R0428

CAMBRIA

December 2, 2005

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

Re: **Site Investigation Report**
Shell-branded Service Station
350 Grand Avenue
Oakland, California
SAP Code 135698
Incident #98995755

Dear Mr. Wickham:

Cambria Environmental Technology, Inc. (Cambria) prepared this report on behalf of Equilon Enterprises LLC dba Shell Oil Products US (Shell) to document site investigation activities at the above-referenced site. The purpose of this investigation was to obtain information that will be used to prepare a site conceptual model for the subject site, specifically to assess whether additional investigation, remediation, monitoring, or closure is warranted at this site. Cambria followed the scope of work presented in our December 27, 2004 *Site Investigation Work Plan,* as conditionally approved by the Alameda County Health Care Services Agency (ACHCSA) in a letter dated July 5, 2005. The work was performed in accordance with Regional Water Quality Control Board (RWQCB) and Alameda County Public Works Agency (ACPWA) guidelines.

SITE BACKGROUND

Site Description: The site is an active Shell-branded Service Station, located at the northeast corner of the intersection of Grand Avenue and Perkins Street in Oakland, California (Figure 1). Lakeside Park is located at the southwest corner of this intersection. The area surrounding the site consists of mixed commercial and residential properties. The station layout consists of three gasoline USTs, four fuel dispensers, and a kiosk (Figure 2). Underground utility lines and historical sample locations are depicted on Figure 2, for reference.

Cambria Environmental Technology, Inc.

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PREVIOUS WORK

1990 Soil Borings: On May 11, 1990, GeoStrategies Inc. of Hayward, California (GSI) drilled five exploratory soil borings (S-A through S-E). The highest hydrocarbon concentration in soil was in boring S-A, located at the southwest corner of the property in the vicinity of the gasoline USTs. Constituents detected at a depth of 9.5 feet below grade (fbg) in this area were 2,900 parts per million (ppm) total petroleum hydrocarbons as gasoline (TPHg), 2,400 ppm total petroleum hydrocarbons as diesel (TPHd), and 13 ppm benzene.

1991 Monitoring Well Installation: On January 7, 1991, GSI installed three monitoring wells (S-1, S-2, and S-3) at the site (Figure 2). Groundwater was encountered between 7 and 9 fbg. Well construction details are included on Table 1. The highest hydrocarbon concentrations in soil and groundwater were reported in well S-2, located at the southwest corner of the property in the vicinity of the gasoline USTs. The maximum concentrations in soil at S-2 were 440 ppm TPHg, 360 ppm TPHd, and 4.5 ppm benzene in soil at 8.5 fbg. Groundwater from S-2 contained 2,500 parts per billion (ppb) TPHg, 1,200 ppb TPHd, and 550 ppb benzene in groundwater. No TPHg, TPHd, or benzene was detected in the groundwater sample from well S-1.

1993 Hydropunch Borings: On January 27, 1993, GSI installed three Hydropunch ® borings (HP-1 through HP-3). The highest hydrocarbon concentrations were detected in boring HP-1, located cross gradient of the USTs. Maximum concentrations in that boring were 1,500 ppm TPHg, 18 ppm TPHd, and 0.11 ppm benzene in soil at 6.5 fbg and 22,000 ppb TPHg, 14,000 ppb TPHd, and 2,500 ppb benzene in groundwater. TPHg and benzene were not detected in soil or groundwater samples from borings HP-2 and HP-3, located downgradient of the USTs.

1996 Tank Removal: On April 22, 1996, Weiss Associates of Emeryville, California (WA) observed the removal of three 10,000-gallon gasoline USTs and one 10,000-gallon diesel UST and collected soil samples. Up to 4,800 ppm TPHg, 2,800 ppm TPHd, and 22 ppm benzene were detected in samples collected from the UST excavation, product piping trenches, and beneath the product dispensers (refer to Table 2 for sample IDs and results from April 1996).

1998 Potential Receptor Survey: In April 1998, Cambria identified wells and surface water bodies within a ½-mile radius of the site. As depicted on Figure 1, three water producing wells are located between 2,640 feet and 3,960 feet cross gradient of the site. Lake Merritt is located approximately 900 feet downgradient of the site. The potential receptor survey results were presented to the ACHCSA in Cambria's May 31, 1998 *MTBE Investigation Report.*

1998 Conduit Study: In September 1998, Cambria performed an investigation to locate underground utilities and local drainage systems near the site in an effort to identify potential preferential pathways for contaminant migration. Cambria contacted Underground Service Alert and used a private utility line locator to identify underground utilities. The City of Oakland was contacted to research locations, depths, and construction information of water, storm drain, and sanitary sewer conduits. The *Watershed Map of the Oakland-Berkeley Area* was reviewed to identify buried creeks, underground culverts, storm drains, and engineered channels in the area. The results of the study are depicted graphically on Figure 2.

1998 Geoprobe Well Installation: On April 16, 1998, Cambria installed two ¾-inch diameter pre-packed wells (S-4 and S-5) within the Grand Avenue right-of-way, downgradient of the site. No TPHg, benzene, toluene, ethylbenzene, or xylenes (BTEX), or methyl tertiary butyl ether (MTBE) were detected in soil or groundwater from wells (S-4 and S-5).

1999 Geoprobe Boring Installation: In March 1999, Cambria installed three Geoprobe borings to evaluate whether utility conduit trenches serve as preferential pathways for the migration of impacted groundwater. Two borings (HP-4 and HP-5) were advanced within the sanitary sewer conduit trench along the north sidewalk on Grand Ave, and the third boring (HP-6) was advanced within Perkins Street. The maximum TPHg concentration detected in soil was 408 ppm in soil sample HP-4-10. The maximum MTBE concentration reported (by EPA Method 8020) in soil was 2.52 ppm in soil sample HP-4-10. Grab groundwater samples collected from HP-4 contained 100,000 ppb TPHg, 83,000 ppb TPHd, and 2,000 ppb MTBE (by EPA Method 8020). Grab groundwater samples from HP-5, near the diesel UST complex, contained 160 ppb TPHg. TPHg, BTEX, and MTBE were below detection limits in grab groundwater samples from HP-5 and HP-6.

2001 Dual-Phase Vapor Extraction (DVE) Pilot Test: In June 2001, Cambria conducted an 8-hour DVE pilot test on groundwater monitoring well S-2. DVE is the process of applying high vacuum through an airtight well seal to simultaneously extract soil vapors from the vadose zone and enhance groundwater extraction from the saturated zone. Approximately 50 gallons of groundwater were extracted during the 8-hour test. This data is consistent with the low permeability soil (sandy silt and silt) encountered at this site. Estimated mass removal through groundwater extraction of TPHg, benzene, and MTBE was 0.008, 0.0004, and 0.009 pounds, respectively. Estimated mass removal through vapor extraction of TPHg, benzene, and MTBE was 2.44, 0.002, and 0.005 pounds, respectively. Based on this data, DVE from monitoring well S-2 does not appear to effectively recover hydrocarbons and MTBE from the subsurface.

Groundwater Monitoring: Groundwater monitoring has been conducted at the site since well installation in 1991. Historical onsite maximum concentrations of constituents have been found in well S-2 at up to 120,000 ppb TPHg, 36,000 ppb TPHd, 10,000 ppb benzene, and 30,200 ppb MTBE, by EPA Method 8260. The current onsite maximum concentrations of constituents are also reported in well S-2 at 11,000 ppb TPHg, 3,200 ppb TPHd, 230 ppb benzene, and 1,200 ppb MTBE, by EPA Method 8260. The majority of the TPHd found in well S-2 can be attributed to the heavier portion of weathered gasoline that falls in the TPHd range. Although still elevated, the concentrations in well S-2, and other site wells, are declining. Offsite wells S-4 and S-5 delineate the downgradient extent of the plumes.

July 2002 - Tank Backfill Wells: On July 10, 2002, two UST backfill wells were installed (T-1 and T-2). The installation activities were documented in Cambria's *Tank Backfill Well Installation Report and Investigation Work Plan Addendum* dated September 26, 2002.

2002 Groundwater Remediation: Cambria initiated mobile groundwater extraction (GWE) from the tank backfill wells using a vacuum truck at the site in October 2002 and continued until January 2004. The cumulative estimated volume of water removed from the site through GWE is 54,679 gallons. This volume of water corresponds to the removal of approximately 2.56 pounds of MTBE.

2003 Interim Remediation: In an attempt to reduce the elevated concentrations of contaminants localized at well S-2, Cambria conducted DVE from groundwater monitoring well S-2 between September 16 and September 18, 2003. Approximately 35 gallons of groundwater were extracted during approximately 50 hours of DVE from S-2. Estimated mass removal through groundwater extraction is considered negligible. Cambria also conducted soil vapor extraction (SVE) from tank backfill well T-1 on September 18 in an effort to maximize mass removal and gain additional information about the site. Estimated mass removal from the site through vapor extraction of TPHg, benzene, and MTBE was 0.152 pounds, 0.0009 pounds, and 0.0042 pounds, respectively.

2004 Site Investigation: In correspondence dated March 29, 2002 and July 9, 2002, the ACHCSA requested sampling of groundwater near utility lines and downgradient of the UST complex. Cambria proposed the installation of four borings (HP-7 through HP-10) in the *Tank Backfill Well Installation Report and Investigation Work Plan Addendum* dated September 26, 2002. In Cambria's *Groundwater Monitoring Report – Fourth Quarter 2003,* dated January 26, 2004, Cambria notified the ACHCSA of Shell's intent to implement the work plan addendum, although no written approval had been received. Four soil borings (HP-7 through HP-10) were

drilled for this work and soil and groundwater samples were collected on April 13, 2004. The results of this investigation were reported in Cambria's September 20, 2004 *Site Investigation Report.* Cambria observed that the elevated contaminant concentrations observed near well S-2 and HP-4 are not laterally extensive to the east, the south, the southwest, the west, or the north. Based on the data from this and previous investigative activities, Cambria concluded that the petroleum impacted groundwater is limited in its lateral extent to a relatively short distance from the source area. The borings installed near the subsurface utilities do not suggest that preferential contaminant migration is occurring via the water, electrical or sanitary sewer lines. The groundwater near the storm drain lines located in Perkins Street was not assessed during this investigation.

Through a review of this project history and consideration of additional information that would be necessary to perform an evaluation of closure potential at this site, Cambria proposed additional targeted activities in our December 27, 2004 *Site Investigation Work Plan.* The scope was to assess (1) the extent of residual soil impact in the vicinity of the dispensers and determine whether soil vapor sampling near the kiosk is necessary; (2) the vertical delineation of groundwater impact in the vicinity of well S-2 (source area); (3) the presence of petroleum constituents near the storm drains in Perkins Street, south of Grand Avenue; and (4) whether groundwater near the site is suitable for drinking water.

During the first quarter of 2005 groundwater sampling event, monitoring wells were analyzed for total dissolved solid (TDS) and salinity. TDS ranged from 440 to 1,600 mg/l and Salinity ranged from 0.29 to 0.9 (unitless). Thus, the groundwater cannot be eliminated as a potential drinking water source based on TDS or salinity. These results were presented in Cambria's *Groundwater Monitoring Report – First Quarter 2005* dated May 31, 2005.

In correspondence dated July 5, 2005, the ACHCSA approved the scope of work detailed in the above-referenced work plan. Presented below are the field activities, results, conclusions, and recommendations.

INVESTIGATION RESULTS

Personnel Present: Cambria geologist Scott Lewis directed the field activities, working under the supervision of California Professional Geologist Ana Friel.

Permits: Boring permit No. W2005-0838 was obtained from Alameda County Public Works Agency and boring permits No. X0500991, OB050654, and OB050655 were obtained from the City of Oakland (Appendix A).

Drilling Company: Gregg Drilling and Testing, Inc. of Martinez, California (C57 License No. 485165).

Drilling Dates: September 20 and 21, 2005.

Drilling Methods: Hand-auger and Cone Penetration Test (CPT).

Number of Borings: Five hand-augered soil borings (B-1 through B-5) were drilled and one CPT boring (CPT-1) was advanced. Table 1 presents the boring specifications and the boring locations are shown on Figure 2. The CPT borings were originally proposed in Perkins Street were not installed due to potential conflicts with underground utilities and the uncertainty as to their locations. Instead, one hand augered boring (B-5) was drilled at this location in an attempt to collect the desired data.

Boring Depths: Onsite boring B-2 and offsite boring B-5 were hand augered to 10 feet below grade (fbg). The onsite hand augered borings B-1, B-3, and B-4 met refusal at 6.0, 3.0 and 2.0 fbg, respectively, when each encountered concrete, brick and/or rocks in the subsurface fill material. Onsite boring, CPT-1, was advanced to a depth of approximately 60 fbg.

Soil Sampling Methods: Soil types in the hand-augered borings were logged using the Unified Soil Classification System and Munsell Soil Color Charts. Encountered soil is described on the exploratory boring logs presented in Appendix B. Boring CPT-1 was continuously logged using CPT equipment. Encountered soils are described on the CPT plot presented in Appendix C. Soil samples from borings B-1 through B-5 were collected at select intervals for chemical analysis. No soil samples were collected from boring CPT-1.

Soil Types: Soil types encountered while hand augering generally consisted of fill material, shallow silty gravel with sand (GM) or silty sand with gravel (SM), underlain by interbedded sand with silt (SP-SM), sandy silt (ML), silty sand (SM) or silt (ML) to the total explored depths of the borings (Appendix B). Soil types in CPT-1 were logged as clay and silty clay (CL), and silt and clayey silt (ML) to approximately 16 fbg, underlain by predominantly silt (ML) interbedded with occasional layers of sandy silt (SM) up to 3 feet in thickness.

Groundwater Depths: During drilling activities, perched groundwater was encountered in boring B-1 at 4.5 fbg. In boring CPT-1 groundwater was encountered at approximately 35 fbg. Groundwater was not encountered in any of the other borings.

Groundwater Sampling: Cambria collected discrete groundwater samples from boring CPT-1 at approximately 36 and 58 fbg using depth-discrete Hydropunch™ water sampling equipment. An attempt to collect a groundwater sample from approximately 14-18 fbg was not successful, as no groundwater was recovered. Similarly, at boring B-5, no groundwater was observed within the top 10 fbg.

Soil Disposal: Soil generated during field activities was stored in one 55-gallon drum, sampled, and profiled for disposal. On October 11, 2005, Manley and Sons Trucking, Inc. (Manley) of Sacramento, California transported approximately 0.24 tons of soil from the site to Allied Waste Industries' Forward Landfill in Manteca, California. The disposal documentation and profile results are included in Appendix D.

Chemical Analyses: Soil and Groundwater samples were analyzed for TPHg, BTEX, and MTBE by EPA Method 8260B. The certified analytical reports are included in Appendix E.

HYDROCARBON DISTRIBUTION IN SOIL

TPHg was detected in the soil sample collected from boring B-2 at a depth of 6 fbg at concentration of 2.4 ppm. The laboratory noted that the result represented the quantity of unknown hydrocarbons in the sample based on gasoline carbon range. MTBE was detected in soil samples collected from boring B-2 at depths of 3, 6 and 9.5 fbg at of 0.0054, 0.17, and 0.15 ppm, respectively. None of the soil samples contained benzene concentrations above the laboratory detection limits.

The soil chemical analytical data are summarized on Table 2. The TPHg, benzene, and MTBE concentrations are presented on Figure 2. The laboratory analytical report is included in Appendix E.

HYDROCARBON DISTRIBUTION IN GROUNDWATER

The groundwater sample collected from CPT-1 at a depth of 36 fbg contained 240 ppb TPHg and 17 ppb MTBE. For TPHg, the laboratory noted that the result represented the quantity of unknown hydrocarbons in the sample based on gasoline carbon range. No benzene was detected in the sample. The groundwater sample from CPT-1 collected at a depth of 58 fbg did not contain any detectable constituents.

The groundwater chemical analytical data are summarized on Table 3. The TPHg, benzene, and MTBE concentrations are presented on Figure 2. The laboratory analytical report is included in Appendix E.

FINDINGS AND CONCLUSIONS

Through the efforts described herein and review of previous data, Cambria makes the following findings and conclusions.

Impacted near Dispensers and Vapor Migration Potential: Based on the data from borings B-1 through B-4, the extent of impacted soil noted previously beneath the dispensers is not laterally extensive. Shallow soil samples from B-1 through B-4 indicate that shallow soils near the kiosk do not contain contaminants at concentrations that pose a potential vapor threat. Since groundwater impact at this site appears to be limited to the areas near the UST complex, which is downgradient of the kiosk, Cambria concludes that the subsurface conditions at this site do not pose a vapor threat to onsite commercial workers.

Vertical Impact near S-2: Historically, well S-2 has contained elevated concentrations of petroleum constituents in groundwater. To assess the vertical extent of that impact, CPT-1 was installed near S-2. The groundwater results (Table 3 and Figure 2) indicate that the petroleum constituents attenuate significantly with depth and are below laboratory method detection limits at 58 fbg. Thus, the monitoring well has been monitoring the most impacted water zone, and further vertical assessment does not appear warranted.

Preferential Migration along Storm Drains: No shallow groundwater was present within the first 10 fbg at B-5 positioned between the storm drains in Perkins Street, south of Grand Avenue. Because of safety precautions and lack of clearance from all of the utility providers notified through the Underground Service Alert notification process, the CPT boring proposed for this location was not installed. Thus, boring B-5 was not extended deeper than the hand cleared boring to 10 fbg. From the previous conduit study, the storm drains in Perkins Street are 18 and 30 inches in diameter and situated between approximately 8 and 12 fbg. Since depth to groundwater in both onsite and offsite wells was measured between 7.5 to 9 fbg during both August and October 2005 (before and after the boring installation date), one would have expected to observe groundwater at this location within 10 fbg.

In order to address concerns regarding potential migration of contaminants along the storm drains without obtaining a groundwater sample, Cambria reviewed the groundwater contour maps for the past three years (Appendix F). Based on these contour maps, it appears that the storm drains may be acting more as a hydraulic barrier to groundwater flow than a conduit, as groundwater flow is typically southward across the site and moves to the east-southeast within Grand Avenue.

Given the absence of contamination in offsite wells S-4 and S-5 (on either side of the storm drains) and the very tight formation with low groundwater yield near well S-2 (as confirmed by extraction attempts), it seems unlikely that significant migration of contaminants has occurred. The contour maps included in Appendix F suggest that any migration via groundwater would be detectable in downgradient well S-4. Thus, Cambria concludes that the storm drains along Perkins Street are not likely acting as conduits for preferential migration of contaminants.

RECOMMENDATIONS

Although some of the proposed samples were not successfully obtained due to drilling refusal or safety considerations, sufficient data was collected to provide the findings and conclusions presented above. Given the declining trends in contaminant concentrations in well S-2 observed over the past two years and the limited lateral extent of the groundwater plume, Cambria recommends conducting an evaluation for closure by preparing a site conceptual model and risk evaluation.

CLOSING

If you have any questions regarding the contents of this document, please call Ana Friel at (707) 268-3812.

Sincerely,
Cambria Environmental Technology, Inc.

for Martha Murphy
Staff Geologist

for Ana Friel
Senior Project Geologist
PG 6452

Attachments:

Table 1.	Well/Boring Data
Table 2.	Soil Analytical Data
Table 3.	Grab Groundwater Analytical Data
Figure 1.	Vicinity/Area Well Survey Map
Figure 2.	Site Plan/Soil and Groundwater Chemical Concentration Map
Appendix A.	Permits
Appendix B.	Boring Logs
Appendix C.	CPT Logs
Appendix D.	Disposal Documentation and Profile Analytical Report
Appendix E.	Certified Analytical Report
Appendix F.	Historical Groundwater Contour Maps

cc: Denis Brown, Shell
Gursharnjeet Cheema, 1060 St. Raphael Drive, Bay Point, CA 94565

Table 1. Well/Boring Data, Shell-branded Service Station, 350 Grand Avenue, Oakland, California

Name	Type	Date Installed	TOC Elev (ft msl)	Total Depth (ft)	Soil Sample (ft) Incr. or	Soil Sample (ft) Depth(s)	First Encountered GW Depth (ft)	First Encountered GW Elev (ft msl)	Screen Diam. (In)	Screen Depth (ft) Top	Screen Depth (ft) Bottom	Comments
S-1	Well (HSA)	07-Jan-91	23.36	19.5	5	-	9.5	-	3	7	16	
S-2	Well (HSA)	07-Jan-91	23.73	17.5	5	-	8.5	-	3	7	15	
S-3	Well (HSA)	07-Jan-91	25.14	15	5	-	9	-	3	7	15	
S-4	Well (HSA)	16-Apr-98	22.34	15	5	-	7	-	0.75	4	14	
S-5	Well (HSA)	16-Apr-98	23.55	15	5	-	13.5	-	0.75	4	15	
S-A	Boring (Geoprobe)	1-May-90	-	13.5	5	-	8.0	-	-	-	-	
S-B	Boring (Geoprobe)	1-May-90	-	15	5	-	8.5	-	-	-	-	
S-C	Boring (Geoprobe)	1-May-90	-	13.5	5	-	9.5	-	-	-	-	
S-D	Boring (Geoprobe)	1-May-90	-	15	5	-	8.5	-	-	-	-	
HP-1	Boring (HSA)	27-Jan-93	-	10	5	-	NA	-	-	-	-	
HP-2	Boring (HSA)	27-Jan-93	-	13	5	-	NA	-	-	-	-	
HP-3	Boring (HSA)	27-Jan-93	-	14	5	-	13	-	-	-	-	
HP-4	Boring (Geoprobe)	17-Mar-99	-	15.5	C	-	8	-	-	-	-	
HP-5	Boring (Geoprobe)	17-Mar-99	-	15	C	-	8	-	-	-	-	
HP-6	Boring (Geoprobe)	17-Mar-99	-	20	C	-	10	-	-	-	-	
HP-7	Boring (Geoprobe)	13-Apr-04	-	20	C	-	19.5	-	-	-	-	
HP-8	Boring (Geoprobe)	13-Apr-04	-	16	C	-	11	-	-	-	-	
HP-9	Boring (Hand auger)	13-Apr-04	-	10	C	-	10	-	-	-	-	
HP-10	Boring (Hand auger)	13-Apr-04	-	10	C	-	10	-	-	-	-	
B-1	**Boring (Hand auger)**	**21-Sep-05**	-	**6.0**	-	**3, 5.5**	**4.5**	-	-	-	-	
B-2	**Boring (Hand auger)**	**21-Sep-05**	-	**10**	-	**3, 6, 9.5**	-	-	-	-	-	
B-3	**Boring (Hand auger)**	**21-Sep-05**	-	**3**	-	**2.5**	-	-	-	-	-	
B-4	**Boring (Hand auger)**	**21-Sep-05**	-	**2**	-	**1.5**	-	-	-	-	-	
B-5	**Boring (Hand auger)**	**20-Sep-05**	-	**10.5**	-	**5, 9.5**	-	-	-	-	-	
CPT-1	**Boring (CPT)**	**20-Sep-05**	-	**60**	-	-	**35**	-	-	-	-	

Table 1. Well/Boring Data, Shell-branded Service Station, 350 Grand Avenue, Oakland, California

Abbreviations:
TOC Elev= Top of casing elevation
GW = Groundwater
ft = Feet
ft msl = Feet referenced to mean sea level
fbg = Feet below grade
C = Continuous
Diam. = Diameter
in = Inches
HSA = Hollow-stem auger
CPT = Cone penetration testing

Table 2. Soil Analytical Data, Shell-branded Service Station, 350 Grand Avenue, Oakland, California

Sample ID	Date Sampled	Depth fbg	TPHg mg/kg	TPHd mg/kg	B mg/kg	T mg/kg	E mg/kg	X mg/kg	MTBE mg/kg	Lead mg/kg	Comments Work performed by
B-1-3'	**21-Sep-05**	**3.0**	<1.0	NA	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	NA	Cambria
B-1-5.5'	**21-Sep-05**	**5.5**	<50	NA	<0.50	<0.50	<0.50	<0.50	<0.50	NA	Cambria
B-2-3'	**21-Sep-05**	**3.0**	<1.0	NA	<0.0050	<0.0050	<0.0050	<0.0050	**0.054**	NA	Cambria
B-2-6'	**21-Sep-05**	**6.0**	**2.4**[a]	NA	<0.0050	<0.0050	<0.0050	<0.0050	**0.17**	NA	Cambria
B-2-9.5'	**21-Sep-05**	**9.5**	<1.0	NA	<0.0050	<0.0050	<0.0050	<0.0050	**0.15**	NA	Cambria
B-3-2.5'	**21-Sep-05**	**2.5**	<1.0	NA	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	NA	Cambria
B-4-1.5'	**21-Sep-05**	**1.5**	<1.0	NA	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	NA	Cambria
B-5-5'	**20-Sep-05**	**5.0**	<1.0	NA	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	NA	Cambria
B-5-9.5'	**20-Sep-05**	**9.5**	<1.0	NA	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	NA	Cambria
HP-7-5'	13-Apr-04	5.0	**4.0**	NA	<0.0050	<0.0050	**0.013**	**0.019**	**0.045**	NA	Cambria
HP-7-10'	13-Apr-04	10.0	**85**	NA	<0.50	<0.50	**0.53**	**0.68**	<0.50	NA	Cambria
HP-7-15'	13-Apr-04	15.0	**3.3**	NA	<0.0050	<0.0050	**0.036**	**0.025**	**0.023**	NA	Cambria
HP-7-19.5'	13-Apr-04	19.5	<1.0	NA	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	NA	Cambria
HP-8-5'	13-Apr-04	5.0	<1.0	NA	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	NA	Cambria
HP-8-10'	13-Apr-04	10.0	<1.0	NA	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	NA	Cambria
HP-8-11'	13-Apr-04	11.0	<1.0	NA	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	NA	Cambria
HP-8-14.5'	13-Apr-04	14.5	<1.0	NA	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	NA	Cambria
HP-9-5'	13-Apr-04	5.0	<1.0	NA	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	NA	Cambria
HP-9-10'	13-Apr-04	10.0	**4,300**	NA	<5.0	<5.0	<5.0	<5.0	<5.0	NA	Cambria
HP-10-5'	13-Apr-04	5.0	<1.0	NA	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	NA	Cambria
HP-10-9.5'	13-Apr-04	9.5	<1.0	NA	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	NA	Cambria

Table 2. Soil Analytical Data, Shell-branded Service Station, 350 Grand Avenue, Oakland, California

Sample ID	Date Sampled	Depth fbg	TPHg mg/kg	TPHd mg/kg	B mg/kg	T mg/kg	E mg/kg	X mg/kg	MTBE mg/kg	Lead mg/kg	Comments Work performed by
HP-4-5.5'	17-Mar-99	5.5	<1.00	<1.0	<0.00500	<0.00500	<0.00500	<0.00500	<0.0500	NA	Cambria
HP-4-10'	17-Mar-99	10.0	**408**	**140**	**2.22**	**2.57**	<0.250	**0.35**	**2.52**	NA	Cambria
HP-4-15'	17-Mar-99	15.0	**1.91**	<1.0	<0.00500	<0.00500	**0.0151**	**0.00510**	**0.132**	NA	Cambria
HP-4-15.5'	17-Mar-99	15.5	<1.00	**5.1**	**0.00560**	<0.00500	<0.00500	<0.00500	**0.110**	NA	Cambria
HP-5-5'	17-Mar-99	5.0	<1.00	**1.1**	<0.00500	<0.00500	<0.00500	<0.00500	<0.0500	NA	Cambria
HP-5-7'	17-Mar-99	7.0	<1.00	**4.8**	<0.00500	<0.00500	<0.00500	<0.00500	<0.0500	NA	Cambria
HP-5-10.5'	17-Mar-99	10.5	<1.00	**1.8**	<0.00500	<0.00500	<0.00500	<0.00500	<0.0500	NA	Cambria
HP-5-14.5'	17-Mar-99	14.5	<1.00	**5.6**	<0.00500	<0.00500	<0.00500	<0.00500	<0.0500	NA	Cambria
HP-5-15'	17-Mar-99	15.0	<1.00	<1.0	<0.00500	<0.00500	<0.00500	<0.00500	<0.0500	NA	Cambria
HP-6-5'	17-Mar-99	5.0	<1.00	<1.0	<0.00500	<0.00500	<0.00500	<0.00500	<0.0500	NA	Cambria
HP-6-8'	17-Mar-99	8.0	<1.00	**5.2**	<0.00500	<0.00500	<0.00500	<0.00500	<0.0500	NA	Cambria
HP-6-10'	17-Mar-99	10.0	<1.00	**3.1**	<0.00500	<0.00500	<0.00500	<0.00500	<0.0500	NA	Cambria
HP-6-15'	17-Mar-99	15.0	<1.00	**3.8**	<0.00500	<0.00500	<0.00500	<0.00500	<0.0500	NA	Cambria
HP-6-19.5'	17-Mar-99	19.5	<1.00	**5.8**	<0.00500	<0.00500	<0.00500	<0.00500	<0.0500	NA	Cambria
HP-6-20'	17-Mar-99	20.0	<1.00	**1.4**	<0.00500	<0.00500	<0.00500	<0.00500	<0.0500	NA	Cambria
SB-1-7.5' (S-5)	16-Apr-98	7.5	<1.0	NA	<0.0050	<0.0050	<0.0050	<0.0050	<0.025	NA	Cambria
SB-2-6.0' (S-4)	16-Apr-98	6.0	<1.0	NA	<0.0050	<0.0050	<0.0050	<0.0050	<0.025	NA	Cambria
G-1	22-Apr-96	7.0	**840**	**430**	<1.5	<1.5	**7.0**	**5.0**	NA	NA	Weiss Associates
G-2	22-Apr-96	7.0	**9.1**	**17**	**0.025**	**0.34**	**0.072**	**0.93**	NA	NA	Weiss Associates
G-3	22-Apr-96	7.0	**4.4**	**11**	**0.0087**	**0.020**	<0.005	**0.014**	NA	NA	Weiss Associates
G-4	22-Apr-96	7.0	**830**	**420**	<1.5	<1.5	**10**	**5.5**	NA	NA	Weiss Associates
G-5	22-Apr-96	7.0	**130**	**100**	<0.10	<0.10	**0.17**	**0.74**	NA	NA	Weiss Associates
G-6	22-Apr-96	7.0	**4,100**	**1,600**	<10	<10	**17**	**12**	NA	NA	Weiss Associates
G-7	22-Apr-96	7.0	**2,700**	**1,900**	<3.0	<3.0	**8.8**	**14**	NA	NA	Weiss Associates
G-8	22-Apr-96	7.0	**340**	**210**	<0.25	<0.25	**0.77**	**0.94**	NA	NA	Weiss Associates

Table 2. Soil Analytical Data, Shell-branded Service Station, 350 Grand Avenue, Oakland, California

Sample ID	Date Sampled	Depth fbg	TPHg mg/kg	TPHd mg/kg	B mg/kg	T mg/kg	E mg/kg	X mg/kg	MTBE mg/kg	Lead mg/kg	Comments Work performed by
D-1	22-Apr-96	8.5	**250**	**59**	<0.25	<0.25	**0.89**	**2.7**	NA	NA	Weiss Associates
D-2	22-Apr-96	8.5	**230**	**230**	<0.12	<0.12	**0.46**	**1.3**	NA	NA	Weiss Associates
DISP-1	22-Apr-96	2.0	**0.57**	**2.0**	<0.005	<0.005	<0.005	<0.005	NA	NA	Weiss Associates
DISP-2	22-Apr-96	2.0	**420**	**64**	<0.5	**1.4**	**5.1**	**22**	NA	NA	Weiss Associates
DISP-3	22-Apr-96	2.0	**9.2**	**49**	<0.012	**0.018**	**0.059**	**0.29**	NA	NA	Weiss Associates
DISP-4	22-Apr-96	2.0	**2.6**	**14**	**0.065**	<0.005	**0.053**	**0.095**	NA	NA	Weiss Associates
DISP-5	22-Apr-96	2.0	**1.4**	**3.3**	<0.005	**0.0056**	<0.005	**0.0085**	NA	NA	Weiss Associates
DISP-6	22-Apr-96	2.0	**7.2**	**4.6**	**0.0072**	**0.012**	**0.012**	**0.0075**	NA	NA	Weiss Associates
DISP-7	22-Apr-96	2.0	**4,800**	**2,800**	<10	**85**	**35**	**280**	NA	NA	Weiss Associates
DISP-8	22-Apr-96	2.0	**4,000**	**1,400**	<5.0	**120**	**49**	**420**	NA	NA	Weiss Associates
DISP-9	22-Apr-96	2.0	**770**	**2,800**	**3.6**	**11**	**8**	**61**	NA	NA	Weiss Associates
P-1	22-Apr-96	4.0	**1,300**	**820**	**5.5**	**57**	**24**	**140**	NA	NA	Weiss Associates
P-1	23-Apr-96	7.0	**68**	**6.2**	**0.80**	<0.05	**0.32**	**0.28**	NA	NA	Weiss Associates
P-2	22-Apr-96	3.0	**3,200**	**1,000**	**22**	**130**	**48**	**290**	NA	NA	Weiss Associates
P-3	22-Apr-96	3.0	**12**	**5.8**	**0.31**	**0.032**	**0.37**	**1.0**	NA	NA	Weiss Associates
P-4	22-Apr-96	3.0	**11**	**10**	**0.23**	**0.085**	**0.26**	**0.83**	NA	NA	Weiss Associates
P-5	22-Apr-96	2.5	**1.5**	**2.1**	<0.005	<0.005	<0.005	**0.0077**	NA	NA	Weiss Associates
P-6	22-Apr-96	2.0	**1.1**	**1.6**	<0.005	<0.005	<0.005	**0.0055**	NA	NA	Weiss Associates
P-7	22-Apr-96	2.0	**21**	**3.7**	<0.010	<0.010	**0.075**	**0.20**	NA	NA	Weiss Associates
P-8	22-Apr-96	2.0	**1,400**	**650**	<2.5	**17**	**11**	**83**	NA	NA	Weiss Associates
P-9	22-Apr-96	2.0	**4,200**	**610**	**6.8**	**210**	**74**	**490**	NA	NA	Weiss Associates
P-10	22-Apr-96	2.0	**2.3**	**3.7**	<0.005	**0.017**	**0.010**	**0.055**	NA	NA	Weiss Associates
P-11	22-Apr-96	2.5	**360**	**13**	**1.9**	**17**	**6.5**	**45**	NA	NA	Weiss Associates
P-12	22-Apr-96	2.5	**240**	**460**	**4.7**	<0.5	**4.8**	**2.1**	NA	NA	Weiss Associates
P-13	23-Apr-96	5.5	**3.8**	**1.6**	**0.053**	**0.0083**	**0.0098**	**0.020**	NA	NA	Weiss Associates

Table 2. Soil Analytical Data, Shell-branded Service Station, 350 Grand Avenue, Oakland, California

Sample ID	Date Sampled	Depth fbg	TPHg mg/kg	TPHd mg/kg	B mg/kg	T mg/kg	E mg/kg	X mg/kg	MTBE mg/kg	Lead mg/kg	Comments Work performed by
DSW-1	23-Apr-96	2.5	**510**	**130**	<0.5	<0.5	**1.2**	**3.0**	NA	NA	Weiss Associates
DSW-2	23-Apr-96	2.5	**87**	**13**	**0.34**	**2.2**	**0.94**	**7.1**	NA	NA	Weiss Associates
DSW-3	23-Apr-96	2.5	<1.0	**1.6**	<0.005	<0.005	<0.005	<0.005	NA	NA	Weiss Associates
DSW-4	23-Apr-96	2.5	**3.8**	**2.5**	<0.005	**0.014**	**0.028**	**0.077**	NA	NA	Weiss Associates
DSW-5	23-Apr-96	2.0	**270**	**31**	<0.25	<0.25	**0.68**	**1.6**	NA	NA	Weiss Associates
DB-1	23-Apr-96	4.0	**46**	**5.2**	**0.091**	**0.13**	**0.66**	**1.7**	NA	NA	Weiss Associates
DB-2	23-Apr-96	4.0	**8.1**	**4.5**	**0.081**	**0.078**	**0.11**	**0.34**	NA	NA	Weiss Associates
DB-3	23-Apr-96	3.5	**33**	**3.6**	**0.34**	**0.077**	**0.20**	**0.14**	NA	NA	Weiss Associates
HP-1-6.5	27-Jan-93	6.5	**1,500**	**18.0**	**0.11**	**0.81**	**0.86**	**1.2**	NA	NA	GeoStrategies
HP-2-6.5	27-Jan-93	6.5	<1.0	<1	<0.0025	<0.0025	<0.0025	<0.0025	NA	NA	GeoStrategies
HP-3-6.5	27-Jan-93	6.5	<1.0	<1	<0.0025	<0.0025	<0.0025	<0.0025	NA	NA	GeoStrategies
S-1-4.5	07-Jan-91	4.5	<1.0	<1.0	<0.005	**0.005**	<0.005	<0.005	NA	NA	GeoStrategies
S-1-9.5	07-Jan-91	9.5	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	NA	NA	GeoStrategies
S-2-4.5	07-Jan-91	4.5	<1.0	**2.9**[b]	**0.031**	**0.006**	<0.005	**0.007**	NA	NA	GeoStrategies
S-2-8.5	07-Jan-91	8.5	**440**	**360**[b]	**4.5**	**1.6**	**11**	**12**	NA	NA	GeoStrategies
S-2-14.5	07-Jan-91	14.5	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	NA	NA	GeoStrategies
S-2-17.5	07-Jan-91	17.5	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	NA	NA	GeoStrategies
S-3-4.5	07-Jan-91	4.5	**20**	**23**[b]	**0.33**	**0.17**	**0.50**	**2.0**	NA	NA	GeoStrategies
S-3-9.0	07-Jan-91	9.0	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	NA	NA	GeoStrategies
S-A-4.5	11-May-90	4.5	<2.5	<5	**0.045**	<0.025	<0.025	<0.05	NA	**5.3**	GeoStrategies
S-A-9.5	11-May-90	9.5	**2,900**	**2,400**[b]	**13**	**7**	**44**	**210**	NA	**8.7**	GeoStrategies
S-A-13.5	11-May-90	13.5	<2.5	<5	<0.025	<0.025	<0.025	<0.05	NA	**5.7**	GeoStrategies

Table 2. Soil Analytical Data, Shell-branded Service Station, 350 Grand Avenue, Oakland, California

Sample ID	Date Sampled	Depth fbg	TPHg mg/kg	TPHd mg/kg	B mg/kg	T mg/kg	E mg/kg	X mg/kg	MTBE mg/kg	Lead mg/kg	Comments Work performed by
S-B-6.5	11-May-90	6.5	**21**	**42***	**0.082**	<0.025	**0.24**	**0.91**	NA	**38**	GeoStrategies
S-B-9.0	11-May-90	9.0	**1,400**	**1,300**[b]	**7**	**3**	**31**	**130**	NA	**6.3**	GeoStrategies
S-B-13.5	11-May-90	13.5	**2.5**	<5	0.30	<0.025	**0.027**	**0.09**	NA	**9.3**	GeoStrategies
S-C-9.5	11-May-90	9.5	**22**	**20**[b]	**0.30**	**0.052**	**0.57**	**1.3**	NA	**3.5**	GeoStrategies
S-D-4.5	11-May-90	4.5	<2.5	<5	<0.025	<0.025	<0.025	<0.05	NA	**7.6**	GeoStrategies
S-D-9.0	11-May-90	9.0	<2.5	**36**[b]	<0.025	<0.025	<0.025	<0.05	NA	**9.2**	GeoStrategies
S-D-15.0	11-May-90	15.0	<2.5	<5	<0.025	<0.025	<0.025	<0.05	NA	**6.8**	GeoStrategies
S-E-9.5	11-May-90	9.5	<2.5	<5	**0.10**	<0.025	<0.025	**0.21**	NA	**2.6**	GeoStrategies
S-E-13.5	11-May-90	13.5	<2.5	<5	<0.025	<0.025	<0.025	<0.05	NA	**8.1**	GeoStrategies

Abbreviations:

Lead by EPA Method 7421

The following constituents analyzed by EPA Method 8015M, 8020, or 8260B:

TPHg = Total petroleum hydrocarbons as gasoline

TPHd = Total petroleum hydrocarbons as diesel

BTEX = Benzene, toluene, ethylbenzene, and xylenes

MTBE = Methyl tertiary butyl ether

mg/kg = Milligrams per kilogram

NA = Not analyzed

[a] = Quantity of unknown hydrocarbons in sample based on gasoline

[b] = Does not match typical diesel chromatograph pattern

<x = Not detected at reporting limit x

Table 3. Grab Groundwater Analytical Data, Shell-branded Service Station, 350 Grand Avenue, Oakland, California

Sample ID	Date Sampled	TPHg µg/L	TPHd µg/L	B µg/L	T µg/L	E µg/L	X µg/L	MTBE µg/L
CPT-1-36-W	**20-Sep-05**	**240[a]**	NA	<0.50	<0.50	**4.6**	<1.0	**17**
CPT-1-58-W	**21-Sep-05**	<50	NA	<0.50	<0.50	<0.50	<1.0	<0.50
HP-7-W	13-Apr-04	**1,300**	NA	<1.0	<1.0	**25**	**17**	**89**
HP-8-W	13-Apr-04	**57[b]**	NA	<0.50	<0.50	<0.50	<1.0	**6.2**
HP-9-W	13-Apr-04	**89,000**	NA	**480**	**68**	**280**	**<100**	**730**
HP-10-W	13-Apr-04	**67[b]**	NA	<0.50	<0.50	<0.50	<1.0	<0.50
HP-4	17-Mar-99	**83,000**	**100,000**	**1,000**	**420**	**590**	**280**	**2,000**
HP-5	17-Mar-99	**160**	<50	<0.50	<0.50	<0.50	<0.50	<2.5
HP-6	17-Mar-99	<50	<50	<0.50	<0.50	<0.50	<0.50	<2.5 (<2.0)
SB-1	16-Apr-98	<50	**140[b]**	<0.50	<0.50	<0.50	<0.50	<2.5 (<2.0)
SB-2	16-Apr-98	<50	NA	<0.50	<0.50	<0.50	<0.50	NA
HP-1	06-Jan-93	**22,000**	**14,000**	**2,500**	**130**	**1,400**	**140**	NA
HP-2	06-Jan-93	<50	NA	<0.5	**4.4**	<0.5	<0.5	NA
HP-3	06-Jan-93	<50	NA	<0.5	<0.5	<0.5	<0.5	NA

Abbreviations:

The following constituents analyzed by EPA Method 8260B:

TPHg = Total petroleum hydrocarbons as gasoline

BTEX = Benzene, toluene, ethylbenzene, and xylenes

MTBE = Methyl tertiary butyl ether

µg/L = Micrograms per liter

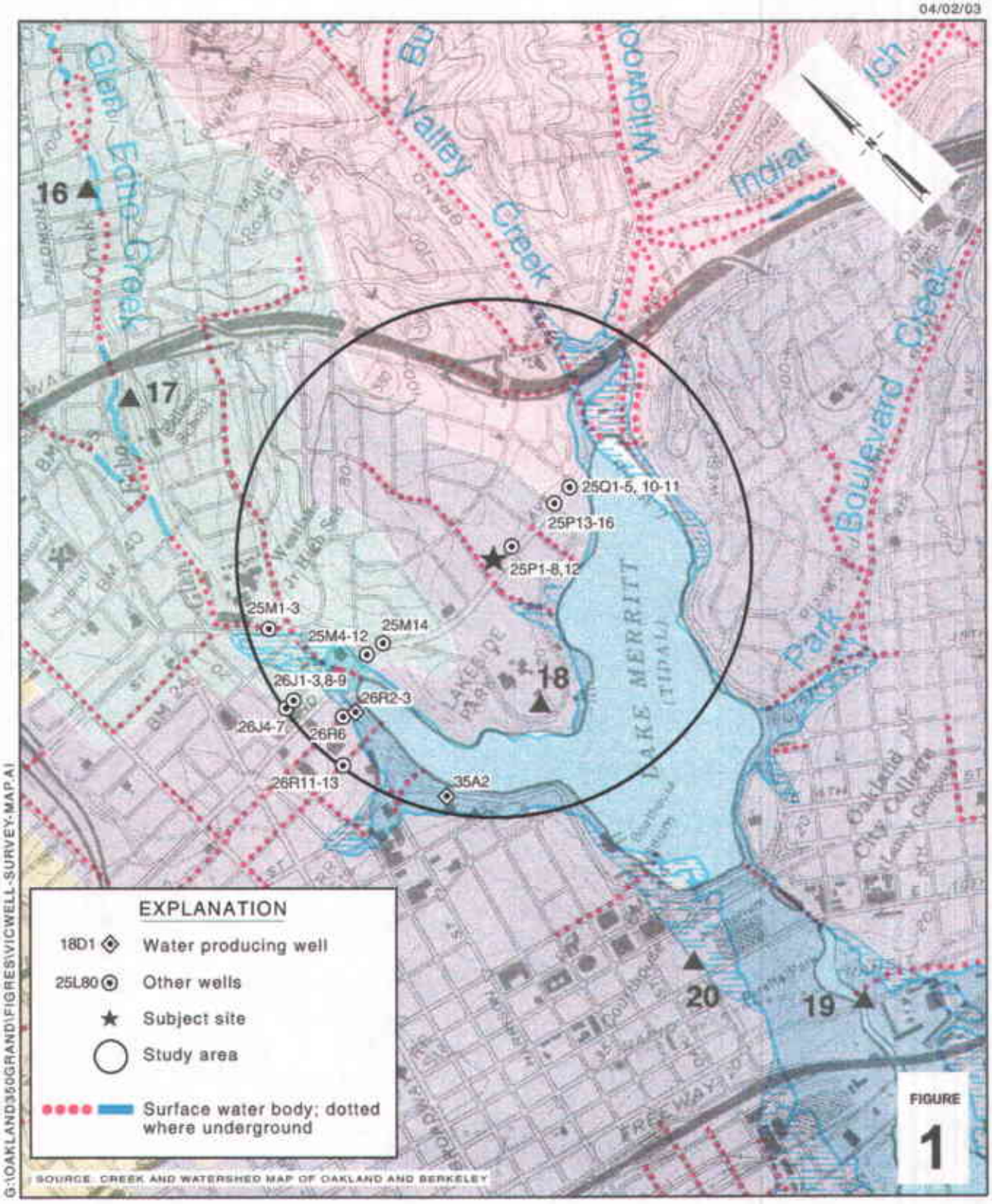
<x = Not detected at reporting limit x

NA = Not analyzed

a = Quantity of unknown hydrocarbon(s) in sample

b = TPHg does not match laboratory standard

04/02/03



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Shell-branded Service Station
350 Grand Avenue
Oakland, California
Incident #98995755

CAMBRIA

Vicinity/Area Well Survey Map

18-Oct-05

Site Plan/Soil and Groundwater Chemical Concentration Map

EXPLANATION

- Groundwater monitoring well
- Soil boring location
- Tank backfill well location
- Proposed boring location
- E — Electric utility line
- W — Water main utility line
- G — Gas utility line
- SS — Sanitary sewer utility line
- SD — Storm drain utility line
- PB — Pacific Bell utility line
- Manhole

<50/<0.0050/<0.0050/3.0' — TPHg/Benzene/MTBE concentrations in soil in parts per million/Depth in feet

240/<0.0050/<0.0050/36'* — TPHg/Benzene/MTBE concentrations in groundwater in parts per billion/Depth in feet

* = Quantity of unknown hydrocarbons in sample based on gasoline.

Apartments
Commercial Building
Commercial Building
Commercial Building
Commercial Building
Planter
Trash Enclosure
Dispensers (typ)
Planter
Canopy
Kiosk
Planter
Former Diesel UST
USTs
Planter
Planter
Planter
Lakeside Park
Planter
Apartments
Ta-Ke Sushi
Apartments
PERKINS STREET
GRAND AVENUE

HP-10
B-2 <1.0/<0.0050/**0.054**/3.0'
S-3 **2.4***/<0.0050/**0.17**/6.0'
<1.0/<0.0050/**0.15**/9.5'
B-4 <1.0/<0.0050/<0.0050/1.5'
B-1 <1.0/<0.0050/<0.0050/3.0'
<50/<0.50/<0.50/5.5'
B-3 <1.0/<0.0050/<0.0050/2.5'
HP-1
CPT-1 *240*/<0.50/17/36'* <50/<0.50/<0.50/58'
T-1
HP-7
HP-6
S-2
T-2
HP-9
HP-5
S-1
HP-4
HP-8
HP-2
S-5
B-5 <1.0/<0.0050/<0.0050/5.0' <1.0/<0.0050/<0.0050/9.5'
S-4
HP-3

Scale (ft): 0, 25, 50, 100

FIGURE **2**

Shell-branded Service Station
350 Grand Avenue
Oakland, California

CAMBRIA

0715

Alameda County Public Works Agency - Water Resources Well Permit

399 Elmhurst Street
Hayward, CA 94544-1395
Telephone: (510)670-6633 Fax:(510)782-1939

Application Approved on: 08/29/2005 By jamesy
Permits Issued: W2005-0838

Receipt Number: WR2005-2075
Permits Valid from 09/20/2005 to 09/21/2005

Application Id: 1125331303040
Site Location: 350 Grand Avenue, Oakland, CA 94610
Project Start Date: 09/20/2005

City of Project Site: Oakland

Completion Date: 09/21/2005

Applicant: CAMBRIA - Scott Lewis
270 Perkins St, Sonoma, CA 95476
Phone: 707-933-2369

Property Owner: Gursharnjeet Cheema
1060 St Raphael Drive, Bay Point, CA 94565
Phone: --

Client: ** same as Property Owner **

Total Due: $200.00
Total Amount Paid: $200.00
Paid By: CHECK **PAID IN FULL**

Works Requesting Permits:

Borehole(s) for Investigation-Contamination Study - 7 Boreholes
Driller: Gregg InSita Inc - Lic #: 656407 - Method: DP **Work Total: $200.00**

Specifications

Permit Number	Issued Dt	Expire Dt	# Boreholes	Hole Diam	Max Depth
W2005-0838	08/29/2005	12/19/2005	7	2.00 in.	60.00 ft

Specific Work Permit Conditions

1. Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings.

2. Boreholes shall not be left open for a period of more than 24 hours. All boreholes left open more than 24 hours will need approval from Alameda County Public Works Agency, Water Resources Section. All boreholes shall be backfilled according to permit destruction requirements and all concrete material and asphalt material shall be to Caltrans Spec or County/City Codes. No borehole(s) shall be left in a manner to act as a conduit at any time.

3. Applicant shall contact George Bolton for a inspection time at 510-670-5594 at least five (5) working days prior to starting, once the permit has been approved. Confirm the scheduled date(s) at least 24 hours prior to drilling.

4. Permit is valid only for the purpose specified herein. No changes in construction procedures, as described on this permit application. Boreholes shall not be converted to monitoring wells, without a permit application process.

5. Note: CPT-1 to CPT-3 & B-1 to B-4 (See site plan, on site and in the street)

CITY OF OAKLAND • Community and Economic Development Agency
250 Frank H. Ogawa Plaza, 2nd Floor, Oakland, CA 94612 • Phone (510) 238-3443 • FAX (510) 238-2263

Job Site 350 GRAND AV Parcel# 010 -0776-013-00 Appl# X0500991

Descr soil boring Permit Issued 08/30/05

Work Type EXCAVATION-PRIVATE P

USA # Util Co. Job #: Acctg#:
Util Fund #:

		Applcnt	Phone#	Lic#	--License Classes--
Owner	SHELL OIL				
Contractor	GREGG DRILLING & TESTING, INC.	X	(925)313-5800	485165	C57
Arch/Engr					
Agent	CAMBRIA ENVIRO/STU DALIE X139		(510)420-0700		
Applic Addr	950 HOWE RD, MARTINEZ, CA., 94553				

$411.96 TOTAL FEES PAID AT ISSUANCE

$59.00	Applic	$300.00	Permit
$.00	Process	$34.11	Rec Mgmt
$.00	Gen Plan	$.00	Invstg
$.00	Other	$18.85	Tech Enh

JOB SITE

ADDRESS:

DIST:

CITY OF OAKLAND • Community and Economic Development Agency
250 Frank H. Ogawa Plaza, 2nd Floor, Oakland, CA 94612 • Phone (510) 238-3443 • FAX (510) 238-2263

Job Site 350 GRAND AV Parcel# 010 -0776-013-00 Appl# OB050654

soil boring Permit Issued 09/13/05
block lane of traffic per approved Traffic Control Plan

PERKINS AT GRAND AV

Nbr of days: 2 Linear feet: 50
Effective: 09/20/05 Expiration: 09/21/05

SHORT TERM NON-METERED

		Applcnt	Phone#	Lic#	--License Classes--
Owner	SHELL OIL				
Contractor	GREGG DRILLING & TESTING, INC.	X	(925)313-5800	485165	C57
Arch/Engr					
Agent	CAMBRIA ENVIRO/STU DALIE X139		(510)420-0700		
Applic Addr	950 HOWE RD, MARTINEZ, CA., 94553				

$134.26 TOTAL FEES PAID AT ISSUANCE

$59.00	Applic	$58.00	Permit
$.00	Process	$11.12	Rec Mgmt
$.00	Gen Plan	$.00	Invstg
$.00	Other	$6.14	Tech Enh

JOB SITE

ADDRESS:

DIST:

Applicant: _____ _____

Issued by: _____ _____

CITY OF OAKLAND • Community and Economic Development Agency
250 Frank H. Ogawa Plaza, 2nd Floor, Oakland, CA 94612 • Phone (510) 238-3443 • FAX (510) 238-2263

Job Site 350 GRAND AV Parcel# 010 -0776-013-00 Appl# OB050655

soil boring
block lane of traffic per approved Traffic Control Plan
Reserve meters for construction

Permit Issued 09/13/05

PERKINS AT GRAND AV

Nbr of days: 2
Effective: 09/20/05

Nbr of meters: 4
Expiration: 09/21/05

SHORT TERM METERED

		Applcnt	Phone#	Lic#	--License Classes--
Owner	SHELL OIL				
Contractor	GREGG DRILLING & TESTING, INC.	X	(925)313-5800	485165	C57
Arch/Engr					
Agent	CAMBRIA ENVIRO/STU DALIE X139		(510)420-0700		
Applic Addr	950 HOWE RD, MARTINEZ, CA., 94553				

$333.93 TOTAL FEES PAID AT ISSUANCE

$59.00	Applic	$232.00	Permit
$.00	Process	$27.65	Rec Mgmt
$.00	Gen Plan	$.00	Invstg
$.00	Other	$15.28	Tech Enh

JOB SITE

ADDRESS:

DIST:

Applicant: _____ _____

Issued by: _____ _____

Appendix B

Boring Logs

Cambria Environmental Technology, Inc.
270 Perkins Street
Sonoma, CA 95476
Telephone: 707-935-4850
Fax: 707-935-6649

BORING/WELL LOG

CLIENT NAME	Shell Oil Products US	**BORING/WELL NAME**	B-1
JOB/SITE NAME	Shell-branded Service Station	**DRILLING STARTED**	21-Sep-05
LOCATION	350 Grand Avenue, Oakland, California	**DRILLING COMPLETED**	21-Sep-05
PROJECT NUMBER	0715	**WELL DEVELOPMENT DATE (YIELD)**	NA
DRILLER	Gregg Drilling	**GROUND SURFACE ELEVATION**	Not Surveyed
DRILLING METHOD	Hand auger	**TOP OF CASING ELEVATION**	Not Surveyed
BORING DIAMETER	3"	**SCREENED INTERVAL**	NA
LOGGED BY	S. Lewis	**DEPTH TO WATER (First Encountered)**	4.5 ft (21-Sep-05) ▽
REVIEWED BY	A. Friel, PG 6452	**DEPTH TO WATER (Static)**	NA ▼
REMARKS			

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (fbg)	U.S.C.S.	GRAPHIC LOG	SOIL DESCRIPTION	CONTACT DEPTH (fbg)	WELL DIAGRAM
							CONCRETE	0.6	Portland Type I/II
					GM		**Silty GRAVEL with Sand (GM)**; light olive brown (2.5Y 5/4); moist; 15% silt, 25% fine to coarse sand, 60% fine to coarse gravel.	1.0	
					SP SM		**SAND with Silt (SP-SM)**; light olive brown (2.5Y 5/4); dry to moist; 10% silt, 90% fine sand.	2.6	
		B-1-3.0'			SM		**Silty SAND (SM)**; light olive brown (2.5Y 5/4); moist; 15% clay, 20% silt, 65% fine sand. ▽		
				5			@ 4.5' - moist to wet.		
		B-1-5.5						6.0	Bottom of Boring @ 6 ft

WELL LOG (PID) I:\OAKLAN-3\GINT\0715.GPJ DEFAULT.GDT 12/1/05

Cambria Environmental Technology, Inc.
270 Perkins Street
Sonoma, CA 95476
Telephone: 707-935-4850
Fax: 707-935-6649

BORING/WELL LOG

CLIENT NAME	Shell Oil Products US	**BORING/WELL NAME**	B-2
JOB/SITE NAME	Shell-branded Service Station	**DRILLING STARTED**	21-Sep-05
LOCATION	350 Grand Avenue, Oakland, California	**DRILLING COMPLETED**	21-Sep-05
PROJECT NUMBER	0715	**WELL DEVELOPMENT DATE (YIELD)**	NA
DRILLER	Gregg Drilling	**GROUND SURFACE ELEVATION**	Not Surveyed
DRILLING METHOD	Hand auger	**TOP OF CASING ELEVATION**	Not Surveyed
BORING DIAMETER	3"	**SCREENED INTERVAL**	NA
LOGGED BY	S. Lewis	**DEPTH TO WATER (First Encountered)**	NA
REVIEWED BY	A. Friel, PG 6452	**DEPTH TO WATER (Static)**	NA
REMARKS			

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (fbg)	U.S.C.S.	GRAPHIC LOG	SOIL DESCRIPTION	CONTACT DEPTH (fbg)	WELL DIAGRAM
							CONCRETE	0.6	Portland Type I/II
					GM		**Silty GRAVEL with Sand (GM)**; dark gray (10YR 4/1); moist; 25% silt, 20% fine to coarse sand, 55% fine to coarse gravel.	1.0	
					ML		**Sandy SILT (ML)**; dark gray (10YR 4/1); moist; 25% clay, 45% silt, 30% fine to coarse sand; low plasticity	2.5	
		B-2-3.0'			SM		**Silty SAND (SM)**; light greenish gray (5G 7/1); dry to moist; 15% silt, 80% fine sand, 5% fine gravel. @ 3' - moist; 15% clay, 15% silt, 70% fine sand.	4.0	
				5			**Sandy SILT (ML)**; dark yellowish brown (10YR 4/6); moist; 25% clay, 40% silt, 30% fine to coarse sand, 5% fine gravel; low plasticity.		
		B-2-6.0'			ML		**SILT (ML)**; light greenish gray (5GY 7/1); moist; 30% clay, 65% silt, 5% fine sand; low plasticity.		
		B-2-9.5'		10				10.0	Bottom of Boring @ 10 ft

WELL LOG (PID) I:\OAKLAN~3\GINT\0715.GPJ DEFAULT.GDT 12/1/05

Cambria Environmental Technology, Inc.
270 Perkins Street
Sonoma, CA 95476
Telephone: 707-935-4850
Fax: 707-935-6649

BORING/WELL LOG

CLIENT NAME	Shell Oil Products US	**BORING/WELL NAME**	B-3
JOB/SITE NAME	Shell-branded Service Station	**DRILLING STARTED**	21-Sep-05
LOCATION	350 Grand Avenue, Oakland, California	**DRILLING COMPLETED**	21-Sep-05
PROJECT NUMBER	0715	**WELL DEVELOPMENT DATE (YIELD)**	NA
DRILLER	Gregg Drilling	**GROUND SURFACE ELEVATION**	Not Surveyed
DRILLING METHOD	Hand auger	**TOP OF CASING ELEVATION**	Not Surveyed
BORING DIAMETER	3"	**SCREENED INTERVAL**	NA
LOGGED BY	S. Lewis	**DEPTH TO WATER (First Encountered)**	NA
REVIEWED BY	A. Friel, PG 6452	**DEPTH TO WATER (Static)**	NA
REMARKS			

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (fbg)	U.S.C.S.	GRAPHIC LOG	SOIL DESCRIPTION	CONTACT DEPTH (fbg)	WELL DIAGRAM
							CONCRETE	0.6	Portland Type I/II
					GM		**Silty GRAVEL with Sand (GM)**; very dark grayish brown (10YR 3/2); moist; 15% clay, 15% silt, 30% fine to coarse sand, 40% fine to coarse gravel.	1.0	
		B-3-2.5'			SM		**Silty SAND (SM)**; very dark grayish brown (10YR 3/2); moist; 15% silt, 80% fine to coarse sand, 5% fine to coarse gravel.	3.0	Bottom of Boring @ 3 ft
							@ 3' - **CONCRETE**		

WELL LOG (PID) I:\OAKLAN-3\GINT\0715.GPJ DEFAULT.GDT 12/1/05

Cambria Environmental Technology, Inc.
270 Perkins Street
Sonoma, CA 95476
Telephone: 707-935-4850
Fax: 707-935-6649

BORING/WELL LOG

CLIENT NAME	Shell Oil Products US	**BORING/WELL NAME**	B-4
JOB/SITE NAME	Shell-branded Service Station	**DRILLING STARTED**	21-Sep-05
LOCATION	350 Grand Avenue, Oakland, California	**DRILLING COMPLETED**	21-Sep-05
PROJECT NUMBER	0715	**WELL DEVELOPMENT DATE (YIELD)**	NA
DRILLER	Gregg Drilling	**GROUND SURFACE ELEVATION**	Not Surveyed
DRILLING METHOD	Hand auger	**TOP OF CASING ELEVATION**	Not Surveyed
BORING DIAMETER	3"	**SCREENED INTERVAL**	NA
LOGGED BY	S. Lewis	**DEPTH TO WATER (First Encountered)**	NA ▽
REVIEWED BY	A. Friel, PG 6452	**DEPTH TO WATER (Static)**	NA ▼
REMARKS			

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (fbg)	U.S.C.S.	GRAPHIC LOG	SOIL DESCRIPTION	CONTACT DEPTH (fbg)	WELL DIAGRAM
		B-4-1.5'			GM		**CONCRETE** **Silty GRAVEL with Sand (GM)**, yellowish brown (10YR 5/4); moist; 5% clay, 15% silt, 25% fine sand, 55% fine to coarse gravel. @ 2' - **CONCRETE**	0.6 2.0	Portland Type I/II Bottom of Boring @ 2 ft

WELL LOG (PID) I:\OAKLAN~3\GINT\0715.GPJ DEFAULT.GDT 12/1/05

Cambria Environmental Technology, Inc.
270 Perkins Street
Sonoma, CA 95476
Telephone: 707-935-4850
Fax: 707-935-6649

BORING/WELL LOG

CLIENT NAME	Shell Oil Products US	**BORING/WELL NAME**	B-5
JOB/SITE NAME	Shell-branded Service Station	**DRILLING STARTED**	20-Sep-05
LOCATION	350 Grand Avenue, Oakland, California	**DRILLING COMPLETED**	20-Sep-05
PROJECT NUMBER	0715	**WELL DEVELOPMENT DATE (YIELD)**	NA
DRILLER	Gregg Drilling	**GROUND SURFACE ELEVATION**	Not Surveyed
DRILLING METHOD	HAnd auger	**TOP OF CASING ELEVATION**	Not Surveyed
BORING DIAMETER	3"	**SCREENED INTERVAL**	NA
LOGGED BY	S. Lewis	**DEPTH TO WATER (First Encountered)**	NA
REVIEWED BY	A. Friel, PG 6452	**DEPTH TO WATER (Static)**	NA
REMARKS			

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (fbg)	U.S.C.S.	GRAPHIC LOG	SOIL DESCRIPTION	CONTACT DEPTH (fbg)	WELL DIAGRAM
					SM		**ASPHALT**	0.4	
							Silty SAND with Gravel (SM); black (2.5Y 2.5/1); moist; 25% silt, 50% fine to coarse sand, 25% fine gravel.	1.0	
							Sandy SILT (ML); black (2.5Y 2.5/1); moist; 30% clay, 40% silt, 30% fine sand; low to medium plasticity.		
		B-5-5.0'		5	ML		@ 4' - pale brown (10YR 6/3); 30% clay, 40% silt, 30% fine to coarse sand.		Portland Type I/II
		B-5-9.5'		10			@ 9' - dark yellowish brown (10YR 4/4).	10.5	Bottom of Boring @ 10.5 ft

WELL LOG (PID) I:\OAKLAN-3\GINT\0715.GPJ DEFAULT.GDT 12/1/05

Appendix C

CPT Logs

Gregg In Situ, Inc.
Presentation of Cone Penetration Test Data

Cone Penetration Testing Procedure (CPT)

Gregg In Situ, Inc. carries out all Cone Penetration Tests (CPT) using an integrated electronic cone system, *Figure CPT*. The soundings were conducted using a 20 ton capacity cone with a tip area of 15 cm^2 and a friction sleeve area of 225 cm^2. The cone is designed with an equal end area friction sleeve and a tip end area ratio of 0.85.

The cone takes measurements of cone bearing (q_c), sleeve friction (f_s) and dynamic pore water pressure (u_2) at 5-cm intervals during penetration to provide a nearly continuous hydrogeologic log. CPT data reduction and interpretation is performed in real time facilitating on-site decision making. The above mentioned parameters are stored on disk for further analysis and reference. All CPT soundings are performed in accordance with revised (2002) ASTM standards (D 5778-95).

The cone also contains a porous filter element located directly behind the cone tip (u_2), *Figure CPT*. It consists of porous plastic and is 5.0mm thick. The filter element is used to obtain dynamic pore pressure as the cone is advanced as well as Pore Pressure Dissipation Tests (PPDT's) during appropriate pauses in penetration. It should be noted that prior to penetration, the element is fully saturated with silicon oil under vacuum pressure to ensure accurate and fast dissipation.

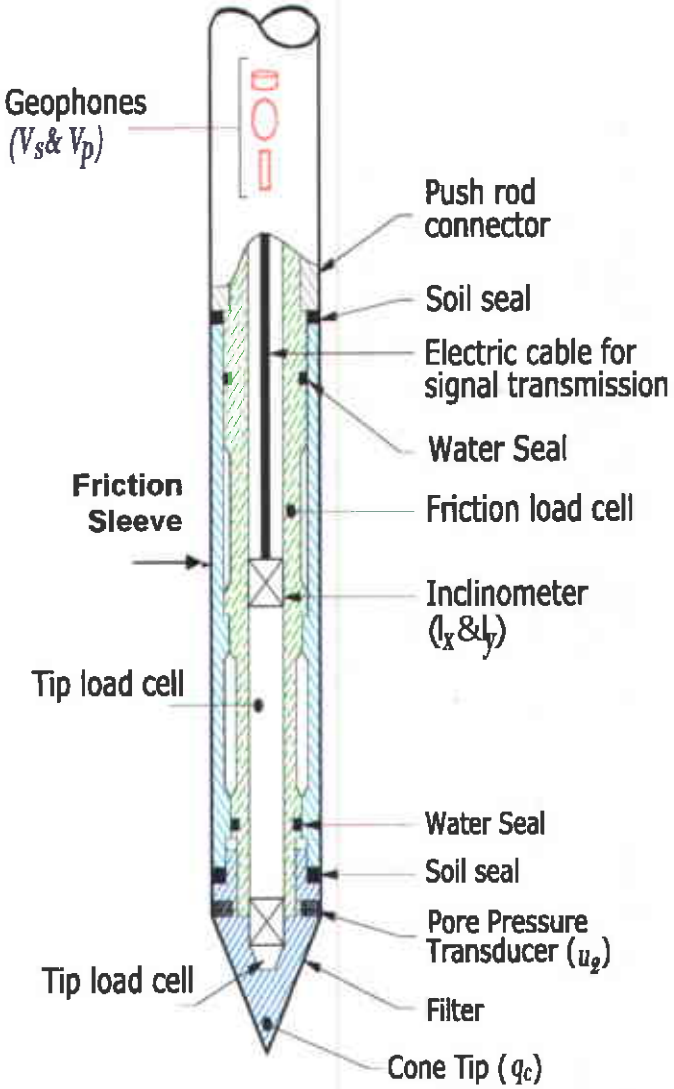


Figure CPT

When the soundings are complete, the test holes are grouted using a Gregg In Situ support rig. The grouting procedure consists of pushing a hollow CPT rod with a "knock out" plug to the termination depth of the test hole. Grout is then pumped under pressure as the tremie pipe is pulled from the hole. Disruption or further contamination to the site is therefore minimized.

Cone Penetration Test Data & Interpretation

Soil behavior type and stratigraphic interpretation is based on relationships between cone bearing (q_c), sleeve friction (f_s), and pore water pressure (u_2). The friction ratio (R_f) is a calculated parameter defined by $100f_s/q_c$ and is used to infer soil behavior type. Generally:

Cohesive soils (clays)

- High friction ratio (R_f) due to small cone bearing (q_c)
- Generate large excess pore water pressures (u_2)

Cohesionless soils (sands)

- Low friction ratio (R_f) due to large cone bearing (q_c)
- Generate very little excess pore water pressures (u_2)

A complete set of baseline readings are taken prior to and at the completion of each sounding to determine temperature shifts and any zero load offsets. Corrections for temperature shifts and zero load offsets can be extremely important, especially when the recorded loads are relatively small. In sandy soils, however, these corrections are generally negligible.

The cone penetration test data collected from your site is presented in graphical form in Appendix CPT. The data includes CPT logs of measured soil parameters, computer calculations of interpreted soil behavior types (SBT), and additional geotechnical parameters. A summary of locations and depths is available in Table 1. Note that all penetration depths referenced in the data are with respect to the existing ground surface.

Soil interpretation for this project was conducted using recent correlations developed by Robertson et al, 1990, *Figure SBT*. Note that it is not always possible to clearly identify a soil type based solely on q_c, f_s, and u_2. In these situations, experience, judgment, and an assessment of the pore pressure dissipation data should be used to infer the soil behavior type.

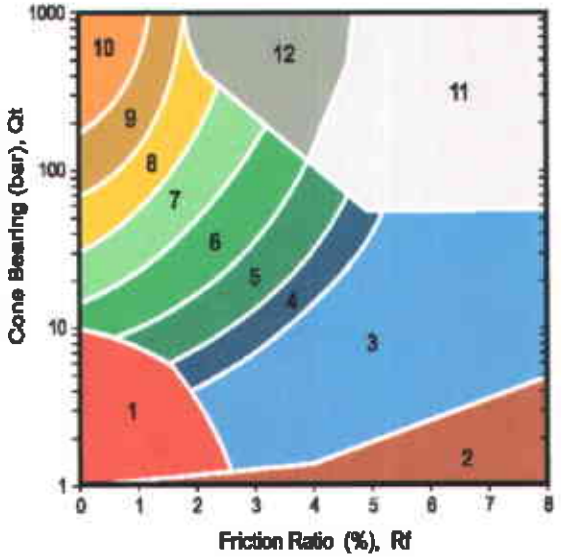


Figure SBT

ZONE	Qt/N	SBT
1	2	Sensitive, fine grained
2	1	Organic materials
3	1	Clay
4	1.5	Silty clay to clay
5	2	Clayey silt to silty clay
6	2.5	Sandy silt to clayey silt
7	3	Silty sand to sandy silt
8	4	Sand to silty sand
9	5	Sand
10	6	Gravely sand to sand
11	1	Very stiff fine grained*
12	2	Sand to clayey sand*

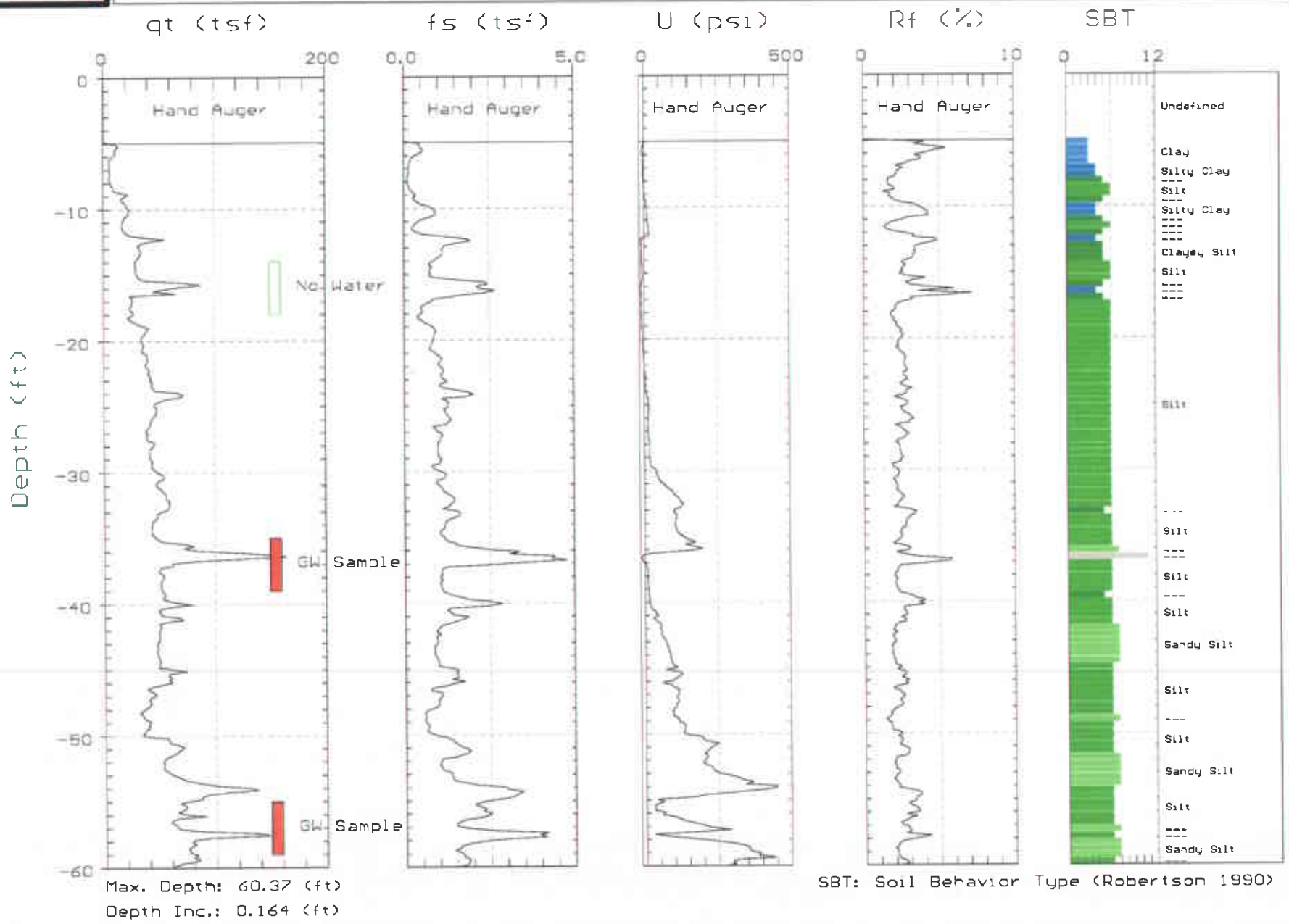
*over consolidated or cemented

GREGG

CAMBRIA

Site: 350 GRAND AVE
Location: CPT-01

Engineer: S.LEWIS
Date: 09:20:05 12:05



Max. Depth: 60.37 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

Groundwater Sampling (GWS)

Gregg In Situ, Inc. conducts groundwater sampling using a Hydropunch® type groundwater sampler, *Figure GWS*. The groundwater sampler has a retrievable stainless steel or disposable PVC screen with steel drop off tip. This allows for samples to be taken at multiple depth intervals within the same sounding location. In areas of slower water recharge, provisions may be made to set temporary PVC well screens during sampling to allow the drill rig to advance to the next sample location while the groundwater is allowed to infiltrate.

The groundwater sampler operates by advancing 1 ¾ inch hollow push rods with the filter tip in a closed configuration to the base of the desired sampling interval. Once at the desired sample depth, the push rods are retracted; exposing the encased filter screen and allowing groundwater to infiltrate hydrostatically from the formation into the inlet screen. A small diameter bailer (approximately ½ or ¾ inch) is lowered through the push rods into the screen section for sample collection. The number of downhole trips with the bailer and time necessary to complete the sample collection at each depth interval is a function of sampling protocols, volume requirements, and the yield characteristics and storage capacity of the formation. Upon completion of sample collection, the push rods and sampler, with the exception of the PVC screen and steel drop off tip are retrieved to the ground surface, decontaminated and prepared for the next sampling event.

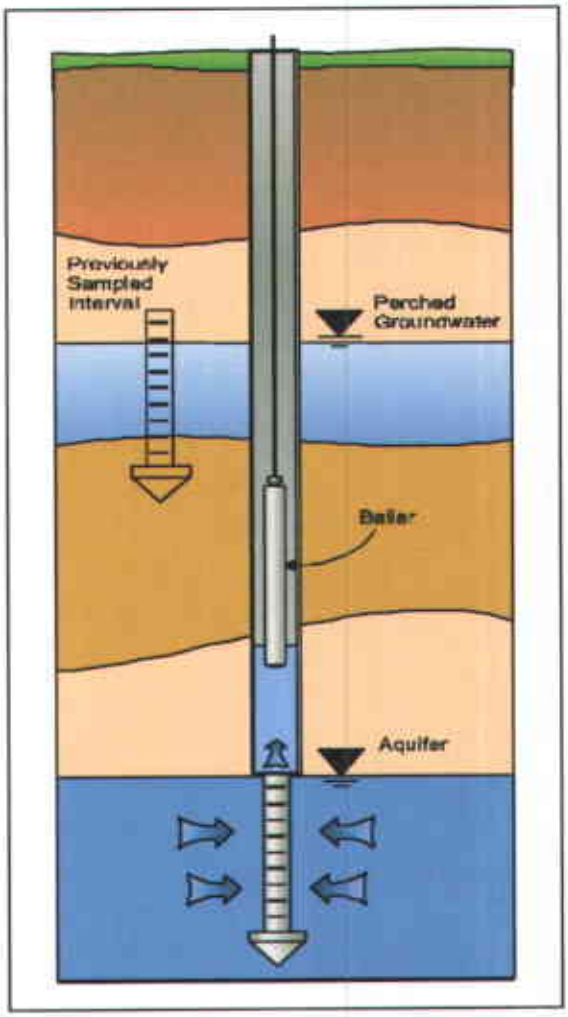


Figure GWS

A summary of the groundwater samples collected, including the sampling date, depth and location identification, is presented in Table 1 and the corresponding CPT plot.

For a detailed reference on direct push groundwater sampling, refer to Zemo et. al., 1992.

Gregg In Situ Interpretations as of June 30, 2004 (Release 1.22A)

Gregg In Situ's interpretation routine provides a tabular output of geotechnical parameters based on current published CPT correlations and is subject to change to reflect the current state of practice. The interpreted values are not considered valid for all soil types. The interpretations are presented only as a guide for geotechnical use and should be carefully scrutinized for consideration in any geotechnical design. Reference to current literature is strongly recommended. Gregg In Situ does not warranty the correctness or the applicability of any of the geotechnical parameters interpreted by the program and does not assume liability for any use of the results in any design or review. Representative hand calculations should be made for any parameter that is critical for design purposes. The end user of the interpreted output should also be fully aware of the techniques and the limitations of any method used in this program. The purpose of this document is to inform the user as to which methods were used and what the appropriate papers and/or publications are for further reference.

The CPT interpretations are based on values of tip, sleeve friction and pore pressure averaged over a user specified interval (e.g. 0.20m). Note that q_t is the tip resistance corrected for pore pressure effects and q_c is the recorded tip resistance. Since all Gregg In Situ cones have equal end area friction sleeves, pore pressure corrections to sleeve friction, f_s, are not required.

The tip correction is: $q_t = q_c + (1-a) \bullet u_2$

where: q_t is the corrected tip resistance
q_c is the recorded tip resistance
u_2 is the recorded dynamic pore pressure behind the tip (u_2 position)
a is the Net Area Ratio for the cone (typically 0.85 for Gregg In Situ cones)

The total stress calculations are based on soil unit weights that have been assigned to the Soil Behavior Type zones, from a user defined unit weight profile or by using a single value throughout the profile. Effective vertical overburden stresses are calculated based on a hydrostatic distribution of equilibrium pore pressures below the water table or from a user defined equilibrium pore pressure profile (this can be obtained from CPT dissipation tests). For over water projects the effects of the column of water have been taken into account as has the appropriate unit weight of water. How this is done depends on where the instruments were zeroed (i.e. on deck or at mud line).

Details regarding the interpretation methods for all of the interpreted parameters are provided in Table 1. The appropriate references cited in Table 1 are listed in Table 2. Where methods are based on charts or techniques that are too complex to describe in this summary the user should refer to the cited material.

The estimated Soil Behavior Types (normalized and non-normalized) are based on the charts developed by Robertson and Campanella shown in Figures 1 and 2. The Bq classification charts are not reproduced in this document but can be reviewed in Lunne, Robertson and Powell (1997) or Robertson (1990).

Where the results of a calculation/interpretation are declared *'invalid'* the value will be represented by the text strings "-9999" or "-9999.0". In some cases the value 0 will be used. Invalid results will occur because of (and not limited to) one or a combination of:

1. Invalid or undefined CPT data (e.g. drilled out section or data gap).

2. Where the interpretation method is inappropriate, for example, drained parameters in an undrained material (and vice versa). The user must evaluate the site specific soil conditions and characteristics to properly apply the appropriate interpretation method.

3. Where interpretation input values are beyond the range of the referenced charts or specified limitations of the interpretation method.

4. Where pre-requisite or intermediate interpretation calculations are invalid.

The parameters selected for output from the program are often specific to a particular project. As such, not all of the interpreted parameters listed in Table 1 may be included in the output files delivered with this report.

The output files are in one format:

File Type	Typical Extensions	Description
Spreadsheet	XLS	IFI, NLI files exported directly to Excel format. Column and cell formatting has been done. Header information is exported to start in Column C allowing the depth columns A and/or B to be duplicated on each printed page without repetition of part of the header information.

Table 1
CPT Interpretation Methods

Interpreted Parameter	Description	Equation	Ref
Depth	Mid Layer Depth *(where interpretations are done at each point then Mid Layer Depth = Recorded Depth)*	*Depth (Layer Top) + Depth (Layer Bottom) / 2.0*	
Elevation	Elevation of Mid Layer based on sounding collar elevation supplied by client	Elevation = Collar Elevation – Depth	
Avgqc	Averaged recorded tip value (q_c)	$Avgqc = \frac{1}{n}\sum_{i=1}^{n} q_c$ *n=1 when interpretations are done at each point*	
Avgqt	Averaged corrected tip (q_t) where: $q_t = q_c + (1-a) \bullet u$	$Avgqt = \frac{1}{n}\sum_{i=1}^{n} q_t$ *n=1 when interpretations are done at each point*	
Avgfs	Averaged sleeve friction (f_s)	$Avgfs = \frac{1}{n}\sum_{i=1}^{n} fs$ *n=1 when interpretations are done at each point*	
AvgRf	Averaged friction ratio (Rf) where friction ratio is defined as: $Rf = 100\% \bullet \frac{fs}{qt}$	$AvgRf = 100\% \bullet \frac{Avgfs}{Avgqt}$ *n=1 when interpretations are done at each point*	
Avgu	Averaged dynamic pore pressure *(u)*	$Avgu = \frac{1}{n}\sum_{i=1}^{n} u_i$ *n=1 when interpretations are done at each point*	
AvgRes	Averaged Resistivity (this data is not always available since it is a specialized test requiring an additional module)	$Avgu = \frac{1}{n}\sum_{i=1}^{n} RESISTIVITY_i$ *n=1 when interpretations are done at each point*	
AvgUVIF	Averaged UVIF ultra-violet induced fluorescence (this data is not always available since it is a specialized test requiring an additional module)	$Avgu = \frac{1}{n}\sum_{i=1}^{n} UVIF_i$ *n=1 when interpretations are done at each point*	
AvgTemp	Averaged Temperature (this data is not always available since it is a specialized test)	$Avgu = \frac{1}{n}\sum_{i=1}^{n} TEMPERATURE_i$ *n=1 when interpretations are done at each point*	

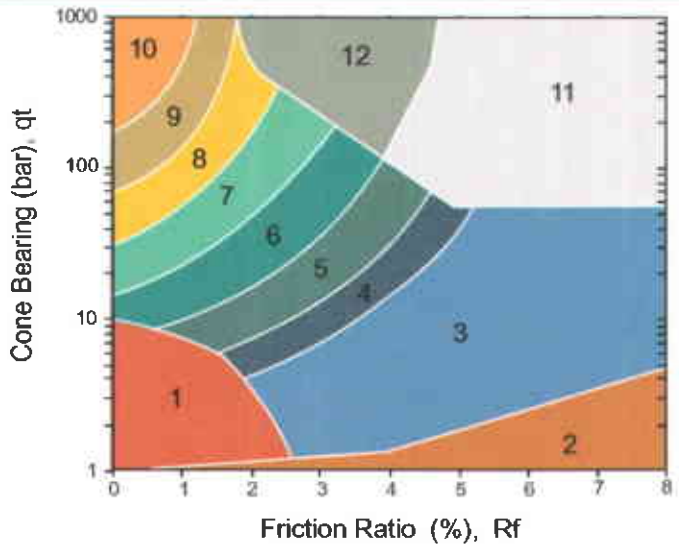
Interpreted Parameter	Description	Equation	Ref
AvgGamma	Averaged Gamma Counts (this data is not always available since it is a specialized test requiring an additional module)	$Avgu = \frac{1}{n}\sum_{i=1}^{n} GAMMA$ *n=1 when interpretations are done at each point*	
SBT	Soil Behavior Type as defined by Robertson and Campanella	See Figure 1	2, 5
SBTn	Normalized Soil Behavior Type as defined by Robertson and Campanella	See Figure 2	2, 5
SBT-BQ	Non-normalized soil behavior type based on the Bq parameter	See Figure 5.7 (reference 5)	2, 5
SBT-BQn	Normalized Soil Behavior base on the Bq parameter	See Figure 5.8 (reference 5) or Figure 3 (reference 2)	2, 5
k	Coefficient of permeability (assigned to each SBT zone)		5
U.Wt.	Unit Weight of soil determined from one of the following user selectable options: 1) uniform value 2) value assigned to each SBT zone 3) user supplied unit weight profile	See references	5
T. Stress σ_v	Total vertical overburden stress at Mid Layer Depth. *A layer is defined as the averaging interval specified by the user. For data interpreted at each point the Mid Layer Depth is the same as the recorded depth.*	$TStress = \sum_{i=1}^{n} \gamma_i h_i$ where γ_i is layer unit weight h_i is layer thickness	
Ueq	Equilibrium pore pressure determined from one of the following user selectable options: 1) hydrostatic from water table depth 2) user supplied profile	For hydrostatic option: $u_{eq} = \gamma_w \bullet (D - D_w)$ where u_{eq} is equilibrium pore pressure γ_w is unit weight of water D is the current depth D_w is the depth to the water table	
E. Stress σ_v'	Effective vertical overburden stress at Mid Layer Depth	$Estress = Tstress - u_{eq}$	
Cn	SPT N_{60} overburden correction factor	$Cn = (\sigma_v')^{-0.5}$ where σ_v' *is in tsf* $0.5 < C_n < 2.0$	
N_{60}	SPT N value at 60% energy calculated from qt/N ratios assigned to each SBT zone. This method has abrupt N value changes at zone boundaries.	*See Figure 1*	4, 5
$(N_1)_{60}$	SPT N_{60} value corrected for overburden pressure	$(N_1)_{60} = Cn \bullet N_{60}$	4
N_{60}Ic	SPT N_{60} values based on the Ic parameter	(qt/pa)/ N_{60} = 8.5 (1 – Ic/4.6)	5
$(N_1)_{60}$Ic	SPT N_{60} value corrected for overburden pressure (using N_{60} I_c) User has 2 options.	1) $(N_1)_{60}Ic = Cn \bullet (N_{60}Ic)$ 2) $q_{c1n}/(N_1)_{60}c = 8.5\ (1 - Ic/4.6)$	4 5
$(N_1)_{60cs}$Ic	Clean sand equivalent SPT $(N_1)_{60}$Ic. User has 3 options.	1) $(N_1)_{60cs}Ic = a + ß((N_1)_{60}c)$ 2) $(N_1)_{60cs}Ic = K_{SPT} * ((N_1)_{60}c)$ 3) $q_{c1ncs})/(N_1)_{60cs}Ic = 8.5\ (1 - Ic/4.6)$ FC = 5%: a = 0, ß=1.0 FC = 35% a = 5.0, ß=1.2 5% < FC < 35% $a = \exp[1.76 - (190/FC^2)]$ $ß = [0.99 + (FC^{1.5}/1000)]$	10 10 5

Interpreted Parameter	Description	Equation	Ref
Q_t	Normalized q_t for Soil Behavior Type classification as defined by Robertson, 1990	$Qt = \frac{qt - \sigma_v}{\sigma'_v}$	2, 5
F_r	Normalized Friction Ratio for Soil Behavior Type classification as defined by Robertson, 1990	$Fr = 100\% * \frac{fs}{qt - \sigma_v}$	2, 5
Bq	Pore pressure parameter	$Bq = \frac{\Delta u}{qt - \sigma_v}$ where: $\Delta u = u - u_{eq}$ and u = dynamic pore pressure u_{eq} = equilibrium pore pressure	1, 5
I_c	Soil index for estimating grain characteristics	$Ic = [(3.47 - \log_{10}Q)^2 + (\log_{10}Fr + 1.22)^2]^{0.5}$ Where: $Q = \left(\frac{qt - \sigma_v}{P_{a2}}\right)\left(\frac{P_a}{\sigma'_v}\right)^n$ And Fr is in percent P_a = atmospheric pressure P_{a2} = atmospheric pressure n varies from 0.5 to 1.0 and is selected in an iterative manner based on the resulting I_c	3, 8
FC	Apparent fines content (%)	$FC=1.75(Ic^{3.25}) - 3.7$ $FC=100$ for $Ic > 3.5$ $FC=0$ for $Ic < 1.26$ $FC = 5\%$ if $1.64 < Ic < 2.36$ AND $F_r<0.5$	3
Ic Zone	This parameter is the Soil Behavior Type zone based on the Ic parameter (valid for zones 2 through 7 on SBTn chart)	Ic < 1.31 Zone = 7 1.31 < Ic < 2.05 Zone = 6 2.05 < Ic < 2.60 Zone = 5 2.60 < Ic < 2.95 Zone = 4 2.95 < Ic < 3.60 Zone = 3 Ic > 3.60 Zone = 2	3
Dr	Relative Density determined from one of the following user selectable options: a) Ticino Sand b) Hokksund Sand c) Schmertmann 1976 d) Jamiolkowski - All Sands	See reference	5
PHI ϕ	Friction Angle determined from one of the following user selectable options: a) Campanella and Robertson b) Durgunoglu and Mitchel c) Janbu	See reference	5
State Parameter	The state parameter is used to describe whether a soil is contractive (SP is positive) or dilative (SP is negative) at large strains based on the work by Been and Jefferies	See reference	8, 6, 5
Es/qt	Intermediate parameter for calculating Youngs Modulus, E, in sands. It is the Y axis of the reference chart.	Based on Figure 5.59 in the reference	5

Interpreted Parameter	Description	Equation	Ref
Youngs Modulus E	Youngs Modulus based on the work by Baldi. There are three types of sands considered in this technique. The user selects the appropriate type for the site from: a) OC Sands b) Aged NC Sands c) Recent NC Sands Each sand type has a family of curves that depend on mean normal stress. The program calculates mean normal stress and linearly interpolates between the two extremes provided in Baldi's chart.	Mean normal stress is evaluated from: $\sigma'_m = \frac{1}{3} \bullet (\sigma'_v + \sigma'_h + \sigma'_h)$ where σ_v'= vertical effective stress σ_h'= horizontal effective stress and $\sigma_h = K_o * \sigma'_v$ with Ko assumed to be 0.5	5
Su	Undrained shear strength - N_{kt} is user selectable	$Su = \frac{qt - \sigma_v}{N_{kt}}$	1, 5
OCR	Over Consolidation Ratio	a) Based on Schmertmann's method involving a plot of S_u/σ_v' /($S_u/\sigma_v')_{NC}$ and OCR where the Su/p' ratio for NC clay is user selectable	9

The following parameters are not presented but may be interpreted for use in liquefaction analysis. Further detailed interpretation may be completed by using the Liquefaction Spreadsheet following the committee recommendations of the NCEER. This Spreadsheet is available for purchase. A promotional document is presented in the Interpretations directory on the Data Disk with this report.

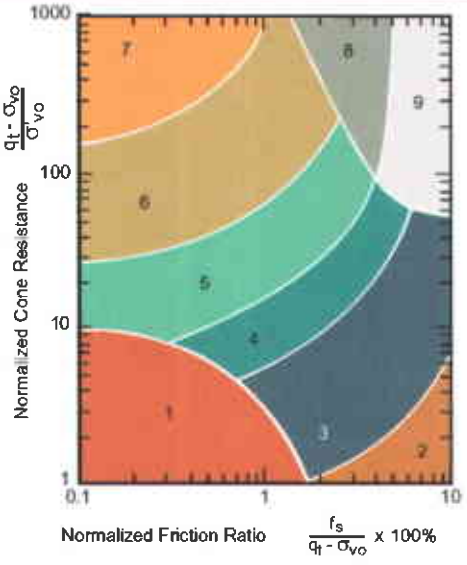
Interpreted Parameter	Description	Equation	Ref
q_{c1}	q_t normalized for overburden stress used for seismic analysis	$q_{c1} = q_t \bullet (Pa/\sigma_v')^{0.5}$ where: Pa = atm. Pressure q_t is in Mpa	3
q_{c1n}	q_{c1} in dimensionless form used for seismic analysis	$q_{c1n} = (q_{c1} / Pa)(Pa/\sigma_v')$ where: Pa = atm. Pressure and n ranges from 0.5 to 0.75 based on Ic.	3
K_{SPT}	Equivalent clean sand factor for $(N_1)60$	$K_{SPT} = 1 + ((0.75/30) * (FC - 5))$	10
K_{CPT}	Equivalent clean sand correction for q_{c1N}	$K_{cpt} = 1.0$ for $I_c \leq 1.64$ $K_{cpt} = f(I_c)$ for $I_c > 1.64$ *(see reference)*	10
q_{c1ncs}	Clean sand equivalent q_{c1n}	$q_{c1ncs} = q_{c1n} \bullet K_{cpt}$	3
CRR	Cyclic Resistance Ratio (for Magnitude 7.5)	$q_{c1ncs} < 50$: $CRR_{7.5} = 0.833 [(q_{c1ncs}/1000] + 0.05$ $50 \leq q_{c1ncs} < 160$: $CRR_{7.5} = 93 [(q_{c1ncs}/1000]^3 + 0.08$	10
CSR	Cyclic Stress Ratio	$CSR = (\tau_{av}/\sigma_v') = 0.65 (a_{max} / g) (\sigma_v / \sigma_v') r_d$ $r_d = 1.0 - 0.00765\ z$ $z \leq 9.15m$ $r_d = 1.174 - 0.0267\ z$ $9.15 < z \leq 23m$ $r_d = 0.744 - 0.008\ z$ $23 < z \leq 30m$ $r_d = 0.50$ $z > 30m$	10
MSF	Magnitude Scaling Factor	See Reference	10
FofS	Factor of Safety against Liquefaction	$FS = (CRR_{7.5} / CSR)\ MSF$	10
Liquefaction Status	Statement indicating possible liquefaction	Takes into account FofS and limitations based I_c and q_{c1ncs}.	10



Zone	qt / N	Soil Behavior Type
1	2	sensitive fine grained
2	1	organic material
3	1	clay
4	1.5	silty clay to clay
5	2	clayey silt to silty clay
6	2.5	sandy silt to clayey silt
7	3	silty sand to sandy silt
8	4	sand to silty sand
9	5	sand
10	6	gravelly sand to sand
11	1	very stiff fine grained *
12	2	sand to clayey sand *

* overconsolidated or cemented

Figure 1 Non-Normalized Behavior Type Classification Chart



Zone	Normalized Soil Behavior Type
1	sensitive fine grained
2	organic material
3	clay to silty clay
4	clayey silt to silty clay
5	silty sand to sandy silt
6	clean sands to silty sands
7	gravelly sand to sand
8	very stiff sand to clayey sand
9	very stiff fine grained

Figure 2 Normalized Behavior Type Classification Chart

Table 2 References

No.	References
1	Robertson, P.K., Campanella, R.G., Gillespie, D. and Greig, J., 1986, "Use of Piezometer Cone Data", Proceedings of InSitu 86, ASCE Specialty Conference, Blacksburg, Virginia.
2	Robertson, P.K., 1990, "Soil Classification Using the Cone Penetration Test", Canadian Geotechnical Journal, Volume 27.
3	Robertson, P.K. and Fear, C.E., 1998, "Evaluating cyclic liquefaction potential using the cone penetration test", Canadian Geotechnical Journal, 35: 442-459.
4	Robertson, P.K. and Wride, C.E., 1998, "Cyclic Liquefaction and its Evaluation Based on SPT and CPT", NCEER Workshop Paper, January 22, 1997
5	Lunne, T., Robertson, P.K. and Powell, J. J. M., 1997, " Cone Penetration Testing in Geotechnical Practice," Blackie Academic and Professional.
6	Plewes, H.D., Davies, M.P. and Jefferies, M.G., 1992, "CPT Based Screening Procedure for Evaluating Liquefaction Susceptibility", 45th Canadian Geotechnical Conference, Toronto, Ontario, October 1992.
7	Jefferies, M.G. and Davies, M.P., 1993. "Use of CPTu to Estimate equivalent N_{60}", Geotechnical Testing Journal, 16(4): 458-467.
8	Been, K. and Jefferies, M.P., 1985, "A state parameter for sands", Geotechnique, 35(2), 99-112.
9	Schmertmann, 1977, "Guidelines for Cone Penetration Test Performance and Design", Federal Highway Administration Report FHWA-TS-78-209, U.S. Department of Transportation
10	Proceedings of theNCEER Workshop on Evaluation of Liquefaction Resistance of Soils, Salt LakeCity, 1996. Chaired by Leslie Youd.

Appendix D

Disposal Confirmation and Profile Analytical Report

RECEIVED
OCT 2 8 2005
BY:

Hazardous Waste Hauler (Registration # 2843)
P.O. Box 292547 * Sacramento, CA 95829 * FAX 916-381-1573

Disposal Confirmation

Request for Transportation Received: 10/07/05

Consultant Information

Company:	Cambria
Contact:	Tom Magney
Phone:	707-933-2366
Fax:	707-935-6649

Site Information

PO #	
Street Address:	350 Grand Ave.
City, State, ZIP:	Oakland, Ca
Customer:	Shell Oil Company RESA-0023-LDC
RIPR #:	47916
SAP # / Location:	NA
Incident #:	98995755
Location / WIC #:	NA
Environmental Engineer:	Denis Brown
Material Description:	Soil
Estimated Quantity:	1 Drum
Service Requested Date:	Within two weeks
Disposal Facility:	Forward Landfill
Contact:	Scott
Phone:	800 204-4242
Approval #:	5869
Date of Disposal:	10/11/05
Actual Tonnage	.24 Tons
Transporter:	Manley & Sons Trucking, Inc.
Contact:	Jennifer Rogers
Phone:	916 381-6864
Fax:	916 381-1573
Invoice:	200510-16
Date of Invoice:	10/17/05

☐ **Keller Canyon Sanitary Landfill**
901 Bailey Road
Pittsburg, CA 94565
Phone (925) 458-9800
Fax (925) 458-9891

☐ **Ox Mountain Sanitary Landfill**
12310 San Mateo Road
Half Moon Bay, CA 94019
Phone (650) 726-1819
Fax (650) 726-9183

☐ **Newby Island Sanitary Landfill**
1601 Dixon Landing Road
Milpitas, CA 95035
Phone (408) 945-2800
Fax (408) 262-2871

☐ **Forward Landfill**
9999 S. Austin Road
Manteca, CA 95336
Phone (209) 982-4298
Fax (209) 982-1009

NON-HAZARDOUS WASTE MANIFEST

GENERATOR: ~~Equilon Enterprises, LLC~~

MAILING ADDRESS: ~~P.O. Box 7869~~

CITY, STATE, ZIP: ~~Burbank, CA 91510~~

PHONE: ~~707-865-0251~~

CONTACT PERSON: ~~Denis Brown~~

SIGNATURE OF AUTHORIZED AGENT / TITLE: * ~~Tim Manley~~ | DATE:

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or title 22 of the California code of regulations, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

WASTE TYPE:

- ☐ DISPOSAL
- ☐ CONSTRUCTION
- ☐ DEBRIS
- ☐ SPECIAL WASTE
- ☐ SLUDGE
- ☐ WOOD
- ☐ OTHER

GENERATING FACILITY: 350 Grand Ave Oakland, CA

WASTE ACCEPTANCE NO.

– # 5869

REQUIRED PERSONAL PROTECTIVE EQUIPMENT

☐ GLOVES ☐ GOGGLES ☐ RESPIRATOR ☐ HARD HAT
☐ TY-VEK ☐ OTHER

SPECIAL HANDLING PROCEDURES:

RECEIVING FACILITY

RIPR # 47916 SAP#
Incident # ~~98995755~~ WIC #:

TRANSPORTER: ~~Manley & Sons Trucking, Inc.~~

ADDRESS: ~~8390 Elder Creek Rd.~~

CITY, STATE, ZIP: Sacramento, CA 95828

PHONE: ~~(916) 381-6604~~

SIGNATURE OF AUTHORIZED AGENT OR DRIVER: * | DATE: 10/11/05

NOTES:

VEHICLE LICENSE NUMBER	TRUCK NUMBER
6766C02	42

END DUMP	BOTTOM DUMP	TRANSFER
☐	☐	☐

ROLL-OFF(S)	FLAT-BED	VAN	DRUMS
☐	☐	☐	☐

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

REMARKS

FACILITY TICKET NUMBER

SIGNATURE OF AUTHORIZED AGENT: * | DATE

CUBIC YARDS: **1 Drum**

DISPOSAL METHOD: (TO BE COMPLETED BY LANDFILL)

	DISPOSE	OTHER
☐ SOIL		
☐ CONSTRUCTION DEBRIS		
☐ NON-FRIABLE ASBESTOS		
☐ WOOD		
☐ ASH		
☐ SPECIAL OTHER		

SCHEDULING MUST BE MADE PRIOR TO 3:00 P.M. THE DAY PRIOR TO EXPECTED ARRIVAL • ANY UNSCHEDULED LOADS ARE SUBJECT TO REFUSAL UPON ARRIVAL. ONGOING DAILY DELIVERIES MUST BE SCHEDULED WITH THE LANDFILL THE DAY BEFORE.

GENERATOR COPY

MANIFEST # 412951

FORWARD INCORPORATED

9999 South Austin Road
Manteca, CA 95336
Landfill: (209) 982-4298 Fax (209) 982-1009
Resource Recovery: (209) 982-4936

P.O. Box 6336
Stockton, CA 95206
Main Office: (209) 466-4482
Fax: (209) 465-0631

DATE _____

TRUCK LIC.# _____

CUSTOMER NO. _____ TRUCK NO. _____ TRAILER LIC. # _____

BILL TO: _____

230272

SIZE YDS.	DESCRIPTION	$ AMOUNT	NOTES
	☐ REFUSE ☐ TREATED WOOD		GROSS
	☐ SLUDGE ☐ ASH		TARE
	☐ ASBESTOS ☐ NON-FRIABLE ASBESTOS		NET
	☐ I SOIL ☐ III SOIL ☐ COVER SOIL		TONS 0.24
	☐ STOCKPILE		
	TOTAL ▶		

IN _____ A.M./P.M.

Signed _____ OUT _____ A.M./P.M.

SEVERN TRENT STL

Submission#: 2005-09-0589

Cambria Environmental Sonoma

October 04, 2005

270 Perkins Street
Sonoma, CA 95476

Attn.: Ana Friel

Project#: 247-0715
Project: 98995755
Site: 350 Grand Avenue, Oakland, CA

Attached is our report for your samples received on 09/22/2005 10:10
This report has been reviewed and approved for release. Reproduction of this report is permitted only in its entirety.

Please note that any unused portion of the samples will be discarded after 11/06/2005 unless you have requested otherwise.
We appreciate the opportunity to be of service to you. If you have any questions,

You can also contact me via email. My email address is: mbrewer@stl-inc.com

Sincerely,

Melissa Brewer

Melissa Brewer
Project Manager

SEVERN TRENT STL

Submission: 2005-09-0589

Gas/BTEX Fuel Oxygenates by 8260B (C6-C12)

Cambria Environmental Sonoma

Attn.: Ana Friel

270 Perkins Street
Sonoma, CA 95476
Phone: (707) 268-3812 Fax: (707) 268-8180

Project: 247-0715
98995755

Received: 09/22/2005 10:10

Site: 350 Grand Avenue, Oakland, CA

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
SP-1	09/21/2005 08:00	Soil	1

Gas/BTEX Fuel Oxygenates by 8260B (C6-C12)

Cambria Environmental Sonoma

Attn.: Ana Friel

270 Perkins Street
Sonoma, CA 95476
Phone: (707) 268-3812 Fax: (707) 268-8180

Project: 247-0715
98995755

Received: 09/22/2005 10:10

Site: 350 Grand Avenue, Oakland, CA

Prep(s):	5030B	Test(s):	8260B
Sample ID:	SP-1	Lab ID:	2005-09-0589 - 1
Sampled:	09/21/2005 08:00	Extracted:	9/30/2005 14:26
Matrix:	Soil	QC Batch#:	2005/09/30-1B.62

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline [Shell]	ND	1.0	mg/Kg	1.00	09/30/2005 14:26	
Benzene	ND	0.0050	mg/Kg	1.00	09/30/2005 14:26	
Toluene	ND	0.0050	mg/Kg	1.00	09/30/2005 14:26	
Ethyl benzene	ND	0.0050	mg/Kg	1.00	09/30/2005 14:26	
Total xylenes	ND	0.0050	mg/Kg	1.00	09/30/2005 14:26	
Surrogate(s)						
1,2-Dichloroethane-d4	94.7	76-124	%	1.00	09/30/2005 14:26	
Toluene-d8	97.6	75-116	%	1.00	09/30/2005 14:26	

Gas/BTEX Fuel Oxygenates by 8260B (C6-C12)

Cambria Environmental Sonoma

Attn.: Ana Friel

270 Perkins Street
Sonoma, CA 95476
Phone: (707) 268-3812 Fax: (707) 268-8180

Project: 247-0715
98995755

Received: 09/22/2005 10:10

Site: 350 Grand Avenue, Oakland, CA

Batch QC Report

Prep(s): 5030B — Test(s): 8260B

Method Blank — Soil — **QC Batch # 2005/09/30-1B.62**

MB: 2005/09/30-1B.62-005 — Date Extracted: 09/30/2005 09:05

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline [Shell]	ND	1.0	mg/Kg	09/30/2005 09:05	
Benzene	ND	0.0050	mg/Kg	09/30/2005 09:05	
Toluene	ND	0.0050	mg/Kg	09/30/2005 09:05	
Ethyl benzene	ND	0.0050	mg/Kg	09/30/2005 09:05	
Total xylenes	ND	0.0050	mg/Kg	09/30/2005 09:05	
Surrogates(s)					
1,2-Dichloroethane-d4	89.8	76-124	%	09/30/2005 09:05	
Toluene-d8	99.6	75-116	%	09/30/2005 09:05	

Gas/BTEX Fuel Oxygenates by 8260B (C6-C12)

Cambria Environmental Sonoma

Attn.: Ana Friel

270 Perkins Street
Sonoma, CA 95476
Phone: (707) 268-3812 Fax: (707) 268-8180

Project: 247-0715
98995755

Received: 09/22/2005 10:10

Site: 350 Grand Avenue, Oakland, CA

Batch QC Report

Prep(s): 5030B — Test(s): 8260B

Laboratory Control Spike — **Soil** — **QC Batch # 2005/09/30-1B.62**

LCS 2005/09/30-1B.62-039 — Extracted: 09/30/2005 — Analyzed: 09/30/2005 08:39
LCSD

Compound	Conc. mg/Kg		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Benzene	0.0462		0.05	92.4			69-129	20		
Toluene	0.0464		0.05	92.8			70-130	20		
Surrogates(s)										
1,2-Dichloroethane-d4	410		500	82.0			76-124			
Toluene-d8	486		500	97.2			75-116			

Gas/BTEX Fuel Oxygenates by 8260B (C6-C12)

Cambria Environmental Sonoma

Attn.: Ana Friel

270 Perkins Street
Sonoma, CA 95476
Phone: (707) 268-3812 Fax: (707) 268-8180

Project: 247-0715
98995755

Received: 09/22/2005 10:10

Site: 350 Grand Avenue, Oakland, CA

Batch QC Report

Prep(s): 5030B — Test(s): 8260B

Matrix Spike (MS / MSD) — **Soil** — **QC Batch # 2005/09/30-1B.62**

MS/MSD — Lab ID: 2005-09-0669 - 003

MS: 2005/09/30-1B.62-056 — Extracted: 09/30/2005 — Analyzed: 09/30/2005 10:56 — Dilution: 1.00

MSD: 2005/09/30-1B.62-022 — Extracted: 09/30/2005 — Analyzed: 09/30/2005 11:22 — Dilution: 1.00

Compound	Conc. mg/Kg			Spk.Level	Recovery %			Limits %		Flags	
	MS	MSD	Sample	mg/Kg	MS	MSD	RPD	Rec.	RPD	MS	MSD
Benzene	0.0485	0.0514	ND	0.049505	98.0	103.4	5.4	69-129	20		
Toluene	0.0469	0.0500	ND	0.049505	94.7	100.6	6.0	70-130	20		
Surrogate(s)											
1,2-Dichloroethane-d4	407	420		500	81.4	84.0		76-124			
Toluene-d8	491	470		500	98.2	94.0		75-116			

SEVERN TRENT STL

Submission: 2005-09-0589

Total Lead

Cambria Environmental Sonoma
Attn.: Ana Friel

270 Perkins Street
Sonoma, CA 95476
Phone: (707) 268-3812 Fax: (707) 268-8180

Project: 247-0715
98995755

Received: 09/22/2005 10:10

Site: 350 Grand Avenue, Oakland, CA

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
SP-1	09/21/2005 08:00	Soil	1

Total Lead

Cambria Environmental Sonoma

Attn.: Ana Friel

270 Perkins Street
Sonoma, CA 95476
Phone: (707) 268-3812 Fax: (707) 268-8180

Project: 247-0715
98995755

Received: 09/22/2005 10:10

Site: 350 Grand Avenue, Oakland, CA

Prep(s):	3050B	Test(s):	6010B
Sample ID:	SP-1	Lab ID:	2005-09-0589 - 1
Sampled:	09/21/2005 08:00	Extracted:	10/3/2005 08:43
Matrix:	Soil	QC Batch#:	2005/10/03-02.15

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Lead	41	1.0	mg/Kg	1.00	10/03/2005 19:42	

Total Lead

Cambria Environmental Sonoma
Attn.: Ana Friel

270 Perkins Street
Sonoma, CA 95476
Phone: (707) 268-3812 Fax: (707) 268-8180

Project: 247-0715
98995755

Received: 09/22/2005 10:10

Site: 350 Grand Avenue, Oakland, CA

Batch QC Report

Prep(s): 3050B — Test(s): 6010B
Method Blank — **Soil** — **QC Batch # 2005/10/03-02.15**
MB: 2005/10/03-02 15-001 — Date Extracted: 10/03/2005 08:43

Compound	Conc.	RL	Unit	Analyzed	Flag
Lead	ND	1.0	mg/Kg	10/03/2005 18:56	

Total Lead

Cambria Environmental Sonoma

Attn.: Ana Friel

270 Perkins Street
Sonoma, CA 95476
Phone: (707) 268-3812 Fax: (707) 268-8180

Project: 247-0715
98995755

Received: 09/22/2005 10:10

Site: 350 Grand Avenue, Oakland, CA

Batch QC Report

Prep(s): 3050B

Test(s): 6010B

Laboratory Control Spike | **Soil** | **QC Batch # 2005/10/03-02.15**

LCS 2005/10/03-02.15-002 Extracted: 10/03/2005 Analyzed: 10/03/2005 18:59

LCSD 2005/10/03-02.15-003 Extracted: 10/03/2005 Analyzed: 10/03/2005 19:03

Compound	Conc. mg/Kg		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Lead	100	101	100.0	100.0	101.0	1.0	80-120	20		

Calscience Environmental Laboratories, Inc.

October 05, 2005

Melissa Brewer
Severn Trent Laboratories, Inc.
1220 Quarry Lane
Pleasanton, CA 94566-4756

Subject: **Calscience Work Order No.: 05-10-0177**
Client Reference: 2005-09-0589 / 247-0715 / 98995755

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 10/5/2005 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Systems Manual, applicable standard operating procedures, and other related documentation. The original report of any subcontracted analysis is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

Ranjit K. K. Clarke

Calscience Environmental
Laboratories, Inc.
Ranjit Clarke
Project Manager

Calscience Environmental Laboratories, Inc.

Analytical Report

Severn Trent Laboratories, Inc.
1220 Quarry Lane
Pleasanton, CA 94566-4756

Date Received: 10/05/05
Work Order No: 05-10-0177
Preparation: DHS LUFT
Method: DHS LUFT

Project: 2005-09-0589 / 247-0715 / 98995755

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
SP-1	05-10-0177-1	09/21/05	Solid	10/05/05	10/05/05	051005L05

Parameter	Result	RL	DF	Qual	Units
Organic Lead	ND	1.00	1		mg/kg

Method Blank	099-10-020-472	N/A	Solid	10/05/05	10/05/05	051005L05

Parameter	Result	RL	DF	Qual	Units
Organic Lead	ND	1.00	1		mg/kg

RL - Reporting Limit DF - Dilution Factor Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

Severn Trent Laboratories, Inc.
1220 Quarry Lane
Pleasanton, CA 94566-4756

Date Received: 10/05/05
Work Order No: 05-10-0177
Preparation: DHS LUFT
Method: DHS LUFT

Project 2005-09-0589 / 247-0715 / 98995755

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
SP-1	Solid	FLAA	10/05/05	10/05/05	051005S05

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Organic Lead	64	64	22-148	1	0-18	

RPD - Relative Percent Difference, CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Laboratory Control Sample

Severn Trent Laboratories, Inc.
1220 Quarry Lane
Pleasanton, CA 94566-4756

Date Received: N/A
Work Order No: 05-10-0177
Preparation: DHS LUFT
Method: DHS LUFT

Project: 2005-09-0589 / 247-0715 / 98995755

Quality Control Sample ID	Matrix	Instrument	Date Analyzed	Lab File ID	LCS Batch Number
099-10-020-472	Solid	FLAA	10/05/05	NONE	051005L05

Parameter	Conc Added	Conc Recovered	LCS %Rec	%Rec CL	Qualifiers
Organic Lead	25.0	25.0	100	72-126	

RPD - Relative Percent Difference; CL - Control Limit

Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

Work Order Number: 05-10-0177

Qualifier	Definition
*	See applicable analysis comment.
1	Surrogate compound recovery was out of control due to a required sample dilution, therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike or Matrix Spike Duplicate compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification.
5	The PDS/PDSD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported with no further corrective action required.
A	Result is the average of all dilutions, as defined by the method.
B	Analyte was present in the associated method blank.
C	Analyte presence was not confirmed on primary column.
E	Concentration exceeds the calibration range.
H	Sample received and/or analyzed past the recommended holding time.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
N	Nontarget Analyte.
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
U	Undetected at the laboratory method detection limit.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

SEVERN TRENT **STL**

Chain of Custody (0177)

Date Shipped: 10/4/2005

2005-09-0589 - 1

From:

STL San Francisco (CL)
1220 Quarry Lane
Pleasanton, CA 94566-4756

Project Manager	Melissa Brewer
Phone	
Ext	
Fax	(925) 484-1096
Email	mbrewer@stl-inc.com

To:

CalScience Analytical Laboratory
7440 Lincoln Way
Garden Grove, CA 92641

Phone:	(714) 895-5494	Ext
Fax:	() -	
Contact:	Sample Control	
Phone	(714) 895-5494	Ext

CL Submission #: 2005-09-0589
CL PO #:

Project #: 247-0715
Project Name: 98995755
EDF Global ID: T0600101255

Client Sample ID / Analyte	#	Sample Date/Time	Matrix / Method	TAT
SP-1	1	9/21/2005 8:00:00AM	Soil	
EDF Field ID: SP-1				
Subcontract - Organic Lead /* HOLD TIME EXPIRES 10/5/05 */ /* Shipped 10/4/05 */			LUFT	5 Day

PLEASE INCLUDE QC WITH FAXED AND HARD-COPY RESULTS

RELINQUISHED BY: 1	RELINQUISHED BY: 2	RELINQUISHED BY 3
Signature: [signature] Time: 1600	Signature Time	Signature Time: 10:30
Printed Name: T. Bullock Date: 10/4/05	Printed Name Date	Printed Name Date: 10.5.05
Company: STL-SF	Company	Company: STL

RECEIVED BY 1	RECEIVED BY: 2	RECEIVED BY 3
Signature Time	Signature Time	Signature: [signature] Time: 10:30
Printed Name Date	Printed Name Date	Printed Name: Shon Toma Date: 10.5.05
Company	Company	Company: CTL

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 05 - 10 - 0177

Cooler 1 of 1

SAMPLE RECEIPT FORM

CLIENT: STL DATE: 10-5-05

TEMPERATURE – SAMPLES RECEIVED BY:

CALSCIENCE COURIER:

_____ Chilled, cooler with temperature blank provided.
_____ Chilled, cooler without temperature blank.
_____ Chilled and placed in cooler with wet ice.
_____ Ambient and placed in cooler with wet ice.
_____ Ambient temperature.
_____ °C Temperature blank.

LABORATORY (Other than Calscience Courier):

3.2 °C Temperature blank.
_____ °C IR thermometer.
_____ Ambient temperature.

Initial: [signature]

CUSTODY SEAL INTACT:

Sample(s): _____ Cooler: _____ No (Not Intact): _____ Not Applicable (N/A): ✓

Initial: [signature]

SAMPLE CONDITION:

	Yes	No	N/A
Chain-Of-Custody document(s) received with samples	✓		
Sample container label(s) consistent with custody papers	✓		
Sample container(s) intact and good condition	✓		
Correct containers for analyses requested	✓		
Proper preservation noted on sample label(s)			✓
VOA vial(s) free of headspace			✓
Tedlar bag(s) free of condensation			✓

Initial: [signature]

COMMENTS:

2005-09- SHELL Chain Of Custody Record

99816

STL-San Francisco

1220 Quarry Lane

Pleasanton, CA 94566

(925) 484-1919 (925) 484-1096 fax

Shell Project Manager to be Invoiced:

☐ SCIENCE & ENGINEERING ☒ TECHNICAL SERVICES ☐ CRMT HOUSTON

Denis Brown

INCIDENT NUMBER (S&E ONLY): 98995755

SAP or CRMT NUMBER (TS/CRMT):

DATE: 9-21-05

PAGE: 1 of 1

SAMPLING COMPANY: Cambria Environmental Technology, Inc.	LOG CODE: CETS	SITE ADDRESS (Street and City): 350 Grand Avenue, Oakland, CA	GLOBAL ID NO.: T0600101255
ADDRESS: 270 Perkins Street, Sonoma, CA 95476		EDF DELIVERABLE TO (Responsible Party or Designee): Susan Lukaszewicz	PHONE NO.: 707-933-2376
PROJECT CONTACT (Hardcopy or PDF Report to): Ana Friel		E-MAIL: sonomaedf@cambria-env.com	CONSULTANT PROJECT NO.: 247-0715
TELEPHONE: 707-268-3812	FAX: 707-935-6649	E-MAIL: afriel@cambria-env.com	SAMPLER NAME(S) (Print): Scott Lewis

LAB USE ONLY

TURNAROUND TIME (BUSINESS DAYS): ☒ 10 DAYS ☐ 5 DAYS ☐ 72 HOURS ☐ 48 HOURS ☐ 24 HOURS ☐ LESS THAN 24 HOURS

☐ LA - RWQCB REPORT FORMAT ☐ UST AGENCY: _____

GC/MS MTBE CONFIRMATION: HIGHEST _____ HIGHEST per BORING _____ ALL _____

SPECIAL INSTRUCTIONS OR NOTES: CHECK BOX IF EDD IS NOT NEEDED ☐

cc: Tom Magney at tmagney@cambria-env.com

REQUESTED ANALYSIS

LAB USE ONLY	Field Sample Identification	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	TPH - Purgeable	TPH - Extractable (8015m)	BTEX	MTBE	tBA	5 Oxygenates	1,2 DCA and EDB	Ethanol	Methanol	VOCs by 8260B	Semi-Volatiles by 8270C	Lead ☐ Total ☐ STLC ☐ TCLP	LUFT5 ☐ Total ☐ STLC ☐ TCLP	CAM17 ☐ Total ☐ STLC ☐ TCLP	Test for Disposal	Perchlorate Scott					
	SP-1A through SP-1D	9/21	0800	SO	4															K						

FIELD NOTES: Container/Preservative or PID Readings or Laboratory Notes

TEMPERATURE ON RECEIPT C°: 2

Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Scott Lewis	Sonoma Office	9-21-05	1520
Sonoma Office		9-22-05	1010
		9-22-05	1500

DISTRIBUTION: White with final report; Green to File, Yellow and Pink to Client.

10/15/00 Revision

RESIDUAL MANAGEMENT PROCEDURE

ISSUED DATE: 08/01/01
CANCELS ISSUE:
ISSUED BY: LRR

ESIDUAL STREAM: SOIL WITH UNLEADED GASOLINE

ENDOR: ALLIED-BFI

OCATION: ALLIED WASTE - MANTECA
9999 SOUTH AUSTIN ROAD
MANTECA, CA 95336

ALIFORNIA - TRANSPORTATION AND RETAIL

TEX - EPA 8021B/8260B (IF BENZENE IS > OR = TO 10 MG/KG THEN TCLP BENZENE IS REQUIRED)

AM METALS = TTLC METALS - LEAD ONLY
STLC ON ALL TTLC METALS 10 TIMES STLC MAXIMUM
TTLC LEAD=>13 MG/KG REQUIRES ORGANIC LEAD ANALYSIS
IF ANY TTLC TOTAL METAL IS > OR = TO 20 TIMES TCLP REGULATORY LEVELS, TCLP IS REQUIRED

OTAL PETROLEUM HYDROCARBONS, METHOD 418.1 OR 8015 - GASOLINE

~~TBE METHOD 8260B (GC/MS)~~

QUATIC BIOASSAY (FISH TOX) IS ONLY TO BE RUN ON SAMPLES > OR = TO 5000 PPM TPH. AQUATIC IOASSAY (FISH TOX) = PART 800 OF STANDARD METHODS FOR THE EXAMINATION OF WATER AND VASTEWATER (15TH EDITION)

ABORATORY INSTRUCTIONS (MINIMUM GUIDELINES ONLY)
ALTERNATE APPROVED TEST METHODS PER SW846 ARE ALSO ACCEPTABLE
ALL REQUIRED TESTS ON COMPOSITE (max 4:1)
LABORATORY IS TO SUPPLY QA/QC INFORMATION WITH ALL ANALYTICAL REPORTS
~~MAIL OR FAX ALL ANALYSIS TO THE CENTRALIZED RESIDUAL MANAGEMENT TEAM~~

PROCEDURE ORIGINAL DATE: 08/01/01
PROCEDURE REVISED DATE: 08/01/01

6850-60-2005

Appendix E

Certified Analytical Report

SEVERN TRENT STL

Submission#: 2005-09-0621

Cambria Environmental Sonoma

October 05, 2005

270 Perkins Street
Sonoma, CA 95476

Attn.: Ana Friel

Project#: 247-0715
Project: 98995755
Site: 350 Grand Avenue, Oakland, CA

Attached is our report for your samples received on 09/22/2005 10:10
This report has been reviewed and approved for release. Reproduction of this report is permitted only in its entirety.

Please note that any unused portion of the samples will be discarded after 11/06/2005 unless you have requested otherwise.
We appreciate the opportunity to be of service to you. If you have any questions,

You can also contact me via email. My email address is: mbrewer@stl-inc.com

Sincerely,

Melissa Brewer

Melissa Brewer
Project Manager

SEVERN TRENT STL

Submission: 2005-09-0621

Gas/BTEXFuel Oxygenates by 8260B (High Level)

Cambria Environmental Sonoma
Attn.: Ana Friel

270 Perkins Street
Sonoma, CA 95476
Phone: (707) 268-3812 Fax: (707) 268-8180

Project: 247-0715
98995755

Received: 09/22/2005 10:10

Site: 350 Grand Avenue, Oakland, CA

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
B-1-5.5	09/21/2005 08:12	Soil	9

Gas/BTEXFuel Oxygenates by 8260B (High Level)

Cambria Environmental Sonoma
Attn.: Ana Friel

270 Perkins Street
Sonoma, CA 95476
Phone: (707) 268-3812 Fax: (707) 268-8180

Project: 247-0715
98995755

Received: 09/22/2005 10:10

Site: 350 Grand Avenue, Oakland, CA

Prep(s):	5030B	Test(s):	8260B
Sample ID:	B-1-5.5	Lab ID:	2005-09-0621 - 9
Sampled:	09/21/2005 08:12	Extracted:	10/4/2005 00:49
Matrix:	Soil	QC Batch#:	2005/10/03-3A.69

Analysis Flag: L1 (See Legend and Note Section)

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline [Shell]	ND	50	mg/Kg	1.00	10/04/2005 00:49	
Benzene	ND	0.50	mg/Kg	1.00	10/04/2005 00:49	
Toluene	ND	0.50	mg/Kg	1.00	10/04/2005 00:49	
Ethyl benzene	ND	0.50	mg/Kg	1.00	10/04/2005 00:49	
Total xylenes	ND	0.50	mg/Kg	1.00	10/04/2005 00:49	
Methyl tert-butyl ether (MTBE)	ND	0.50	mg/Kg	1.00	10/04/2005 00:49	
Surrogate(s)						
1,2-Dichloroethane-d4	102.0	53-129	%	1.00	10/04/2005 00:49	
Toluene-d8	92.1	47-136	%	1.00	10/04/2005 00:49	

Gas/BTEXFuel Oxygenates by 8260B (High Level)

Cambria Environmental Sonoma

Attn.: Ana Friel

270 Perkins Street
Sonoma, CA 95476
Phone: (707) 268-3812 Fax: (707) 268-8180

Project: 247-0715
98995755

Received: 09/22/2005 10:10

Site: 350 Grand Avenue, Oakland, CA

Batch QC Report

Prep(s): 5030B
Method Blank
MB: 2005/10/03-3A.69-028

Soil

Test(s): 8260B
QC Batch # 2005/10/03-3A.69
Date Extracted: 10/04/2005 00:28

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline [Shell]	ND	50	mg/Kg	10/04/2005 00:28	
Benzene	ND	0.50	mg/Kg	10/04/2005 00:28	
Toluene	ND	0.50	mg/Kg	10/04/2005 00:28	
Ethyl benzene	ND	0.50	mg/Kg	10/04/2005 00:28	
Total xylenes	ND	0.50	mg/Kg	10/04/2005 00:28	
Methyl tert-butyl ether (MTBE)	ND	0.50	mg/Kg	10/04/2005 00:28	
Surrogates(s)					
1,2-Dichloroethane-d4	99.2	53-129	%	10/04/2005 00:28	
Toluene-d8	95.9	47-136	%	10/04/2005 00:28	

Gas/BTEXFuel Oxygenates by 8260B (High Level)

Cambria Environmental Sonoma

Attn.: Ana Friel

270 Perkins Street
Sonoma, CA 95476
Phone: (707) 268-3812 Fax: (707) 268-8180

Project: 247-0715
98995755

Received: 09/22/2005 10:10

Site: 350 Grand Avenue, Oakland, CA

Batch QC Report

Prep(s): 5030B — Test(s): 8260B

Laboratory Control Spike — Soil — QC Batch # 2005/10/03-3A.69

LCS 2005/10/03-3A.69-046 — Extracted: 10/03/2005 — Analyzed: 10/03/2005 23:46

LCSD 2005/10/03-3A.69-007 — Extracted: 10/04/2005 — Analyzed: 10/04/2005 00:07

Compound	Conc. mg/Kg		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Benzene	9.61	9.53	10	96.1	95.3	0.8	69-129	20		
Toluene	9.91	9.74	10	99.1	97.4	1.7	70-130	20		
Methyl tert-butyl ether (MTBE)	9.88	10.5	10	98.8	105.0	6.1	65-165	20		
Surrogates(s)										
1,2-Dichloroethane-d4	221	226	250	88.4	90.4		53-129			
Toluene-d8	239	234	250	95.6	93.6		47-136			

Gas/BTEXFuel Oxygenates by 8260B (High Level)

Cambria Environmental Sonoma

Attn.: Ana Friel

270 Perkins Street
Sonoma, CA 95476
Phone: (707) 268-3812 Fax: (707) 268-8180

Project: 247-0715
98995755

Received: 09/22/2005 10:10

Site: 350 Grand Avenue, Oakland, CA

Legend and Notes

Analysis Flag

L1

Reporting limits raised due to high level of non-target analyte materials.

SEVERN TRENT STL

Submission: 2005-09-0621

Gas/BTEX/MTBE by 8260B (C6-C12)

Cambria Environmental Sonoma
Attn.: Ana Friel

270 Perkins Street
Sonoma, CA 95476
Phone: (707) 268-3812 Fax: (707) 268-8180

Project: 247-0715
98995755

Received: 09/22/2005 10:10

Site: 350 Grand Avenue, Oakland, CA

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
B-5-5.0`	09/20/2005 10:39	Soil	1
B-5-9.5`	09/20/2005 10:45	Soil	2
CPT-1-36`W	09/20/2005 15:00	Water	3
CPT-1-58`W	09/21/2005 10:32	Water	4
B-2-3.0`	09/21/2005 07:36	Soil	5
B-2-6.0`	09/21/2005 07:45	Soil	6
B-2-9.5`	09/21/2005 07:50	Soil	7
B-1-3.0`	09/21/2005 08:08	Soil	8
B-3-2.5`	09/21/2005 08:37	Soil	10
B-4-1.5`	09/21/2005 09:19	Soil	11

Gas/BTEX/MTBE by 8260B (C6-C12)

Cambria Environmental Sonoma

Attn.: Ana Friel

270 Perkins Street
Sonoma, CA 95476
Phone: (707) 268-3812 Fax: (707) 268-8180

Project: 247-0715
98995755

Received: 09/22/2005 10:10

Site: 350 Grand Avenue, Oakland, CA

Prep(s):	5030B	Test(s):	8260B
Sample ID:	B-5-5.0	Lab ID:	2005-09-0621 - 1
Sampled:	09/20/2005 10:39	Extracted:	9/26/2005 15:23
Matrix:	Soil	QC Batch#:	2005/09/26-V1.65

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline [Shell]	ND	1.0	mg/Kg	1.00	09/26/2005 15:23	
Benzene	ND	0.0050	mg/Kg	1.00	09/26/2005 15:23	
Toluene	ND	0.0050	mg/Kg	1.00	09/26/2005 15:23	
Ethyl benzene	ND	0.0050	mg/Kg	1.00	09/26/2005 15:23	
Total xylenes	ND	0.0050	mg/Kg	1.00	09/26/2005 15:23	
Methyl tert-butyl ether (MTBE)	ND	0.0050	mg/Kg	1.00	09/26/2005 15:23	
Surrogate(s)						
1,2-Dichloroethane-d4	86.6	72-124	%	1.00	09/26/2005 15:23	
Toluene-d8	92.4	75-116	%	1.00	09/26/2005 15:23	

Gas/BTEX/MTBE by 8260B (C6-C12)

Cambria Environmental Sonoma
Attn.: Ana Friel

270 Perkins Street
Sonoma, CA 95476
Phone: (707) 268-3812 Fax: (707) 268-8180

Project: 247-0715
98995755

Received: 09/22/2005 10:10

Site: 350 Grand Avenue, Oakland, CA

Prep(s):	5030B	Test(s):	8260B
Sample ID:	B-5-9.5'	Lab ID:	2005-09-0621 - 2
Sampled:	09/20/2005 10:45	Extracted:	9/26/2005 15:49
Matrix:	Soil	QC Batch#:	2005/09/26-V1.65

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline [Shell]	ND	1.0	mg/Kg	1.00	09/26/2005 15:49	
Benzene	ND	0.0050	mg/Kg	1.00	09/26/2005 15:49	
Toluene	ND	0.0050	mg/Kg	1.00	09/26/2005 15:49	
Ethyl benzene	ND	0.0050	mg/Kg	1.00	09/26/2005 15:49	
Total xylenes	ND	0.0050	mg/Kg	1.00	09/26/2005 15:49	
Methyl tert-butyl ether (MTBE)	ND	0.0050	mg/Kg	1.00	09/26/2005 15:49	
Surrogate(s)						
1,2-Dichloroethane-d4	93.0	72-124	%	1.00	09/26/2005 15:49	
Toluene-d8	89.1	75-116	%	1.00	09/26/2005 15:49	

Gas/BTEX/MTBE by 8260B (C6-C12)

Cambria Environmental Sonoma

Attn.: Ana Friel

270 Perkins Street
Sonoma, CA 95476
Phone: (707) 268-3812 Fax: (707) 268-8180

Project: 247-0715
98995755

Received: 09/22/2005 10:10

Site: 350 Grand Avenue, Oakland, CA

Prep(s):	5030B	Test(s):	8260B
Sample ID:	CPT-1-36`W	Lab ID:	2005-09-0621 - 3
Sampled:	09/20/2005 15:00	Extracted:	9/27/2005 12:15
Matrix:	Water	QC Batch#:	2005/09/27-1C.68

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline [Shell]	240	50	ug/L	1.00	09/27/2005 12:15	Q1
Benzene	ND	0.50	ug/L	1.00	09/27/2005 12:15	
Toluene	ND	0.50	ug/L	1.00	09/27/2005 12:15	
Ethylbenzene	4.6	0.50	ug/L	1.00	09/27/2005 12:15	
Total xylenes	ND	1.0	ug/L	1.00	09/27/2005 12:15	
Methyl tert-butyl ether (MTBE)	17	0.50	ug/L	1.00	09/27/2005 12:15	
Surrogate(s)						
1,2-Dichloroethane-d4	101.2	73-130	%	1.00	09/27/2005 12:15	
Toluene-d8	108.2	81-114	%	1.00	09/27/2005 12:15	

Gas/BTEX/MTBE by 8260B (C6-C12)

Cambria Environmental Sonoma
Attn.: Ana Friel

270 Perkins Street
Sonoma, CA 95476
Phone: (707) 268-3812 Fax: (707) 268-8180

Project: 247-0715
98995755

Received: 09/22/2005 10:10

Site: 350 Grand Avenue, Oakland, CA

Prep(s):	5030B	Test(s):	8260B
Sample ID:	CPT-1-58'W	Lab ID:	2005-09-0621 - 4
Sampled:	09/21/2005 10:32	Extracted:	9/27/2005 12:40
Matrix:	Water	QC Batch#:	2005/09/27-1C.68

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline [Shell]	ND	50	ug/L	1.00	09/27/2005 12:40	
Benzene	ND	0.50	ug/L	1.00	09/27/2005 12:40	
Toluene	ND	0.50	ug/L	1.00	09/27/2005 12:40	
Ethylbenzene	ND	0.50	ug/L	1.00	09/27/2005 12:40	
Total xylenes	ND	1.0	ug/L	1.00	09/27/2005 12:40	
Methyl tert-butyl ether (MTBE)	ND	0.50	ug/L	1.00	09/27/2005 12:40	
Surrogate(s)						
1,2-Dichloroethane-d4	98.3	73-130	%	1.00	09/27/2005 12:40	
Toluene-d8	109.2	81-114	%	1.00	09/27/2005 12:40	

Gas/BTEX/MTBE by 8260B (C6-C12)

Cambria Environmental Sonoma

Attn.: Ana Friel

270 Perkins Street
Sonoma, CA 95476
Phone: (707) 268-3812 Fax: (707) 268-8180

Project: 247-0715
98995755

Received: 09/22/2005 10:10

Site: 350 Grand Avenue, Oakland, CA

Prep(s):	5030B	Test(s):	8260B
Sample ID:	B-2-3.0`	Lab ID:	2005-09-0621 - 5
Sampled:	09/21/2005 07:36	Extracted:	9/26/2005 16:16
Matrix:	Soil	QC Batch#:	2005/09/26-V1.65

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline [Shell]	ND	1.0	mg/Kg	1.00	09/26/2005 16:16	
Benzene	ND	0.0050	mg/Kg	1.00	09/26/2005 16:16	
Toluene	ND	0.0050	mg/Kg	1.00	09/26/2005 16:16	
Ethyl benzene	ND	0.0050	mg/Kg	1.00	09/26/2005 16:16	
Total xylenes	ND	0.0050	mg/Kg	1.00	09/26/2005 16:16	
Methyl tert-butyl ether (MTBE)	0.054	0.0050	mg/Kg	1.00	09/26/2005 16:16	
Surrogate(s)						
1,2-Dichloroethane-d4	89.1	72-124	%	1.00	09/26/2005 16:16	
Toluene-d8	92.2	75-116	%	1.00	09/26/2005 16:16	

Gas/BTEX/MTBE by 8260B (C6-C12)

Cambria Environmental Sonoma
Attn.: Ana Friel

270 Perkins Street
Sonoma, CA 95476
Phone: (707) 268-3812 Fax: (707) 268-8180

Project: 247-0715
98995755

Received: 09/22/2005 10:10

Site: 350 Grand Avenue, Oakland, CA

Prep(s):	5030B	Test(s):	8260B
Sample ID:	B-2-6.0	Lab ID:	2005-09-0621 - 6
Sampled:	09/21/2005 07:45	Extracted:	9/26/2005 16:42
Matrix:	Soil	QC Batch#:	2005/09/26-V1.65

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline [Shell]	2.4	1.0	mg/Kg	1.00	09/26/2005 16:42	Q1
Benzene	ND	0.0050	mg/Kg	1.00	09/26/2005 16:42	
Toluene	ND	0.0050	mg/Kg	1.00	09/26/2005 16:42	
Ethyl benzene	ND	0.0050	mg/Kg	1.00	09/26/2005 16:42	
Total xylenes	ND	0.0050	mg/Kg	1.00	09/26/2005 16:42	
Methyl tert-butyl ether (MTBE)	0.17	0.0050	mg/Kg	1.00	09/26/2005 16:42	
Surrogate(s)						
1,2-Dichloroethane-d4	94.1	72-124	%	1.00	09/26/2005 16:42	
Toluene-d8	90.4	75-116	%	1.00	09/26/2005 16:42	

Gas/BTEX/MTBE by 8260B (C6-C12)

Cambria Environmental Sonoma
Attn.: Ana Friel

270 Perkins Street
Sonoma, CA 95476
Phone: (707) 268-3812 Fax: (707) 268-8180

Project: 247-0715
98995755

Received: 09/22/2005 10:10

Site: 350 Grand Avenue, Oakland, CA

Prep(s):	5030B	Test(s):	8260B
Sample ID:	B-2-9.5'	Lab ID:	2005-09-0621 - 7
Sampled:	09/21/2005 07:50	Extracted:	9/26/2005 17:08
Matrix:	Soil	QC Batch#:	2005/09/26-V1.65

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline [Shell]	ND	1.0	mg/Kg	1.00	09/26/2005 17:08	
Benzene	ND	0.0050	mg/Kg	1.00	09/26/2005 17:08	
Toluene	ND	0.0050	mg/Kg	1.00	09/26/2005 17:08	
Ethyl benzene	ND	0.0050	mg/Kg	1.00	09/26/2005 17:08	
Total xylenes	ND	0.0050	mg/Kg	1.00	09/26/2005 17:08	
Methyl tert-butyl ether (MTBE)	0.15	0.0050	mg/Kg	1.00	09/26/2005 17:08	
Surrogate(s)						
1,2-Dichloroethane-d4	73.8	72-124	%	1.00	09/26/2005 17:08	
Toluene-d8	98.4	75-116	%	1.00	09/26/2005 17:08	

Gas/BTEX/MTBE by 8260B (C6-C12)

Cambria Environmental Sonoma
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Project: 247-0715
98995755

Received: 09/22/2005 10:10

Site: 350 Grand Avenue, Oakland, CA

Prep(s):	5030B	Test(s):	8260B
Sample ID:	B-1-3.0`	Lab ID:	2005-09-0621 - 8
Sampled:	09/21/2005 08:08	Extracted:	9/26/2005 17:33
Matrix:	Soil	QC Batch#:	2005/09/26-V1.65

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline [Shell]	ND	1.0	mg/Kg	1.00	09/26/2005 17:33	
Benzene	ND	0.0050	mg/Kg	1.00	09/26/2005 17:33	
Toluene	ND	0.0050	mg/Kg	1.00	09/26/2005 17:33	
Ethyl benzene	ND	0.0050	mg/Kg	1.00	09/26/2005 17:33	
Total xylenes	ND	0.0050	mg/Kg	1.00	09/26/2005 17:33	
Methyl tert-butyl ether (MTBE)	ND	0.0050	mg/Kg	1.00	09/26/2005 17:33	
Surrogate(s)						
1,2-Dichloroethane-d4	96.7	72-124	%	1.00	09/26/2005 17:33	
Toluene-d8	89.8	75-116	%	1.00	09/26/2005 17:33	

Gas/BTEX/MTBE by 8260B (C6-C12)

Cambria Environmental Sonoma

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Sonoma, CA 95476
Phone: (707) 268-3812 Fax: (707) 268-8180

Project: 247-0715
98995755

Received: 09/22/2005 10:10

Site: 350 Grand Avenue, Oakland, CA

Prep(s):	5030B	Test(s):	8260B
Sample ID:	B-3-2.5'	Lab ID:	2005-09-0621 - 10
Sampled:	09/21/2005 08:37	Extracted:	10/4/2005 23:07
Matrix:	Soil	QC Batch#:	2005/10/04-2B.62

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline [Shell]	ND	1.0	mg/Kg	1.00	10/04/2005 23:07	
Benzene	ND	0.0050	mg/Kg	1.00	10/04/2005 23:07	
Toluene	ND	0.0050	mg/Kg	1.00	10/04/2005 23:07	
Ethyl benzene	ND	0.0050	mg/Kg	1.00	10/04/2005 23:07	
Total xylenes	ND	0.0050	mg/Kg	1.00	10/04/2005 23:07	
Methyl tert-butyl ether (MTBE)	ND	0.0050	mg/Kg	1.00	10/04/2005 23:07	
Surrogate(s)						
1,2-Dichloroethane-d4	93.6	76-124	%	1.00	10/04/2005 23:07	
Toluene-d8	96.0	75-116	%	1.00	10/04/2005 23:07	

Gas/BTEX/MTBE by 8260B (C6-C12)

Cambria Environmental Sonoma
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Phone: (707) 268-3812 Fax: (707) 268-8180

Project: 247-0715
98995755

Received: 09/22/2005 10:10

Site: 350 Grand Avenue, Oakland, CA

Prep(s):	5030B	Test(s):	8260B
Sample ID:	B-4-1.5`	Lab ID:	2005-09-0621 - 11
Sampled:	09/21/2005 09:19	Extracted:	9/26/2005 17:59
Matrix:	Soil	QC Batch#:	2005/09/26-V1.65

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline [Shell]	ND	1.0	mg/Kg	1.00	09/26/2005 17:59	
Benzene	ND	0.0050	mg/Kg	1.00	09/26/2005 17:59	
Toluene	ND	0.0050	mg/Kg	1.00	09/26/2005 17:59	
Ethyl benzene	ND	0.0050	mg/Kg	1.00	09/26/2005 17:59	
Total xylenes	ND	0.0050	mg/Kg	1.00	09/26/2005 17:59	
Methyl tert-butyl ether (MTBE)	ND	0.0050	mg/Kg	1.00	09/26/2005 17:59	
Surrogate(s)						
1,2-Dichloroethane-d4	95.4	72-124	%	1.00	09/26/2005 17:59	
Toluene-d8	89.6	75-116	%	1.00	09/26/2005 17:59	

Gas/BTEX/MTBE by 8260B (C6-C12)

Cambria Environmental Sonoma

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270 Perkins Street
Sonoma, CA 95476
Phone: (707) 268-3812 Fax: (707) 268-8180

Project: 247-0715
98995755

Received: 09/22/2005 10:10

Site: 350 Grand Avenue, Oakland, CA

Batch QC Report

Prep(s): 5030B — Test(s): 8260B

Method Blank — Soil — **QC Batch # 2005/09/26-V1.65**

MB: 2005/09/26-V1.65-007 — Date Extracted: 09/26/2005 09:07

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline [Shell]	ND	1.000	mg/Kg	09/26/2005 09:07	
Methyl tert-butyl ether (MTBE)	ND	0.0050	mg/Kg	09/26/2005 09:07	
Benzene	ND	0.0050	mg/Kg	09/26/2005 09:07	
Toluene	ND	0.0050	mg/Kg	09/26/2005 09:07	
Ethyl benzene	ND	0.0050	mg/Kg	09/26/2005 09:07	
Total xylenes	ND	0.0050	mg/Kg	09/26/2005 09:07	
Surrogates(s)					
1,2-Dichloroethane-d4	92.2	76-124	%	09/26/2005 09:07	
Toluene-d8	92.0	75-116	%	09/26/2005 09:07	

Gas/BTEX/MTBE by 8260B (C6-C12)

Cambria Environmental Sonoma
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270 Perkins Street
Sonoma, CA 95476
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Project: 247-0715
98995755

Received: 09/22/2005 10:10

Site: 350 Grand Avenue, Oakland, CA

Batch QC Report

Prep(s): 5030B — Test(s): 8260B
Method Blank — Water — **QC Batch # 2005/09/27-1C.68**
MB: 2005/09/27-1C.68-023 — Date Extracted: 09/27/2005 08:23

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline [Shell]	ND	50	ug/L	09/27/2005 08:23	
Benzene	ND	0.5	ug/L	09/27/2005 08:23	
Toluene	ND	0.5	ug/L	09/27/2005 08:23	
Ethylbenzene	ND	0.5	ug/L	09/27/2005 08:23	
Total xylenes	ND	1.0	ug/L	09/27/2005 08:23	
Methyl tert-butyl ether (MTBE)	ND	0.5	ug/L	09/27/2005 08:23	
Surrogates(s)					
1,2-Dichloroethane-d4	85.4	73-130	%	09/27/2005 08:23	
Toluene-d8	92.8	81-114	%	09/27/2005 08:23	

Gas/BTEX/MTBE by 8260B (C6-C12)

Cambria Environmental Sonoma
Attn.: Ana Friel

270 Perkins Street
Sonoma, CA 95476
Phone: (707) 268-3812 Fax: (707) 268-8180

Project: 247-0715
98995755

Received: 09/22/2005 10:10

Site: 350 Grand Avenue, Oakland, CA

Batch QC Report

Prep(s): 5030B
Method Blank
MB: 2005/10/04-2B.62-022

Soil

Test(s): 8260B
QC Batch # 2005/10/04-2B.62
Date Extracted: 10/04/2005 19:22

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline [Shell]	ND	1.000	mg/Kg	10/04/2005 19:22	
Methyl tert-butyl ether (MTBE)	ND	0.0050	mg/Kg	10/04/2005 19:22	
Benzene	ND	0.0050	mg/Kg	10/04/2005 19:22	
Toluene	ND	0.0050	mg/Kg	10/04/2005 19:22	
Ethyl benzene	ND	0.0050	mg/Kg	10/04/2005 19:22	
Total xylenes	ND	0.0050	mg/Kg	10/04/2005 19:22	
Surrogates(s)					
1,2-Dichloroethane-d4	86.8	76-124	%	10/04/2005 19:22	
Toluene-d8	98.6	75-116	%	10/04/2005 19:22	

Gas/BTEX/MTBE by 8260B (C6-C12)

Cambria Environmental Sonoma
Attn.: Ana Friel

270 Perkins Street
Sonoma, CA 95476
Phone: (707) 268-3812 Fax: (707) 268-8180

Project: 247-0715
98995755

Received: 09/22/2005 10:10

Site: 350 Grand Avenue, Oakland, CA

Batch QC Report

Prep(s): 5030B — Test(s): 8260B

Laboratory Control Spike — Soil — QC Batch # 2005/09/26-V1.65

LCS 2005/09/26-V1.65-041 — Extracted: 09/26/2005 — Analyzed: 09/26/2005 08:41
LCSD

Compound	Conc. mg/Kg		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Methyl tert-butyl ether (MTBE)	0.0595		0.05	119.0			65-165	20		
Benzene	0.0549		0.05	109.8			69-129	20		
Toluene	0.0542		0.05	108.4			70-130	20		
Surrogates(s)										
1,2-Dichloroethane-d4	432		500	86.4			76-124			
Toluene-d8	461		500	92.2			75-116			

Gas/BTEX/MTBE by 8260B (C6-C12)

Cambria Environmental Sonoma

Attn.: Ana Friel

270 Perkins Street
Sonoma, CA 95476
Phone: (707) 268-3812 Fax: (707) 268-8180

Project: 247-0715
98995755

Received: 09/22/2005 10:10

Site: 350 Grand Avenue, Oakland, CA

Batch QC Report

Prep(s): 5030B — Test(s): 8260B

Laboratory Control Spike — **Water** — **QC Batch # 2005/09/27-1C.68**

LCS 2005/09/27-1C.68-058 — Extracted: 09/27/2005 — Analyzed: 09/27/2005 07:58

LCSD

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Methyl tert-butyl ether (MTBE)	18.6		25	74.4			65-165	20		
Benzene	21.4		25	85.6			69-129	20		
Toluene	24.2		25	96.8			70-130	20		
Surrogates(s)										
1,2-Dichloroethane-d4	376		500	75.2			73-130			
Toluene-d8	534		500	106.8			81-114			

Gas/BTEX/MTBE by 8260B (C6-C12)

Cambria Environmental Sonoma
Attn.: Ana Friel

270 Perkins Street
Sonoma, CA 95476
Phone: (707) 268-3812 Fax: (707) 268-8180

Project: 247-0715
98995755

Received: 09/22/2005 10:10

Site: 350 Grand Avenue, Oakland, CA

Batch QC Report

Prep(s): 5030B — Test(s): 8260B

Laboratory Control Spike — **Soil** — **QC Batch # 2005/10/04-2B.62**

LCS 2005/10/04-2B.62-020 — Extracted: 10/04/2005 — Analyzed: 10/04/2005 18:20
LCSD

Compound	Conc. mg/Kg		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Methyl tert-butyl ether (MTBE)	0.0522		0.05	104.4			65-165	20		
Benzene	0.0553		0.05	110.6			69-129	20		
Toluene	0.0566		0.05	113.2			70-130	20		
Surrogates(s)										
1,2-Dichloroethane-d4	410		500	82.0			76-124			
Toluene-d8	487		500	97.4			75-116			

Gas/BTEX/MTBE by 8260B (C6-C12)

Cambria Environmental Sonoma

Attn.: Ana Friel

270 Perkins Street
Sonoma, CA 95476
Phone: (707) 268-3812 Fax: (707) 268-8180

Project: 247-0715
98995755

Received: 09/22/2005 10:10

Site: 350 Grand Avenue, Oakland, CA

Batch QC Report

Prep(s): 5030B — Test(s): 8260B

Matrix Spike (MS / MSD) — **Soil** — **QC Batch # 2005/09/26-V1.65**

MS/MSD — Lab ID: 2005-09-0546 - 001

MS: 2005/09/26-V1.65-004 — Extracted: 09/26/2005 — Analyzed: 09/26/2005 11:04 — Dilution: 1.00

MSD: 2005/09/26-V1.65-030 — Extracted: 09/26/2005 — Analyzed: 09/26/2005 11:30 — Dilution: 1.00

Compound	Conc. mg/Kg			Spk Level	Recovery %			Limits %		Flags	
	MS	MSD	Sample	mg/Kg	MS	MSD	RPD	Rec.	RPD	MS	MSD
Methyl tert-butyl ether	0.0565	0.0443	0.0118	0.048732	91.7	66.4	32.0	65-165	20		R1
Benzene	0.0520	0.0500	0.0123	0.048732	81.5	77.1	5.5	69-129	20		
Toluene	0.0493	0.0536	0.0122	0.048732	76.1	84.6	10.6	70-130	20		
Surrogate(s)											
1,2-Dichloroethane-d4	460	391		500	92.0	78.2		76-124			
Toluene-d8	458	470		500	91.6	94.0		75-116			

Gas/BTEX/MTBE by 8260B (C6-C12)

Cambria Environmental Sonoma
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Sonoma, CA 95476
Phone: (707) 268-3812 Fax: (707) 268-8180

Project: 247-0715
98995755

Received: 09/22/2005 10:10

Site: 350 Grand Avenue, Oakland, CA

Batch QC Report

Prep(s): 5030B — Test(s): 8260B

Matrix Spike (MS / MSD) — **Water** — **QC Batch # 2005/09/27-1C.68**

MS/MSD — Lab ID: 2005-09-0633 - 001

MS: 2005/09/27-1C.68-024 — Extracted: 09/27/2005 — Analyzed: 09/27/2005 11:24 — Dilution: 100.00

MSD: 2005/09/27-1C.68-049 — Extracted: 09/27/2005 — Analyzed: 09/27/2005 11:49 — Dilution: 100.00

Compound	Conc. ug/L			Spk Level	Recovery %			Limits %		Flags	
	MS	MSD	Sample	ug/L	MS	MSD	RPD	Rec.	RPD	MS	MSD
Methyl tert-butyl ether	2530	3010	499	2500	81.2	100.4	21.1	65-165	20		R1
Benzene	2740	2770	485	2500	90.2	91.4	1.3	69-129	20		
Toluene	3190	4110	1130	2500	82.4	119.2	36.5	70-130	20		R1
Surrogate(s)											
1,2-Dichloroethane-d4	413	430		500	82.6	86.0		73-130			
Toluene-d8	462	613		500	92.4	122.6		81-114			S7

Gas/BTEX/MTBE by 8260B (C6-C12)

Cambria Environmental Sonoma
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270 Perkins Street
Sonoma, CA 95476
Phone: (707) 268-3812 Fax: (707) 268-8180

Project: 247-0715
98995755

Received: 09/22/2005 10:10

Site: 350 Grand Avenue, Oakland, CA

Batch QC Report

Prep(s): 5030B — Test(s): 8260B

Matrix Spike (MS / MSD) — Soil — **QC Batch # 2005/10/04-2B.62**

MS/MSD — Lab ID: 2005-09-0669 - 012

MS: 2005/10/04-2B.62-029 — Extracted: 10/04/2005 — Analyzed: 10/04/2005 20:29 — Dilution: 1.00

MSD: 2005/10/04-2B.62-055 — Extracted: 10/04/2005 — Analyzed: 10/04/2005 20:55 — Dilution: 1.00

Compound	Conc. mg/Kg			Spk Level	Recovery %			Limits %		Flags	
	MS	MSD	Sample	mg/Kg	MS	MSD	RPD	Rec.	RPD	MS	MSD
Methyl tert-butyl ether	0.0483	0.0455	ND	0.049212	98.1	92.6	5.8	65-165	20		
Benzene	0.0469	0.0448	ND	0.049212	95.3	91.2	4.4	69-129	20		
Toluene	0.0466	0.0441	ND	0.049212	94.7	89.8	5.3	70-130	20		
Surrogate(s)											
1,2-Dichloroethane-d4	436	450		500	87.2	90.0		76-124			
Toluene-d8	487	492		500	97.4	98.4		75-116			

Gas/BTEX/MTBE by 8260B (C6-C12)

Cambria Environmental Sonoma

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Project: 247-0715
98995755

Received: 09/22/2005 10:10

Site: 350 Grand Avenue, Oakland, CA

Legend and Notes

Result Flag

Q1

Quantit. of unknown hydrocarbon(s) in sample based on gasoline.

R1

Analyte RPD was out of QC limits.

S7

Surrogate recoveries higher than acceptance limits.

2005-09-0621

SHELL Chain Of Custody Record

99817

STL-San Francisco
1220 Quarry Lane
Pleasanton, CA 94566
(925) 484-1919 (925) 484-1096 fax

Shell Project Manager to be invoiced: Denis Brown
☒ SCIENCE & ENGINEERING ☐ TECHNICAL SERVICES ☐ CRMT HOUSTON

INCIDENT NUMBER (S.E.ONLY): 98995755
SAP/ORCRMT NUMBER (TS/CRMT):

DATE: 9-20-05
PAGE: 1 of 2

SAMPLING COMPANY: Cambria Environmental Technology, Inc.
LOG CODE: CETS
SITE ADDRESS (Street and City): 350 Grand Avenue, Oakland, CA
GLOBAL ID NO.: T0600101255
ADDRESS: 270 Perkins Street, Sonoma, CA 95476
EDF DELIVERABLE TO (Responsible Party or Designee): Susan Lukas, ewics
PHONE NO.: 707-933-2376
E-MAIL: sonomaedf@cambria-env.com
CONSULTANT PROJECT NO.: 247-0718
PROJECT CONTACT (Hardcopy or PDF Report to): Ana Friel
TELEPHONE: 707-268-3812
FAX: 707-935-6649
E-MAIL: afriel@cambria-env.com
SAMPLER NAME(S) (Print): Scott Lewis
CARRIER ONLY

TURNAROUND TIME (BUSINESS DAYS): ☐ 10 DAYS ☐ 5 DAYS ☐ 72 HOURS ☐ 48 HOURS ☐ 24 HOURS ☐ LESS THAN 24 HOURS

☐ LA - RWQCB REPORT FORMAT ☐ UST AGENCY:

GC/MS MTBE CONFIRMATION: HIGHEST _____ HIGHEST per BORING _____ ALL _____

SPECIAL INSTRUCTIONS OR NOTES: CHECK BOX IF EDD IS NOT NEEDED ☐

REQUESTED ANALYSIS

LAB USE ONLY	Field Sample Identification	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	TPH - Purgeable	TPH - Extractable (8015m)	BTEX	MTBE	tBA	5 Oxygenates	1,2 DCA and EDB	Ethanol	Methanol	VOCs by 8260B	Semi-Volatiles by 8270C	Lead ☐ Total ☐ STLC ☐ TCLP	LUFT5 ☐ Total ☐ STLC ☐ TCLP	CAM17 ☐ Total ☐ STLC ☐ TCLP	Test for Disposal
	B-5-5.0'	9/20	1039	SO	1	X		X	X											
	B-5-9.5'	9/20	1045	SO	1	X		X	X											
	CPT-1-36'W	9/20	1500	GW	3	X		X	X											
	CPT-1-58'W	9/21	1032	GW	3	X		X	X											
	B-2-3.0'	9/21	0736	SO	1	X		X	X											
	B-2-6.0'	9/21	0745	SO	1	X		X	X											
	B-2-9.5'	9/21	0750	SO	1	X		X	X											
	B-1-3.0'	9/21	0806	SO	1	X		X	X											
	~~B-1-6.0'~~ B-1-5.5'	9/21	0812	SO	1	X		X	X											
	~~B-3-9.5'~~ B-3-2.5'	9/21	0837	SO	1	X		X	X											

FIELD NOTES:
Container/Preservative or PID Readings or Laboratory Notes

TEMPERATURE ON RECEIPT C°: 2

Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Scott Lewis	Sonoma Office	9-21-05	1520
Sonoma Office		9-22-05	1010
		9-22-05	1500

DISTRIBUTION: White with final report, Green to File, Yellow and Pink to Client.

10/16/00 Revision

QEQ Graphics (714) 898-9702

STL-San Francisco 2005-09-0621

SHELL Chain Of Custody Record

1220 Quarry Lane
Pleasanton, CA 94566
(925) 484-1919 (925) 484-1096 fax

Shell Project Manager to be invoiced:

☑ SCIENCE & ENGINEERING ☐ TECHNICAL SERVICES ☐ CRMT HOUSTON

Denis Brown

INCIDENT NUMBER (S&E ONLY): 98995755

SAP or CRMT NUMBER (TS/CRMT):

DATE: 9/20/05

PAGE: 2 of 2

SAMPLING COMPANY: Cambria Environmental Technology, Inc.	LOG CODE: CETS	SITE ADDRESS (Street and City): 350 Grand Avenue, Oakland, CA	GLOBAL ID NO.: T0600101255
ADDRESS: 270 Perkins Street, Sonoma, CA 95476		EDF DELIVERABLE TO (Responsible Party or Designee): Susan Lukaszewicz	PHONE NO.: 707-933-2376
PROJECT CONTACT (Hardcopy or PDF Report to): Ana Friel		E-MAIL: sonomaedf@cambria-env.com	CONSULTANT PROJECT NO.: 247-0715
TELEPHONE: 707-268-3812	FAX: 707-935-6649	E-MAIL: afriel@cambria-env.com	SAMPLER NAME(S) (Print): Scott Lewis

LAB USE ONLY

TURNAROUND TIME (BUSINESS DAYS):
☑ 10 DAYS ☐ 5 DAYS ☐ 72 HOURS ☐ 48 HOURS ☐ 24 HOURS ☐ LESS THAN 24 HOURS

☐ LA - RWQCB REPORT FORMAT ☐ UST AGENCY: _____

GC/MS MTBE CONFIRMATION: HIGHEST _____ HIGHEST per BORING _____ ALL _____

SPECIAL INSTRUCTIONS OR NOTES: CHECK BOX IF EDD IS NOT NEEDED ☐

REQUESTED ANALYSIS

LAB USE ONLY	Field Sample Identification	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	TPH - Purgeable	TPH - Extractable (8015m)	BTEX	MTBE	tBA	5 Oxygenates	1,2 DCA and EDB	Ethanol	Methanol	VOCs by 8260B	Semi-Volatiles by 8270C	Lead ☐ Total ☐ STLC ☐ TCLP	LUFT5 ☐ Total ☐ STLC ☐ TCLP	CAM17 ☐ Total ☐ STLC ☐ TCLP	Test for Disposal						
	B-4-1.5'	9/21	0919	SO	1	X		X	X																	

FIELD NOTES:
Container/Preservative or PID Readings or Laboratory Notes

TEMPERATURE ON RECEIPT C° 2

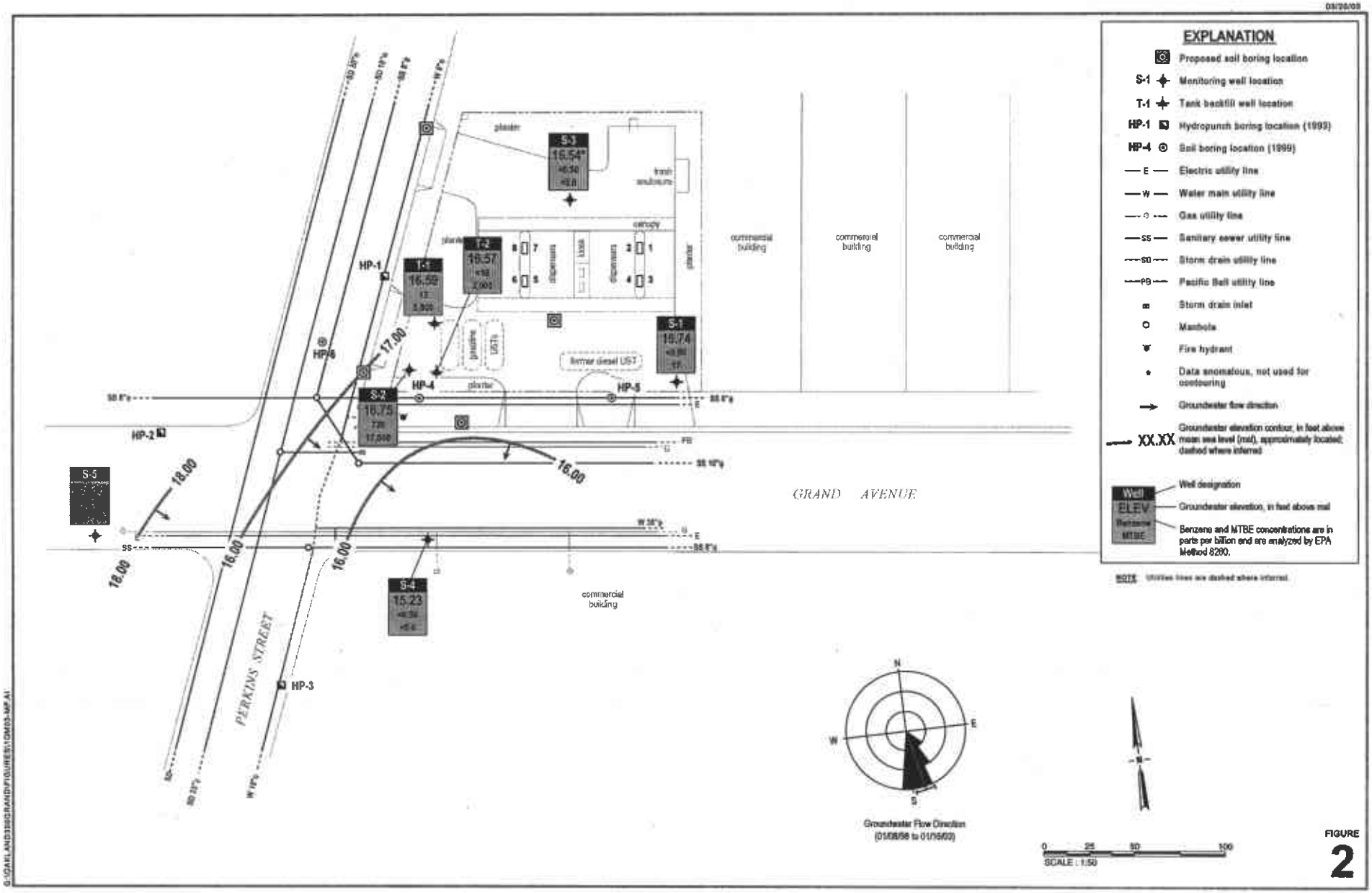
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Scott Lewis	Sonoma Office	9-21-05	1520
Sonoma Office		9-22-05	1010
		9-22-05	1500

DISTRIBUTION: White with final report, Green to File, Yellow and Pink to Client.

10/16/00 Revision

Appendix F

Historical Groundwater Contour Maps

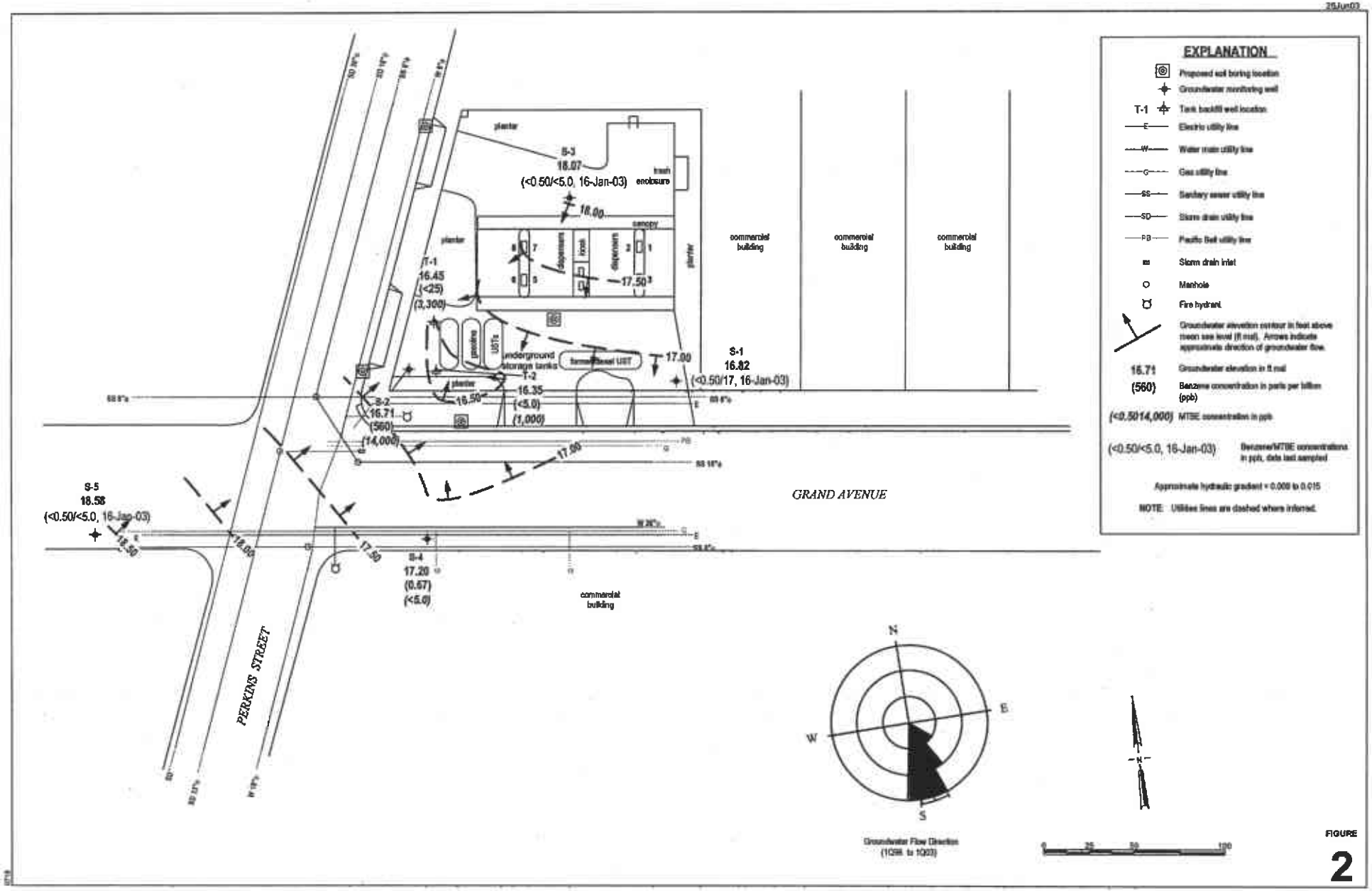


Groundwater Elevation Contour Map
January 16, 2003

CAMBRIA

Shell-branded Service Station
350 Grand Avenue
Oakland, California
Incident #98995755

FIGURE
2



Groundwater Contour/Chemical Concentration Map

May 2, 2003

Shell-branded Service Station
350 Grand Avenue
Oakland, California

FIGURE
2

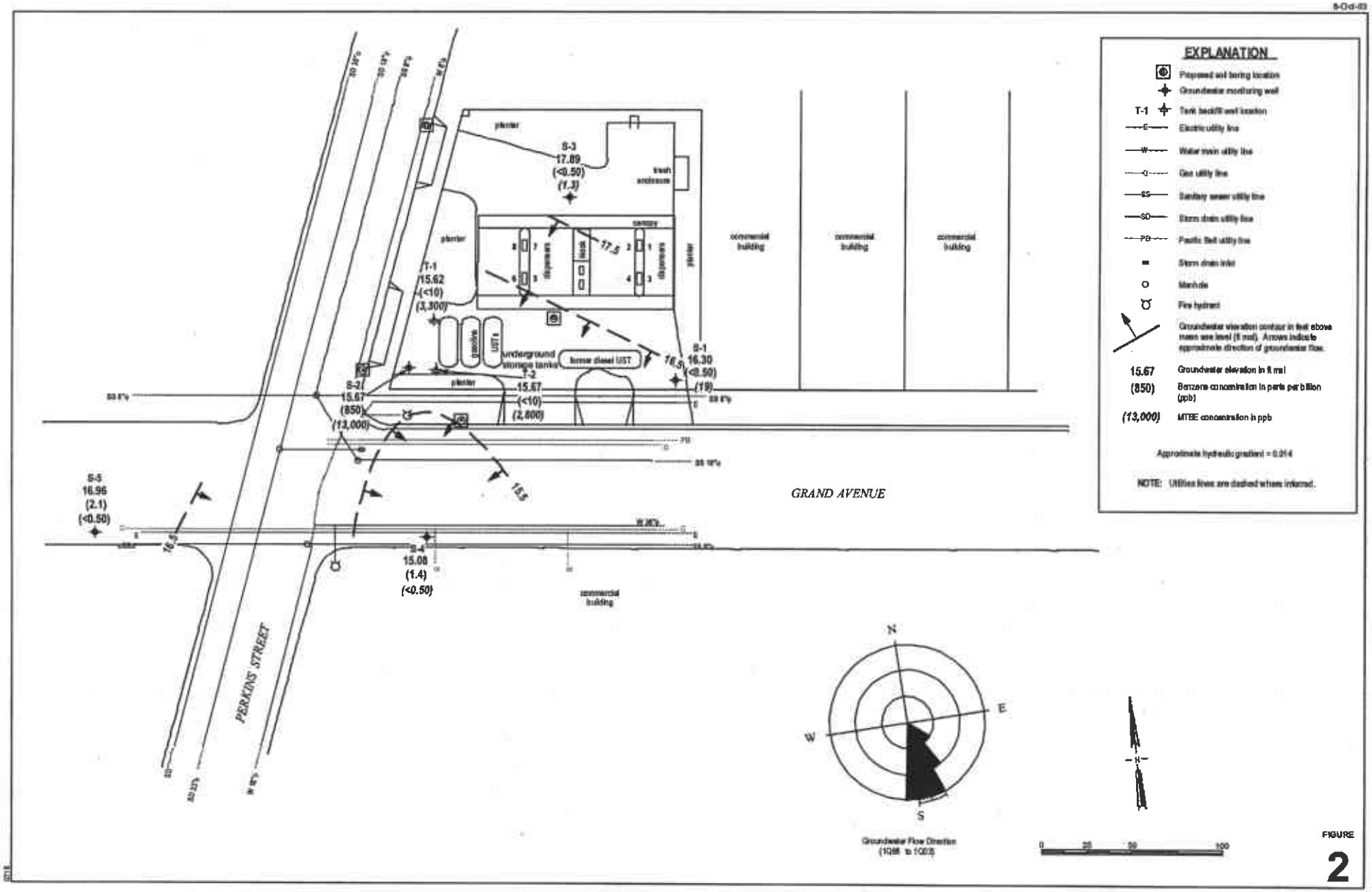
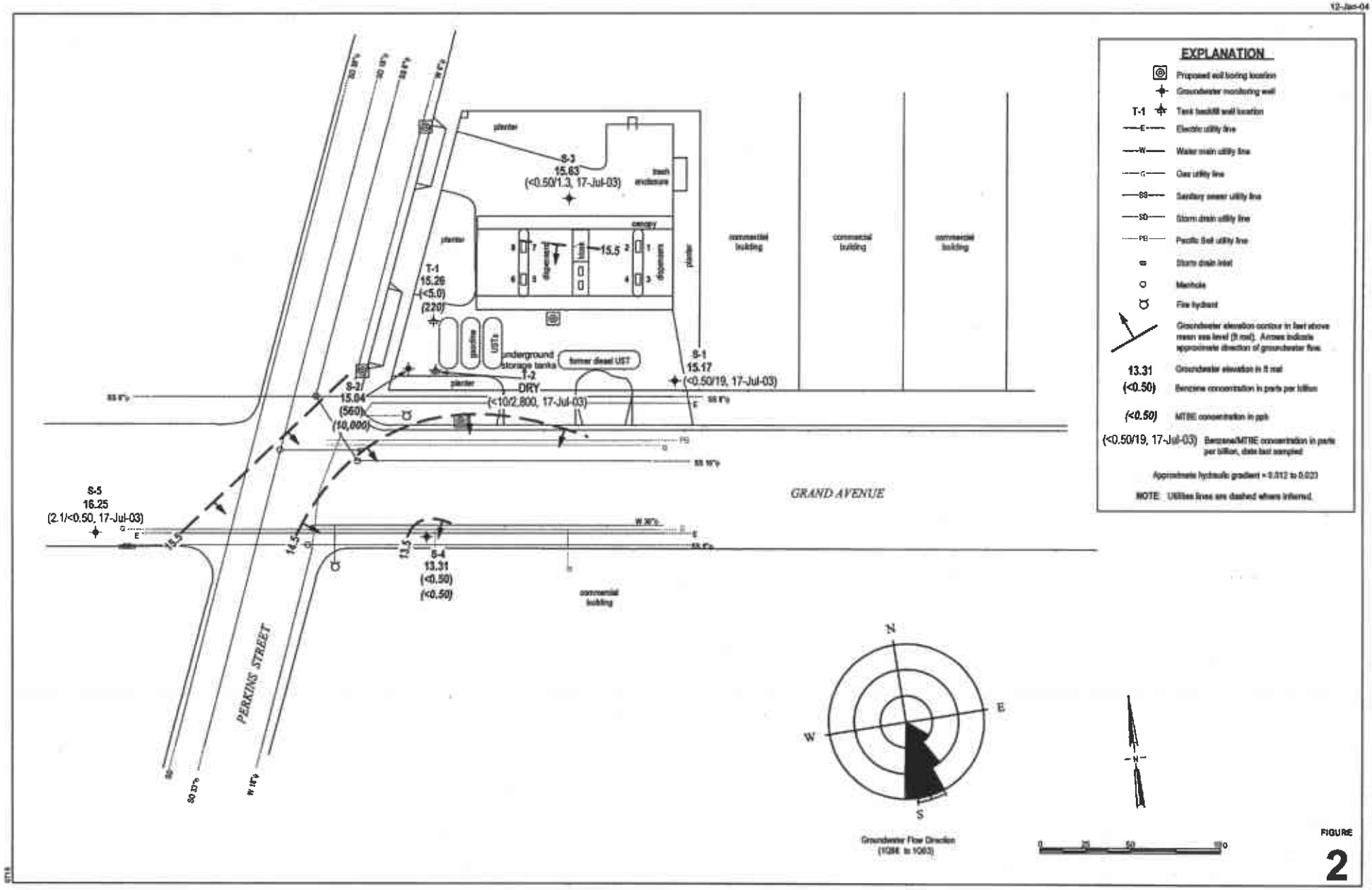


FIGURE 2

Groundwater Contour/Chemical Concentration Map

July 17, 2003

Shell-branded Service Station
350 Grand Avenue
Oakland, California

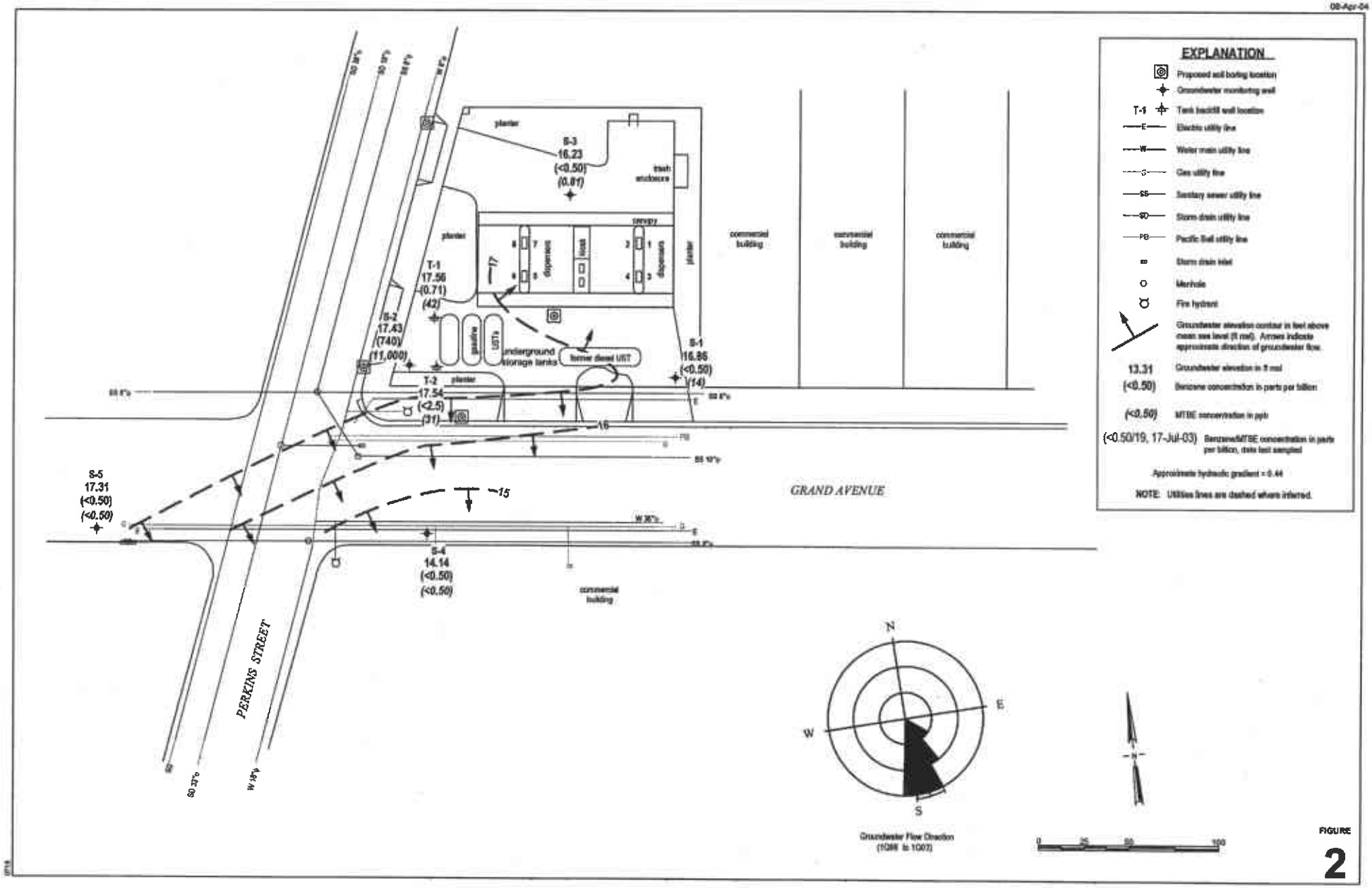


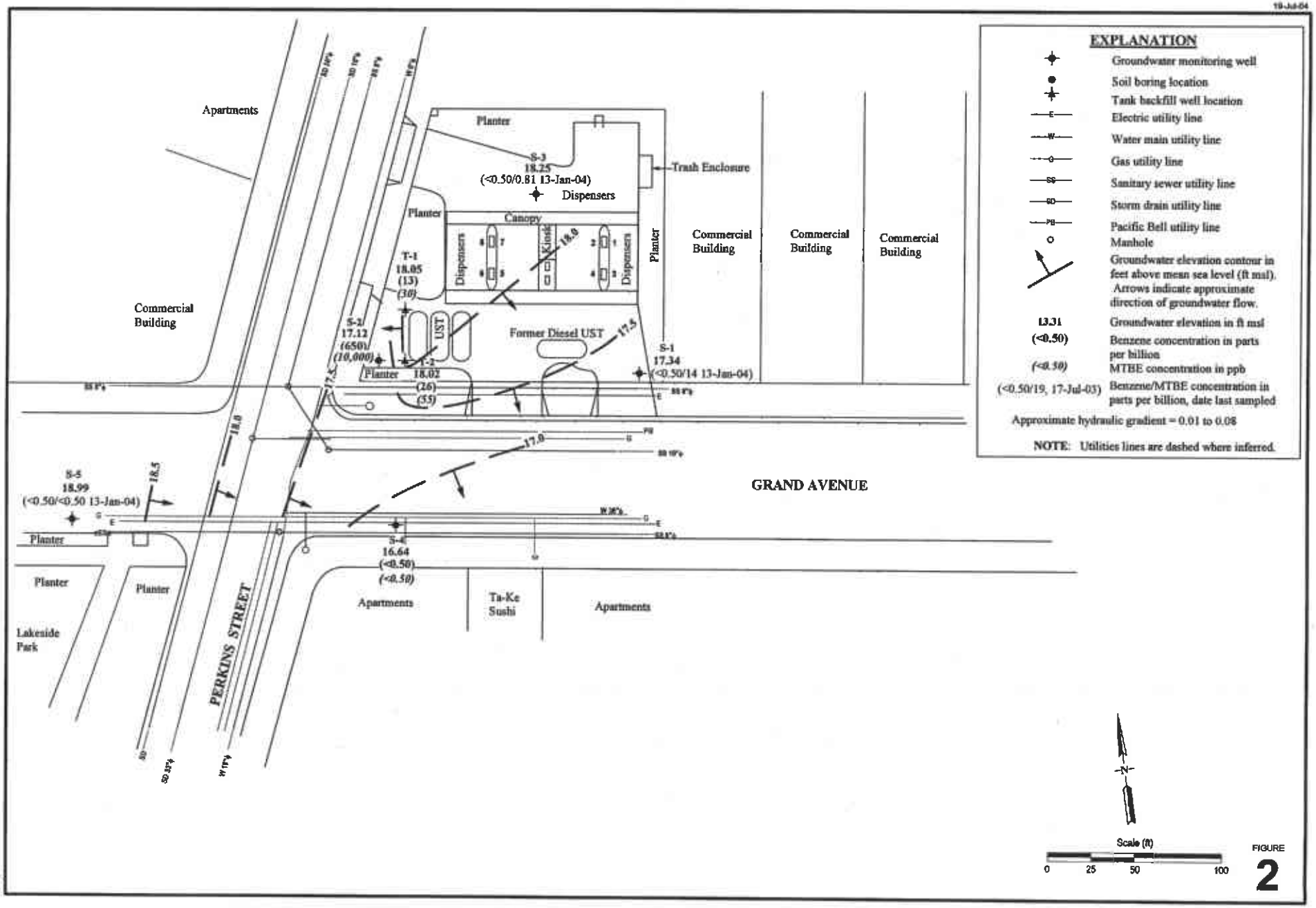
Groundwater Contour/Chemical Concentration Map

November 4, 2003

Shell-branded Service Station
350 Grand Avenue
Oakland, California

FIGURE **2**


08-Apr-04
EXPLANATION
Proposed soil boring location
Groundwater monitoring well
T-1 Tank backfill well location
E Electric utility line
W Water main utility line
G Gas utility line
SS Sanitary sewer utility line
SD Storm drain utility line
PB Pacific Bell utility line
Storm drain inlet
Manhole
Fire hydrant
Groundwater elevation contour in feet above mean sea level (ft msl). Arrows indicate approximate direction of groundwater flow.
13.31 Groundwater elevation in ft msl
(<0.50) Benzene concentration in parts per billion
(<0.50) MTBE concentration in ppb
(<0.50/19, 17-Jul-03) Benzene/MTBE concentration in parts per billion, date last sampled
Approximate hydraulic gradient = 0.44
NOTE: Utilities lines are dashed where inferred.
S-1 16.86 (<0.50) (14)
S-2 17.43 (740) (11,000)
S-3 16.23 (<0.50) (0.81)
S-4 14.14 (<0.50) (<0.50)
S-5 17.31 (<0.50) (<0.50)
T-1 17.56 (0.71) (42)
T-2 17.54 (<2.5) (31)
GRAND AVENUE
PERKINS STREET
planter
trash enclosure
canopy
dispensers
kiosk
underground storage tanks
former diesel UST
gasoline
USTs
commercial building
residential building
Groundwater Flow Direction (1Q98 to 1Q03)
0 25 50 100
Groundwater Contour/ Chemical Concentration Map
January 13, 2004
CAMBRIA
Shell-branded Service Station
350 Grand Avenue
Oakland, California
FIGURE
2

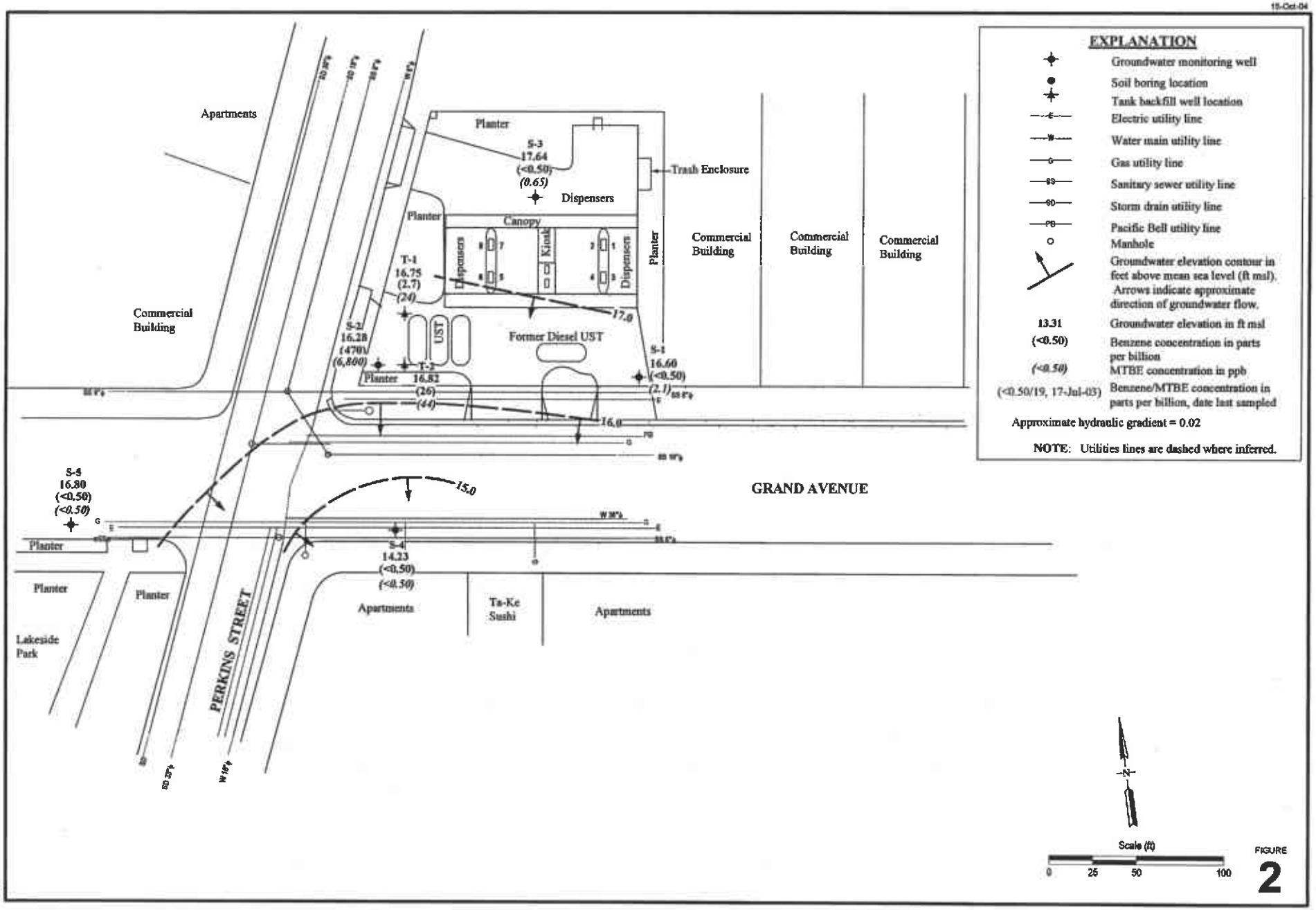


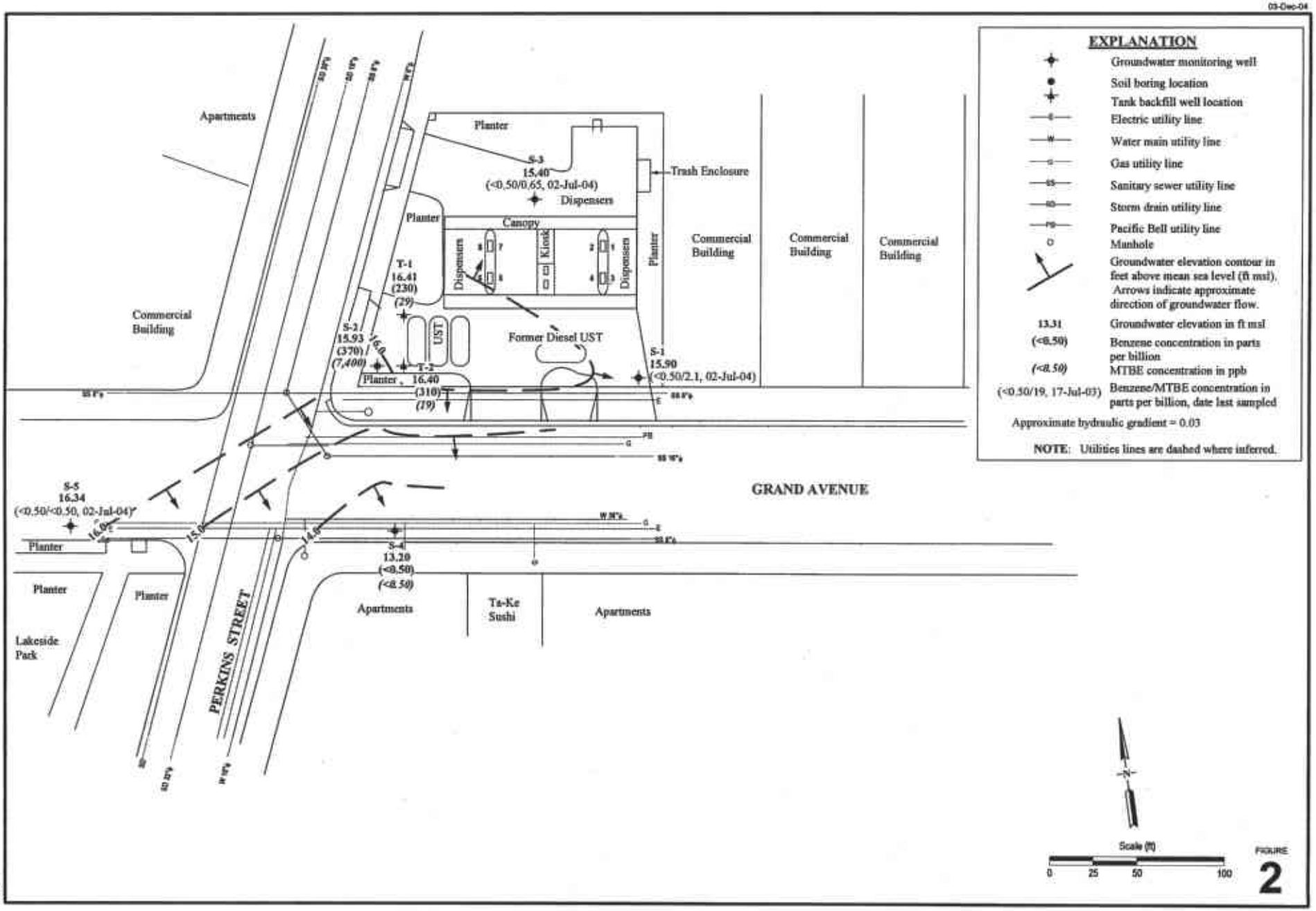
Groundwater Contour/Chemical Concentration Map

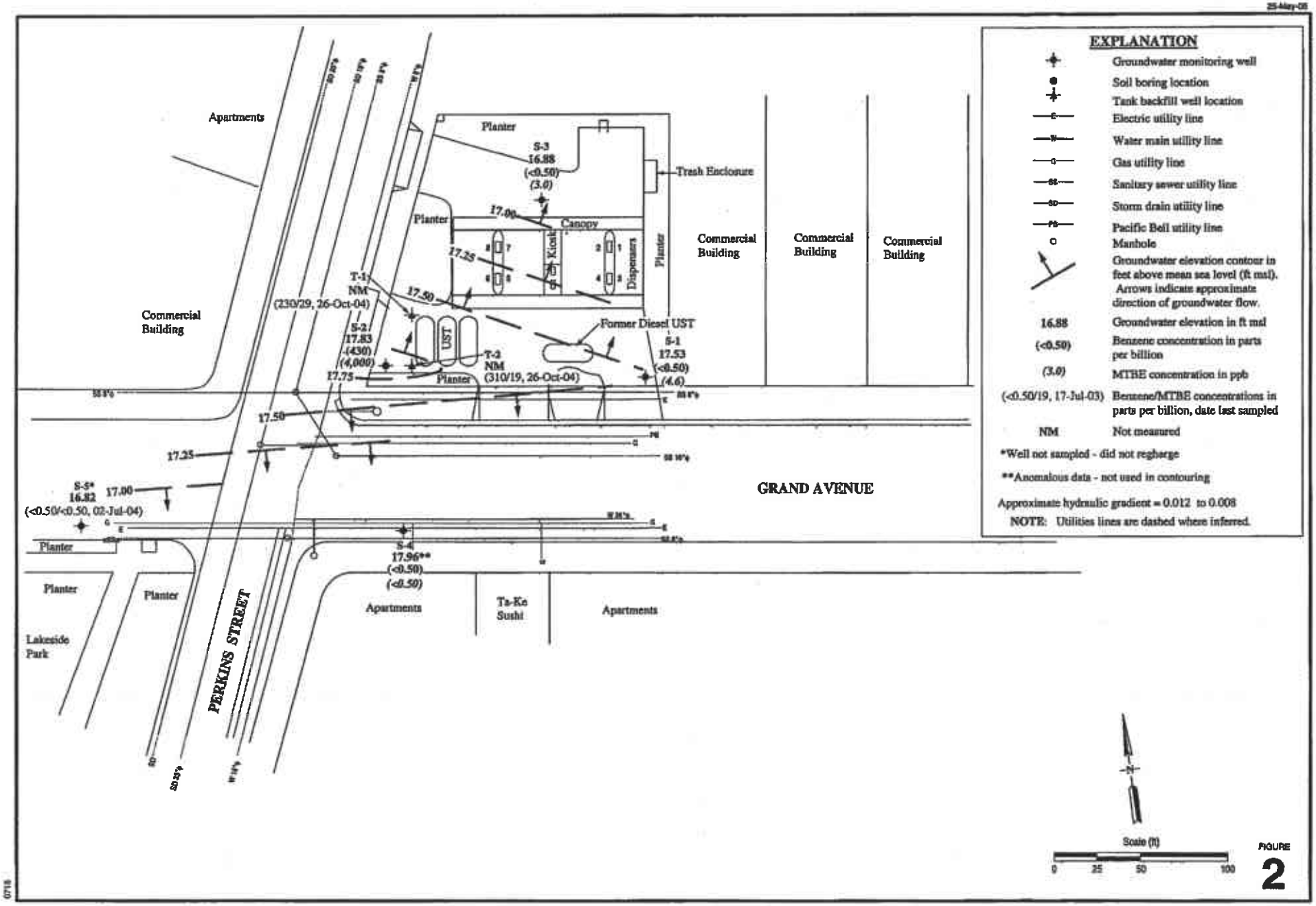
April 13, 2004

Shell-branded Service Station
350 Grand Avenue
Oakland, California

CAMBRIA


15-Oct-04
Apartments
Planter
S-3
17.64
(<0.50)
(0.65)
Trash Enclosure
Dispensers
Planter
Canopy
Kiosk
Dispensers
Dispensers
Planter
Commercial Building
Commercial Building
Commercial Building
T-1
16.75
(2.7)
(24)
17.0
Commercial Building
S-2
16.28
(470)
(6,800)
UST
Former Diesel UST
S-1
16.60
(<0.50)
(2.1)
Planter
T-2
16.82
(26)
(44)
16.0
S-5
16.80
(<0.50)
(<0.50)
15.0
GRAND AVENUE
Planter
S-4
14.23
(<0.50)
(<0.50)
Planter
Planter
PERKINS STREET
Apartments
Ta-Ke Sushi
Apartments
Lakeside Park
EXPLANATION
Groundwater monitoring well
Soil boring location
Tank backfill well location
Electric utility line
Water main utility line
Gas utility line
Sanitary sewer utility line
Storm drain utility line
Pacific Bell utility line
Manhole
Groundwater elevation contour in feet above mean sea level (ft msl). Arrows indicate approximate direction of groundwater flow.
13.31
Groundwater elevation in ft msl
(<0.50)
Benzene concentration in parts per billion
(<0.50)
MTBE concentration in ppb
(<0.50/19, 17-Jul-03)
Benzene/MTBE concentration in parts per billion, date last sampled
Approximate hydraulic gradient = 0.02
NOTE: Utilities lines are dashed where inferred.
N
Scale (ft)
0
25
50
100
FIGURE
2
Groundwater Contour/Chemical Concentration Map
July 2, 2004
Shell-branded Service Station
350 Grand Avenue
Oakland, California
CAMBRIA


03-Dec-04
EXPLANATION
Groundwater monitoring well
Soil boring location
Tank backfill well location
Electric utility line
Water main utility line
Gas utility line
Sanitary sewer utility line
Storm drain utility line
Pacific Bell utility line
Manhole
Groundwater elevation contour in feet above mean sea level (ft msl). Arrows indicate approximate direction of groundwater flow.
13.31 Groundwater elevation in ft msl
(<0.50) Benzene concentration in parts per billion
(<8.50) MTBE concentration in ppb
(<0.50/19, 17-Jul-03) Benzene/MTBE concentration in parts per billion, date last sampled
Approximate hydraulic gradient = 0.03
NOTE: Utilities lines are dashed where inferred.
Apartments
Planter
S-3
15.40
(<0.50/0.65, 02-Jul-04)
Trash Enclosure
Dispensers
Canopy
Kiosk
Commercial Building
T-1
16.41
(230)
(29)
S-2
15.93
(370)
(7,400)
T-2
16.40
(310)
(19)
UST
Former Diesel UST
S-1
15.90
(<0.50/2.1, 02-Jul-04)
GRAND AVENUE
S-5
16.34
(<0.50/<0.50, 02-Jul-04)
S-4
13.20
(<0.50)
(<8.50)
Lakeside Park
PERKINS STREET
Ts-Ke Sushi
N
Scale (ft)
0
25
50
100
FIGURE
2
Groundwater Contour/Chemical Concentration Map
October 26, 2004
Shell-branded Service Station
350 Grand Avenue
Oakland, California
CAMBRIA
0715



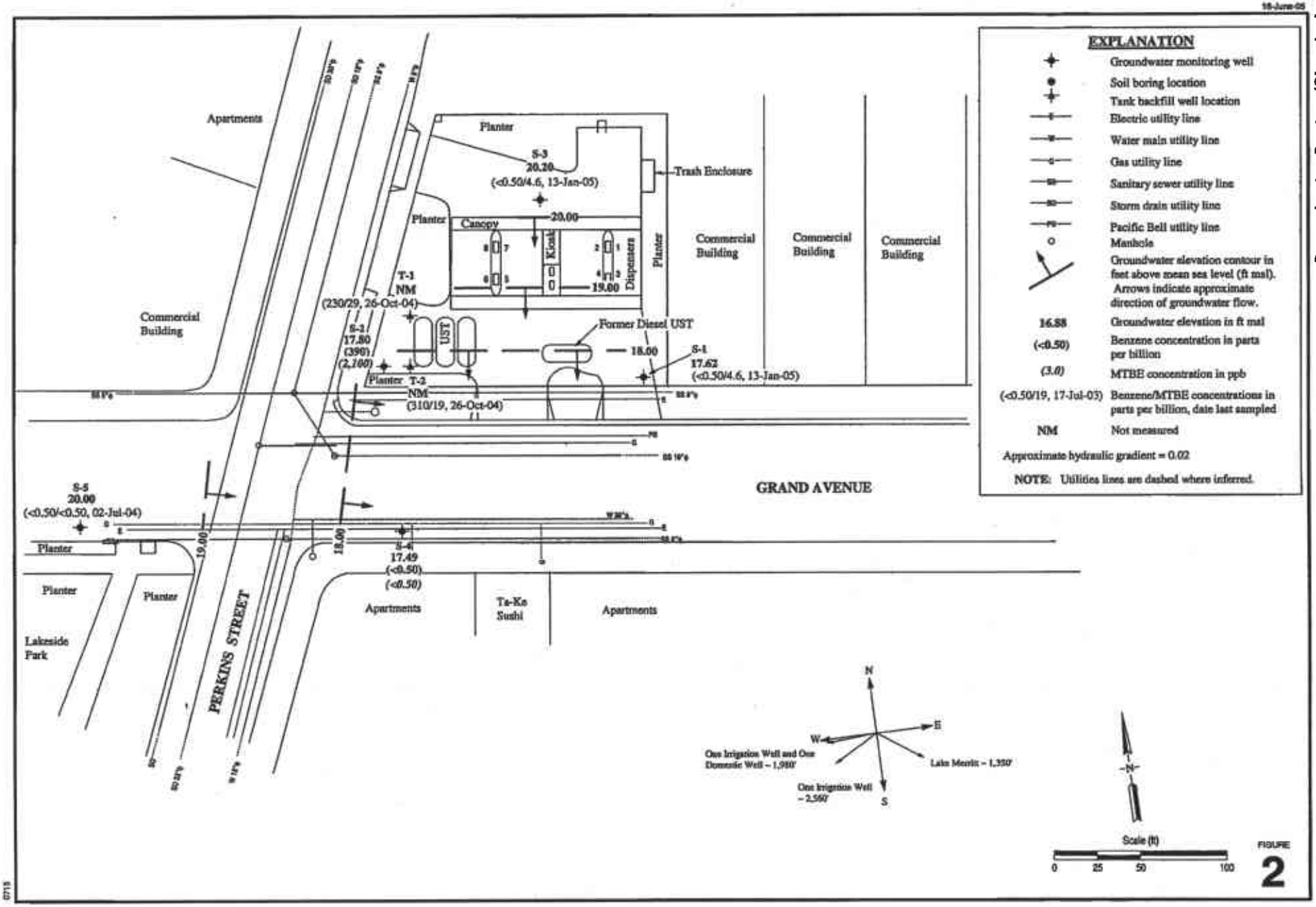
Groundwater Contour/Chemical Concentration Map

January 13, 2005

CAMBRIA

Shell-branded Service Station
350 Grand Avenue
Oakland, California

FIGURE
2



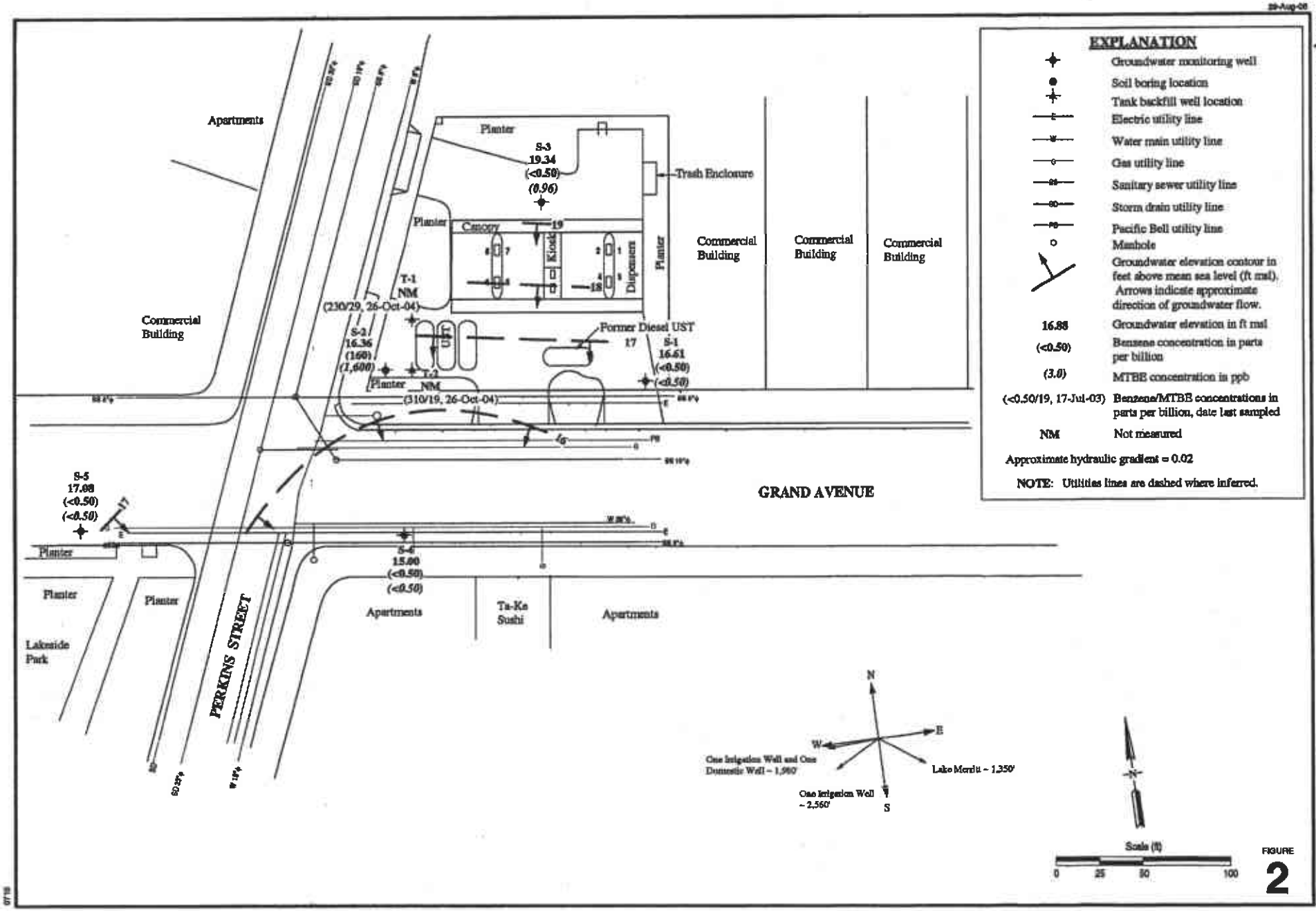
Groundwater Contour/Chemical Concentration Map

April 15, 2005

CAMBRIA

Shell-branded Service Station
350 Grand Avenue
Oakland, California

FIGURE
2



Groundwater Contour/Chemical Concentration Map

August 1, 2005

Shell-branded Service Station
350 Grand Avenue
Oakland, California

FIGURE
2