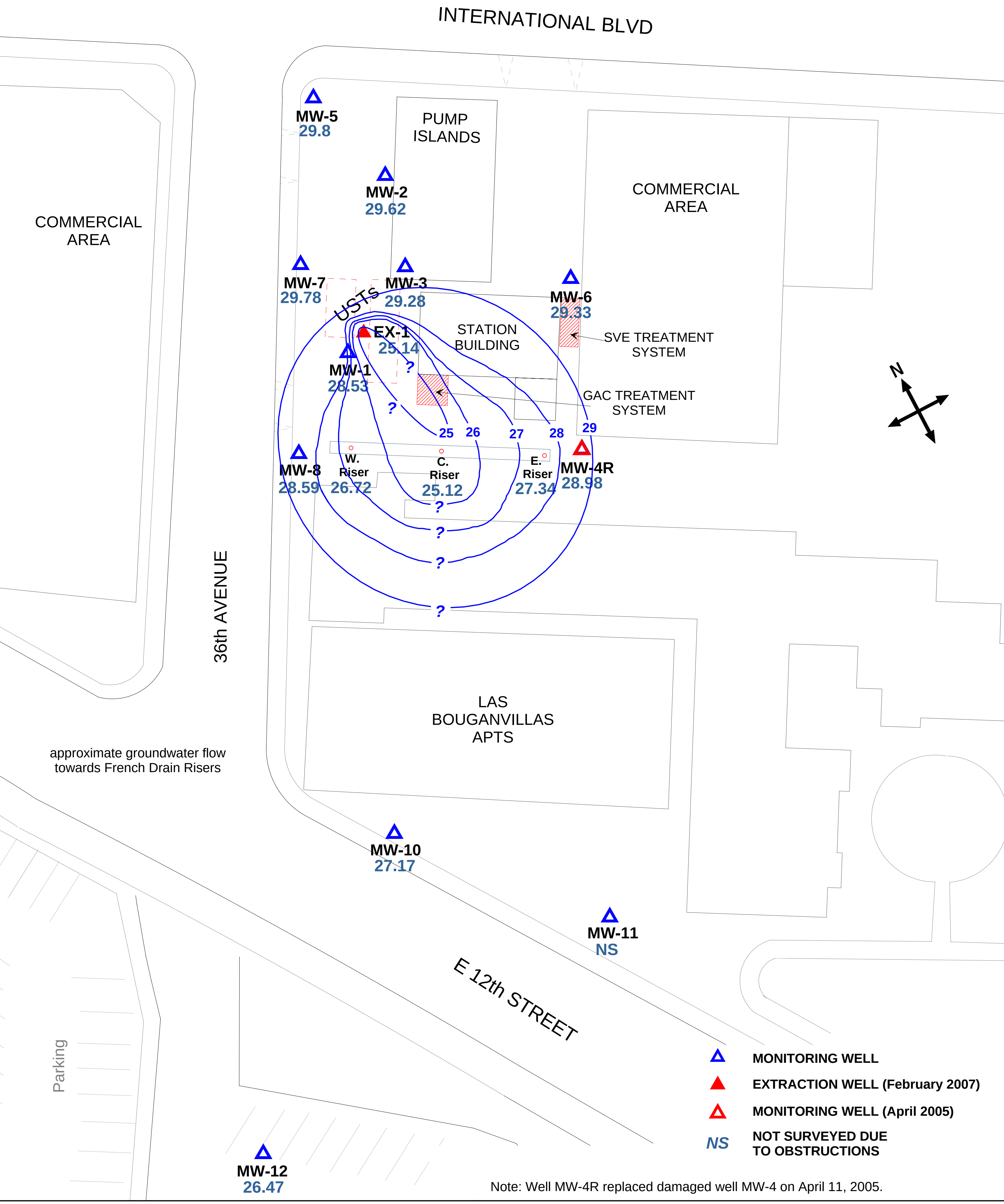




EXPLANATION

VLPHO	Very Light Petroleum Hydrocarbon Odor
LPHO	Light Petroleum Hydrocarbon Odor
MPHO	Moderate Petroleum Hydrocarbon Odor
SPHO	Strong Petroleum Hydrocarbon Odor
(650)	Total Petroleum Hydrocarbons as Gasoline (TPHg) concentration in soil in milligrams per kilogram (mg/kg)
(ND)	Not Analytically Detected
▽	Maximum and minimum groundwater elevations - 4th Quarter 1994 - 2nd Quarter 2007
▼	Groundwater encountered during well borehole drilling
≣	Monitoring well screen interval
?	Inferred contact
⬭	Approximate Extent of Smear Zone, queried where inferred

Figure 4: Cross Section C-C'



Note: Well MW-4R replaced damaged well MW-4 on April 11, 2005.

approximate scale in feet

0 20 40

Figure 5: Groundwater elevation contour map in feet,
May 23, 2007.

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