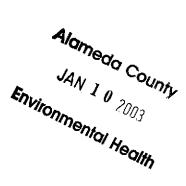


January 8, 2003 SCI 1039.008

Mr. Don Hwang Hazardous Materials Specialist Alameda County Health Care Services Agency 1131 Harbor Bay Parkway Alameda, California 94502-6577



Site Investigation and Groundwater Monitoring Program Activities Conducted November 2001 to November 2002 StID # 3035
327-34th Street
Oakland, California

Dear Mr. Hwang:

This letter records the results of activities performed by Subsurface Consultants, Inc. (SCI) at the above-referenced property between November 2001 and November 2002. Activities conducted included the following:

- Semi-Annual Groundwater Monitoring Event November 2001
- Free Product Removal Event February 2002
- Semi-Annual Groundwater Monitoring Event May 2002
- Well Survey August 2002
- Develop Conceptual Site Model 2002
- Data Review and Evaluation 2001 through 2002
- Recommend Revision to Groundwater Monitoring Program 2002

The location of the property, referred to herein as the Site, is shown on the Vicinity Map, Plate 1 and the Site Plan, Plate 2.

BACKGROUND

On March 4 and 5, 1993, one 1,000-gallon underground storage tank (UST) containing unleaded gasoline and one 1,000-gallon UST containing waste oil were removed by others under the direction of Alameda County Health Care Services Agency (ACHCSA). Results of chemical analyses on soil samples collected beneath the ends of the gasoline and waste oil USTs (depth of about 9 to 11 feet below the ground surface, bgs) indicated that previous releases from the gasoline UST had significantly impacted soil, and releases from the waste oil UST had not impacted soil.

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GeoPlexus, Inc. (GeoPlexus) conducted a soil and groundwater investigation in 1993 to assess petroleum hydrocarbon impacts to groundwater. GeoPlexus installed three groundwater monitoring wells (MW-1 through MW-3, see Plate 2) in the area immediately adjacent to the former UST area. Analytical test results identified that significant impact from gasoline-range hydrocarbons existed at two of the wells (MW-2 and MW-3). Approximately 1/4 inch of free product was observed floating on the water in well MW-3. The product was reportedly gasoline.

SCI was retained in September 1997 to continue the evaluation of impacts due to free floating and dissolved phase petroleum hydrocarbons in groundwater. SCI installed two additional wells, MW-4 and MW-5, in June 1998, further downgradient from the former UST area. Monitoring of the five onsite wells was performed periodically with results suggesting that the free product plume was localized to the former UST area and had not migrated significantly, given that free product had not been detected in well MW-4 situated within 70 feet of the former UST area. The dissolved product plume, however, was observed to have migrated as evidenced by tracking low level and degraded gasoline constituents to MW-5 located about 130 feet downgradient of the former UST area.

In November 1999, the ACHCSA requested that additional work be conducted at the Site to (1) further characterize the downgradient extent of the plume, and (2) evaluate the likelihood of contaminant plume migration via an existing concrete box culvert transecting the east side of the Site. SCI reviewed a City map indicating that the culvert was referred to as a 5-foot by 6-foot reinforced concrete box culvert, aligned from north to south coming into the Site, across 34th Street, and then angling eastward toward Broadway. SCI further learned that a cave-in occurred along the alignment of the culvert below the Site during the winter of 1983. Repair plans prepared by Jordan, Casper, Woodman, Dobson (JCWD) indicate that the cave-in was located in the parking lot area on the east side of the Site structure, about 35 feet south of an existing manhole and along the culvert alignment. The JCWD plans indicate that the culvert flow line in the area of the repair is located about 22.5 feet below the pavement surface. The depth to groundwater, as measured in the onsite wells, varied seasonally from 15 to 24 feet bgs, which suggested that the culvert could potentially be acting as a seasonal preferential pathway.

Although the cause of the cave-in was not described on the plans reviewed by SCI, it appears that an 11-foot long segment of the culvert was replaced, and a 5-foot diameter pipe liner was placed into the culvert. The pipe liner reportedly extends about 70 feet northward from the newly repaired area. It is unclear whether access to the culvert through the existing manhole, was obstructed by the pipe liner. Specifications regarding the material used to backfill the culvert trench were not available.

In July 2000, SCI installed two additional monitoring wells (MW-6 and MW-7) on the east side of the Site and conducted a semi-annual event. The new wells are approximately 30 feet west (MW-6) and 30 feet east (MW-7) of the culvert alignment. Low concentrations of MTBE and xylenes are the only fuel constituents detected in well MW-6 during the July 2000 and April 2001 events; no fuel constituents had been detected in well MW-7. Our evaluations further indicated that the flow line of the culvert is situated approximately 4 to 5 feet below the

Mr. Don Hwang Alameda County Health Care Services Agency January 8, 2003 SCI 1039.008 Page 3

groundwater level measured in well MW-6 and 5 to 7 feet below the groundwater level measured in well MW-7.

ACHCSA has been consulted on an ongoing basis regarding site findings. Their requirements included conducting ongoing groundwater monitoring and free product removal events, development of a site conceptual model for use in evaluation of site risks and preparation of reports. A reference list of Site reports is included as Appendix A.

GROUNDWATER MONITORING EVENT – NOVEMBER 2001

On November 20, 2001 a semi-annual monitoring event was conducted by SCI in accordance with ACHCSA requirements. Initially, the depth-to-water was measured and the presence of free product was checked in all wells. SCI observed no free product in any of the wells. Groundwater elevation data is summarized in Table 1¹.

In accordance with the ACHCSA approved monitoring plan, all site wells (MW-1 through MW-7) were purged of approximately 3 well casing volumes of water using new disposable bailers. Measurements of pH, temperature, conductivity and dissolved oxygen (DO) were made and were recorded on field forms, which are attached. Approximately 34 gallons of water was purged from the subject wells and placed into a labeled 55-gallon drum temporarily stored onsite.

Once groundwater levels recharged, the wells were sampled with new disposable bailers. Groundwater samples were decanted into pre-cleaned containers, placed in ice-filled coolers, and remained chilled until delivery to the analytical laboratory. Chain-of-custody documentation accompanied the samples to the laboratory.

Curtis & Tompkins, Ltd., a state-certified chemical testing laboratory, performed chemical analyses on groundwater samples. The testing program included the following:

- Total extractable hydrocarbons as diesel (TEHd) and motor oil (TEHo), using EPA Method 8015 with silica gel cleanup,
- Total Volatile Hydrocarbons as gasoline (TVHg), using EPA Method 8015m,
- Benzene, toluene, ethylbenzene, total xylenes (BTEX) and Methyl tertiary butyl ether (MTBE), using EPA method 8260,
- Ferrous iron (Fe[II]), manganese (Mn), and sulfate (SO₄), using standard methods, and
- Ammonia (NH₃), ortho-phosphate (o-PO₄), and carbon dioxide (CO₂), using standard methods.

Groundwater analytical test results are summarized in Table 2. Field and laboratory measurements of various bioparameters are summarized in Table 3. Copies of the Field Forms

Table 1 has been updated to reflect a recent survey of the groundwater monitoring wells.

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are included in Appendix B. Analytical data reports and chain-of-custody documents are presented in Appendix C. In addition, the analytical data was obtained in an electronic format in compliance with current State of California Water Resource Control Board requirements for Underground Storage Tank Program sites.

FREE PRODUCT REMOVAL EVENT - FEBRUARY 2002

In accordance with ACHCSA requirements, SCI checked all onsite monitoring wells for free floating product and measured the depth to groundwater on February 19, 2002.

No free product was observed in any well. Groundwater elevation and historical free product measurements are presented in Table 1.

GROUNDWATER MONITORING EVENT - MAY 2002

In accordance with ACHCSA requirements SCI conducted a semi-annual monitoring event on May 21 and 22, 2002. Initially, the depth-to-water was measured and the presence of free product was checked in all wells. No free product was observed. Groundwater elevation data is summarized in Table 1.

Groundwater sampling and testing protocols described for the November 2001 semi-annual groundwater monitoring event were followed for this event. Approximately 40 gallons of water was purged from the subject wells and placed into a labeled 55-gallon drum temporarily stored onsite.

Once groundwater levels recharged, the wells were sampled with new disposable bailers. Groundwater samples were decanted into pre-cleaned containers, placed in ice-filled coolers, and remained chilled until delivery to the analytical laboratory. Chain-of-custody documentation accompanied the samples to the laboratory.

The groundwater samples were transported to Curtis & Tompkins, Ltd., a state-certified chemical testing laboratory for analyses. The identical testing program for the November 2001 event was followed.

Groundwater analytical test results are summarized in Table 2. Field and laboratory measurements of various bio-parameters are summarized in Table 3. Copies of the Field Forms are included in Appendix B. Analytical data reports and chain-of-custody documents are presented in Appendix C. In addition, the analytical data was obtained in an electronic format in compliance with current State of California Water Resource Control Board requirements for Underground Storage Tank Program sites.

WELL SURVEY – AUGUST 2002

In compliance with current State of California Water Resource Control Board requirements for Underground Storage Tank Program sites, a survey of the existing groundwater monitoring

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wells was conducted. The new requirements include locating the wells with respect to a known survey point. The survey was performed by Virgil Chavez Land Surveying on August 8, 2002 and survey measurements were confirmed by a field visit conducted in September 2002². A copy of the survey data is included in Appendix D.

DISCUSSION OF RESULTS

Groundwater Gradient and Flow Direction

Based on the groundwater elevation data³, the groundwater gradient and flow directions for the November 2001, February 2002 and May 2002 events are consistent with previous monitoring events. The groundwater gradient remains relatively flat near the former UST area and becomes slightly steeper to the south. The groundwater flow directions for the respective events are shown on Plates 3, 4, and 5, respectively.

One factor potentially impacting groundwater flow at the site is the underground culvert. The groundwater elevation measured in well MW-6, located about 60 feet cross gradient from well MW-7, and on the west side of the culvert, is routinely several feet lower than the level measured in well MW-7 on the east side of the culvert. The depressed groundwater elevation in well MW-6 may suggest that flow of water in the culvert system, or the potential presence of permeable material in the culvert trench, is affecting the groundwater flow regime locally near well MW-6. Although, the extent of the culvert's influence is unknown, the culvert does not appear to be significantly affecting the main body of the plume, only the immediate area of well MW-6.

Chemical Results

Elevated concentrations of gasoline constituents (TVHg, BTEX and MTBE) were detected during the November 2001 and May 2002 events in wells MW-2 and MW-3, located in the immediate vicinity of the former UST. Wells MW-2 and MW-3 have previously contained free product, however no free product has been detected since December 1999 in well MW-3 and since October 2000 in well MW-2. Free product has not been detected in any other onsite well to date.

Well MW-4 continues to show the presence of dissolved gasoline constituents as would be expected for a well located downgradient of the suspected point of release.

Concentrations detected to date in wells MW-5 and MW-6 indicate that these wells exist at the front edge of the dissolved plume.

The benchmark for the project was an "X" cut in the top of curb near the southwest return of the northwest corner of 34th and Broadway with a known elevation of 60.40' (NGVD 83).

Groundwater elevations presented in this report for the November 2001 and May 2002 events have been corrected based on the results of the recent groundwater survey.

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Xylenes are the only gasoline constituent detected to date in well MW-7 (0.59 ug/L during the November 2001). This data point may represent an anomaly given the location of this well.

Bioparameter Results

Field and laboratory measurements indicate that Site groundwater conditions would promote both aerobic and anaerobic biodegradation. DO readings measured to date are generally higher outside the main contaminant plume limits (wells MW-1, MW-5 and MW-6) than within the plume (wells MW-2, MW-3 and MW-4), yet most events suggest that groundwater recharge is effectively replenishing the DO in the entire area.

Elevated Fe(II) and Mn, and lower NO₃ and SO₄ concentrations within the plume suggest that local anaerobic microbial activity is occurring.

CONCEPTUAL SITE MODEL

To assist in the evaluation of the site data and risks that may be posed by the contaminant plume, SCI developed the following Site Conceptual Model.

The Site is occupied by an automobile sales and repair facility which has been in operation since the early 1950's. The facility was constructed by cutting into the eastern flank of a hillside; the floor level inside the facility is tiered or stepped downward moving to the east.

The Site is bordered to the north by 34th Street and to the west by Broadway. A partially paved parking lot occupies the area west of the property and a driveway to a parking garage extends along the south side of the Site. Structures located downgradient of the Site are occupied by office and/or commercial businesses. None of the structures located to the south have basements, and there are no known drinking water wells in the Site vicinity.

According to a geologic map by Radbruch⁴, the Site is underlain by the Temescal Formation. The Temescal Formation is an alluvial fan deposit comprised of interfingering lenses of clayey gravel, sandy silty clay, and sand-clay-silt mixtures. Additionally, the map shows that a former stream channel beneath the eastern portion of the Site, was a tributary to Glen Echo Creek. The former channel has been diverted to an underground culvert beneath the eastern portion of the Site.

Based on a review of the borehole logs, the Site is underlain by interbedded alluvial soils. The stratigraphy encountered in the wells located on the west side of the culvert is markedly different from that encountered in well MW-7. Well boring MW-7, located on the east side of the culvert alignment, encountered about 20 feet of permeable sandy gravel overlaying sandy lean clays to the depth explored. Groundwater flows within the upper 20-foot thick aquifer material. The well borings (well MW-1 through MW-6) from west of the culvert encountered relatively

Radbruch, Dorothy H., Areal and Engineering Geology of the Oakland West Quadrangle, California, USGS, 1957.

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impermeable clayey materials from the surface to depths of 6 to 18 feet. The clayey material would act to impede or confine groundwater flow and vertical upward migration of vapors. The clayey material layer is in turn underlain by more permeable aquifer formational materials through which groundwater flows.

Seven monitoring wells have been installed to monitor conditions related to the Site and the contaminant plume. Periodic groundwater monitoring has indicated that the depth to groundwater varies across the Site as well as varying seasonally. The depth to groundwater in the former UST area (well MW-2) has varied from about 17 to 23 feet bgs. Seasonal variations have been measured to be 2 to 4 feet.

The groundwater gradient near wells MW-1, MW-2, MW-3 and MW-4 in the immediate former UST area is relatively flat with about 0.25 feet of difference in groundwater elevation between the four points. Wells MW-5 and MW-6 located approximately 130 feet southwest and about 200 feet south east of the former UST area respectively, have similar groundwater surface elevations which have varied up to approximately 2.5 feet lower than those wells located in the UST area, correlating to a slightly steeper gradient. Well MW-7 water elevations are not used in the calculation of the Site gradients, as the well is completed into a different aquifer material.

Well MW-1 is located in an area adjacent to the former waste oil UST area. No significant impacts to groundwater from either of the USTs have been detected by this well and as such the well has served as a background monitoring well since 1993.

Wells MW-2 and MW-3 are located immediately downgradient of the former gasoline UST and have both detected impacts due to the presence of free floating petroleum hydrocarbons since they were installed in 1993. These two wells are within the main body of the contaminant plume.

Well MW-4 is located within the portion of the plume, which is just outside the area where free floating product has been detected to date. Since 1998 this well has detected MTBE concentrations ranging from 1,100 to 1,800 ug/L, as well as moderate concentrations of TVHg and BTEX constituents.

Wells MW-5 and MW-6 are located along the front edge of the plume. Both of these wells have detected lower MTBE concentrations (average detected MTBE concentrations, 240 ug/L in well MW-6 and 9 ug/L in well MW-5) and sporadic and relatively low concentrations of gasoline constituents.

Well MW-7 appears to be located cross gradient and outside the influence of the plume.

CONCLUSIONS

The portion of the plume, which previously contained free product and where elevated concentrations of dissolved gasoline constituents still remain, appears relatively stabilized. The absence of free floating product within wells MW-2 and MW-3 is the only measured change to the condition of the plume since the wells were installed in 1993.

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Contaminant concentrations detected to date in groundwater below the existing structure are not judged to present a risk to human health given the continued use of the structure as an automotive repair garage. Vertical upward migration of volatile gasoline constituents, which may be occurring, would be limited by the clayey aquitard which is greater than 5 feet in thickness and which underlays the concrete floor slab.

Dissolved contaminant concentrations at the front edge of the plume (wells MW-5 and MW-6) remain significantly less than those measured within the main body of the plume. The highest detected concentrations are below the respective RWQCB and City of Oakland potentially toxic chemical constituent screening levels⁵ considering that the shallow groundwater level is situated deeper than 10 feet (3 meters) bgs and that the groundwater is not a current or potential source of drinking water. A comparison of various concentrations on site to the applicable screening levels is shown below:

	Highest Detected Conc. Center of Plume Below Bldg. ug/L	Tier 2, Site Specific Target Level Clayey Silts Inhalation of Indoor Air in Commercial Bldg ug/L	Highest Detected Conc. Front Edge of Plume ug/L	RWQCB Risk Based Screening Levels Table D ug/L
Benzene	10,000 (MW-2)	89,000	0.83 (MW-5)	46
Toluene	27,000 (MW-2)	Value would exceed solubility	12 (MW-5)	130
Ethylbenzene	5,300 (MW-3)	Value would exceed solubility	1.2 (MW-5)	290
Xylenes	33,000 (MW-3)	Value would exceed solubility	11 (MW-5)	13
MTBE	5,800 (MW-2)	Value would exceed solubility	450 (MW-6)	1,800

Table D from RWQCB Application of Risk-Based Screening Levels and Decision Making to Sites with Impacted Soil and Groundwater - dated December 2001, Tier 2 from City of Oakland Urban Land Redevelopment Program Guidance Document - dated January 2000.

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Conditions conducive to both aerobic and anerobic biodegradation appear to exist and are actively occurring at the Site. These natural processes coupled with free product removal have most likely been responsible for promoting the stability of the plume.

The natural processes, including the buffering capacity of the soil system do appear sufficient to reduce the plume mass over time, as is evidenced by the reduction in TVHg/MTBE concentrations when comparing concentrations measured near the center of the plume (well MW-4) to those measured at the front edge of the plume (well MW-5).

RECOMMENDATIONS

Based on our analysis of Site data, continued periodic monitoring of the chemical concentrations in groundwater is viewed as the most appropriate remedial response for the Site given the continued automotive facility use of the property. It is recommended however, that the monitoring and free product removal activities program be reduced from semi-annual events to an annual event conducted in the spring each year, as described herein. We believe this reduction is justified given the relative stability of the plume as observed over the past 9 years of study.

Annual monitoring would include checking all 7 onsite wells for the presence of free product and determining the depth to groundwater. Free floating product which is visibly observed in any well during the event, would be removed from the well by bailing until no visible presence of the product is visible on the surface of the water in the bailer. Samples should be obtained from all wells during the event, with the exception of any well containing free product. The well samples should be analyzed for TVHg, TEHd, TEHo, BTEX and MTBE.

It is further recommended that bioparameter testing be continued during the annual event on samples obtained from wells MW-1, MW-3, MW-5 and MW-6. The scope of the bioparameter testing should include DO, pH, Fe, Mn, SO₄, and N-NO₃, as these parameters have consistently represented changes between portions of the plume, and have repeatedly provided insight into the aerobic and anerobic plume behavior.

Please provide written confirmation that this scope of monitoring is acceptable. The next event will be conducted In Spring 2003, when groundwater levels are anticipated to be at their highest.

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If you have any questions, please call either of the undersigned.

Yours very truly,

Subsurface Consultants, Inc.

Emily Silverman Staff Geologist

Jeriann N. Alexander, PE, REA

Civil Engineer 40469 (expires 3/31/03)

Registered Environmental Assessor 03130 (expires 7/03)

PROFESSIONALEXANDERS No. CO40469
Exp. #77/0

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Attachments: Table 1 - Groundwater and Free Product Elevation Data

Table 2 - Summary of Petroleum Hydrocarbon Concentrations in Groundwater

当 NO. REA-03/30

Expires: 7/03

Table 3 - Summary of Bioparameter Data

Plate 1 - Vicinity Map Plate 2 - Site Plan

Plate 3 – Groundwater Elevation Data – November 2001 Plate 4 – Groundwater Elevation Data – February 2002 Plate 5 – Groundwater Elevation Data – May 2002

Appendix A – List of Reports Appendix B – Field Forms

Appendix C – Analytical Test Reports/Chain-of-Custody Documents Appendix D - Monitoring Well Survey, letter dated September 4, 2002

cc:

Mr. Don Strough

Strough Family Trust of 1983

327 34th Street

Oakland, California 94611

Mr. Greg Brandt, Esq.

Wendel, Rosen, Black & Dean, LLP

1111 Broadway, 24th Floor Oakland, California 94612

TABLE 1 GROUNDWATER AND FREE PRODUCT ELEVATION DATA 327 34TH STREET OAKLAND, CALIFORNIA

Monitoring Well	Date	Elevation	Depth to Groundwater (feet)	Product Thickness (feet)	Groundwater Elevation (feet)	Product Elevation (feet)	Free Product/Purge Water Removed (Gallons)
MW-1	7/27/93	100.00 1	20.79 ³	NA	79.21	NÁ	NA NA
147 44 - 1	10/2/97	100.00	21.22		78.78		
	6/30/98		18.21		81.79	·	
	7/29/98		18.74		81.26		
	8/26/98		19.28		80.72		·
•	10/1/98		19.93		80.07	·	
	10/30/98		20.22		79.78		·
	11/30/98		19.99		80.01		
	12/28/98		19.81		80,19		
	1/25/99	•	19.62		80.38		
	2/26/99		17.18		82.82		·
	3/24/99		17.28		82.72		
	5/12/99		17.91		82.09		
	12/15/99		21.01		78.99		
	3/20/00		16.25		83.75		
	7/20/00		19.63		80.37		·
	10/11/00		20.80	·	79.20		, ·
	4/10/01		18.81		81.19		
	7/10/01		20.51		79.49		·
	11/20/01	64.69^{2}	21.36		43.33		
	2/19/02		18.95		45.74		
	5/21/02		19.82		44.87	H+	-
MW-2	7/27/93	101.27 1	22.10 ³	NA	79.17	NA	NA
	10/2/97		22.91	0.43	78.36	78.79	7
	6/30/98		19.69	0.45	81.58	82.03	9
	7/29/98		20.11	0.29	81.16	81.45	
•	8/26/98		20.54	0.08	80.73	80.81	
:	10/1/98		21.52	0.42	79.75	80.17	6
*	10/30/98	•	21.54	0.10	79.73	79.83	< 0.001
	11/30/98		21.21	0.04	80.06	80.10	·
	12/28/98		21.10	0.02	80.17	80.19	1
	1/25/99	4	20.80	0.01	80.47	80.48	6
	2/26/99		18.00	sheen	83.27	83.27	1
	3/24/99		18.27	trace	83.00	83.50	1
	5/12/99		19.08	trace	82.19	82.19	. 1
	12/15/99		22.42	0.025	78.85	78.88	3

TABLE 1 GROUNDWATER AND FREE PRODUCT ELEVATION DATA 327 34TH STREET OAKLAND, CALIFORNIA

Monitoring Well	Date	Elevation	Depth to Groundwater (feet)	Product Thickness (feet)	Groundwater Elevation (feet)	Product Elevation (feet)	Free Product/Purge Water Removed (Gallons)
MW-2	3/20/00		17.09	0.026	84.18	84.21	5
(Con't.)	7/20/00		20.86	0.020	80.41	80.43	3
(Con t.)	10/11/00		22.10		79.17		1
	4/10/01		19.98		81.29		1 .
	7/10/01		21.85		79. 4 2	<u></u>	_ -
		c = 0 = 2				- 	
	11/20/01	65.95 ²	22.75		43.20		
	2/19/02		20.12		45.83		1
	5/21/02		21 10		44.85		-
MW-3	7/27/93	101.29 ¹	22.28 ³	0.02	79.01	79.03	
	10/2/97		22.71	0.03	78.58	78.61	6
	6/30/98		19.47		81.82		
	7/29/98		20.01		81.28		
	8/26/98		20.62		80.67		
	10/1/98		21.33		79.96		<u></u> ·
	10/30/98		21.62	==	79.67		
	11/30/98		21.31		79.98		
	12/28/98		21.15	0.06	80.14	80.20	1
	1/25/99		20.79		80.50		
	2/26/99		18.02		83.27		
	3/24/99		18.37		82.92		
	5/12/99	•	19.22	, 	82.07		
	12/15/99		22.43	0.0083	78.86	78.87	3.
	3/20/00		17.14		84.15		•••
•	7/20/00		20.98		80.31		
	10/11/00		22.24		79.05		
	4/10/01		20.70		80.59		
	7/10/01		21.97		79.32		'
	11/20/01	65.99 ²	22.80		43.19		
	2/19/02		20.11		45.88		1.5
	5/21/02		21.20		44.79	ere.	

TABLE 1
GROUNDWATER AND FREE PRODUCT ELEVATION DATA
327 34TH STREET
OAKLAND, CALIFORNIA

Monitoring Well	Date	Elevation	Depth to Groundwater (feet)	Product Thickness (feet)	Groundwater Elevation (feet)	Product Elevation (feet)	Free Product/Purge Water Removed (Gallons)
		98.65 ¹	17.00		81.72		
MW-4	6/30/98	98.63	16.93		81.72		
	7/29/98		17.48		80.00	<u> </u>	
	8/26/98		18.65		79.91		
	10/1/98		18.74		79.91 79.63		
\$	10/30/98		19.02	·	79.03 79.91		.·
	11/30/98		18.74		80.05		·
•	12/28/98		18.60		80.33		
	1/25/99		18.32		80.33 82.84		
	2/26/99		15.81		82.64 82.64		·
	3/24/99		16.01		80.94		 -
	5/12/99		17.71		78.82		
	12/15/99		19.83	·	78.82 83.75	· 	
	3/20/00		14.90		83.73 80.27		
	7/20/00		18.38		79.04		 ·
	10/11/00		19.61		79.04 81.10		
	4/10/01		17.55				·
	7/10/01	2	19.34		79.31		
	11/20/01	63.35 ²	20.16		43.19		
	2/19/02	A 1888 C SAN THE RESERVE OF THE SAN TH	17.34		46.01		
	5/21/02		18.57		44.78	•	-
MW-5	6/30/98	100.90 ¹	20.60		80.30		
14111 5	7/29/98	24	21.52		79.38		
	8/26/98		22.21		78.69	<u></u> ,	.
*	10/1/98		22.95		77.95		
	10/30/98		23.23		77.67		,
	11/30/98		23.13		77.77		
	12/28/98		23.18		77.72	·	
	1/25/99		22.61		78.29		
	2/26/99		19.78		81.12		: - ,
	3/24/99		20.25		80.65		4 - <u>4 -</u>
	5/12/99		21.06	•	79.84		·

TABLE 1
GROUNDWATER AND FREE PRODUCT ELEVATION DATA
327 34TH STREET
OAKLAND, CALIFORNIA

Monitoring Well	Date	Elevation	Depth to Groundwater (feet)	Product Thickness (feet)	Groundwater Elevation (feet)	Product Elevation (feet)	Free Product/Purge Water Removed (Gallons)
Well	Date	AME VALUE	(Icer)	(Icce)	(reet)	(ICCC)	(00000)
MW-5	12/15/99		24.19		76.71		
(Con't.)	3/20/00		19.15		81.75		
,,	7/20/00	•	21.84		79.06		
	10/11/00		23.40		77.50		
	4/10/01		22.30		78.60		
	7/10/01		23.64		77.26	 .	
	11/20/01	65.59 ²	24.65		40.94		
	2/19/02		22.37		43.22		
	5/21/02		23.10		42.49		
MW-6	7/20/00	96.60 ¹	18.30		78.30		
	10/11/00		18.69		77.91		4
•	4/10/01	٠	17.85	 .	78.75		
	7/10/01		18.43		78.75	'	,
	11/20/01	59.60 ²	18.67		40.93		<u></u> ·
	2/19/02		17.40		42.20		
	5/21/02		17.68		41 92		-
MW-7	7/20/00	96.75 ¹	15.93		80.82		
	10/11/00		16.90	<i>i</i>	79.85		
	4/10/01		15.80		80.95		<u></u> .
	7/10/01		16.71		80.04		••=
· ·	11/20/01	59.47 ²	16.17		43.30	<u></u>	
	2/19/02		14.92		44.55		
	5/21/02		15.18		44.29		-

NA = Data not available

¹ Elevations are referenced to the top of the well casing of monitoring well MW-1, with an assumed datum of 100.00 feet.

² Revised elevations are based on a survey conducted in August 2002 and referenced to a benchmark with a known elevation (NGVD 29) of 60.40 feet above mean sea level.

⁻ Product not observed

TABLE 2 SUMMARY OF PETROLEUM HYDROCARBON CONCENTRATIONS IN GROUNDWATER 327 34TH STREET OAKLAND, CALIFORNIA

Location	Date	Groundwater Elevation ¹	TVHg (μg/L)	TEHd (μg/L)	TEHo (μg/L)	Benzene (μ g/ L)	Toluene (µg/L)	Ethyl- benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)
MW-1	7/27/93		<50	<50		<0.5	<0.5	<0.5	<0.5	
	10/2/97	78.78	<50	~~		< 0.5	< 0.5	<0.5	<0.5	<2
	6/30/98	81.79	84			<0.5	< 0.5	2.1	0.55	2.1
	10/1/98	80.07	<50	· ·		<1.0	<1.0	<1.0	<1.0	<2.0
	1/25/99	80.38	<50			<1.0	<1.0	<1.0	<1.0	<2.0
	12/16/99	78.99	<50			< 0.50	< 0.50	<0.50	< 0.50	< 0.50
	7/20/00	80.37	< 50	< 50	<300	< 0.50	< 0.50	< 0.50	<0.50	3.4
	4/11/01	81.19	< 50	<50	<300	<0.5	< 0.5	< 0.5	<0.5	1.2
	11/20/01	43.33	<50	<50	<300	< 0.50	1.3	<0.5	0.81	<2.0
	5/21/02	44.87	<50	<50	<300	<0.50	<0.50	<0.50	≼0.50	<2.0
MW-2	7/27/93	79.17	120,000			10,000	27,000	2,900	20,000	
	10/2/97	78.36	*			*	*	*	*	*
	6/30/98	81.58	72,000			7,300	18,000	2,500	15,600	5,500
	10/1/98	79.75	84,000			6,400	17,000	2,600	17,000	2,000
	1/25/99	80.48	130,000			9,000	26,000	3,800	27,500	5,800
	12/16/99		*	*	*	*	*	*	*	*
	7/20/00	80.41	*	*	*	*	* .	*	*	*
	4/11/01	81.29	150,000	1,500	<600	8,000	22,000	2,600	23,500	3,600
	11/20/01	43.20	83,000	5,700	<1,500	5,900	15,000	2,300	12,100	2,800
	5/21/02	44.85	150,000	31.000	<3,000	8,600	25,000	3,500	26,000	4,800
		5 0.04	***		0	0.400	24.000	5 000	22 000	
MW-3	7/27/93	79.01	330,000			9,100	24,000	5,300	33,000	2 500
	10/2/97	78.58	36,000			4,200	11,000	1,800	10,600	3,500
	6/30/98	81.82	51,000			4,800	11,000	1,200	7,100	3,900
	10/1/98	79.96	38,000			3,900	8,500	1,200	6,000	2,300
	1/25/99	80.50	51,000			4,000	10,000	1,200	6,700 *	2,900
	12/16/99		* .	*	*	*	*	*		
	7/20/00	80.31	69,000	2,900	<300	5,700	14,000	1,600	9,300	3,300
	4/11/01	80.59	110,000	4,700	<1,500	7,200	< 0.001	2,300	12,900	4,300
	11/20/01	43.19	100,000	5,900	<900	6,300	16,000	2,400	14,900	4,000

TABLE 2 SUMMARY OF PETROLEUM HYDROCARBON CONCENTRATIONS IN GROUNDWATER 327 34TH STREET OAKLAND, CALIFORNIA

										•
		Groundwater	TVHg	ТЕН	ТЕНо	Benzene	Toluene	Ethyl- benzene	Total Xylenes	MTBE
Location	Date	Elevation 1	(μg/L)	(μg/L)	(μg/L)	(μ g/ L)	(μ g/ L)	(μg/L)	(µg/L)	(μg/L)
						2 222	070	950	- 0.100	1 000
MW-4	06/30/98	81.72	10,000			2,200	930	850	2,100	1,800
	10/01/98		1,100			570	46	130	36 -0.2	1,300
	01/26/99		290			230	<8.3	<8.3	<8.3	1,300
	12/16/99		<50			5.8	<0.50	< 0.50	< 0.50	1,400
	07/20/00		210	<50	<300	91	4.6	19	12.9	1,500
	04/11/01	81.10	350	<50	<300	110	<5.0	<5.0	<5.0	1,100
	11/20/01	43.19	96	<50	<300	<2.5	4.0	<2.5	3.7	2,500
	5/21/02	44.78	940	83	<300	340	5.7	70	<10	1,600
MW-5	6/30/98	80.30	<50			<0.5	<0.5	<0.5	<0.5	23
141 44 -2	10/1/98	77.95	<50			<1.0	<1.0	<1.0	<1.0	<2.0
	1/26/99	78.29	<50			<1.0	<1.0	<1.0	<1.0	<2.0
	12/16/99		<50			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
	7/20/00	77.26	<50	<50	<300	< 0.50	0.98	< 0.50	< 0.50	1.9
	4/11/01	78.60	<50	<50	<300	<0.5	2.6	< 0.5	0.6	1.5
	11/20/01		140	860	2,500	0.83	12	1.2	11	10
	5/21/02	42.49	<50	2,200	<300	<0.50	<0.50	< 0.50	<0.50	<2.0
			_						0.50	1.00
MW-6	7/20/00	78.30	<50	<50	<300	< 0.50	<0.50	<0.50	<0.50	160
	4/11/01	78.75	<50	<50	<300	<0.5	<0.5	< 0.5	2.8	180
	11/20/01	per la comprese de la comprese del la comprese de la comprese de la comprese del la comprese de la comprese del la comprese de la comprese del la comprese de la comprese de la comprese del la comprese del la comprese del la comprese del la compre	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	450
	5/21/02	41.92	<50	<50	<300	<0.5	<0 .5	<0.5	2.1	170
MW-7	7/20/00	80.82	<50	<50	<300	<0.50	< 0.50	<0.50	<0.50	<0.50
ATA 11 /	4/11/01	80.95	<50	<50	<300	<0.5	<0.5	< 0.5	< 0.5	< 0.5
	11/20/01		<50	<50	<300	<0.5	<0.5	< 0.5	0.59	<2.0
	5/21/02	44.29	≈50	<50	<300	<0.5	<0.5	<0.5	<0.5	<0.5

NOTES:

TVHg = Total Volatile Hydrocarbons gasoline range

TEHd = Total Extractable Hydrocarbons diesel range

TEHo = Total Extractable Hydrocarbons motor oil range

MTBE= Methyl Tertiary Butyl Ether

-- = Not analyzed

mg/L = milligrams per liter

 μ g/L = micrograms per liter

<50 = not detected at or above listed analytical reporting limit

* = This sample contained free-product and was not analyzed.

†= Arbitrary datum (see Table 1)

NR = Not Reported

¹ Groundwater elevations beginning with the November 2001 event are based on a survey conducted in August 2002 and referenced to a benchmark with a known elevation (NGVD 29) of 60.40 feet above mean sea level. Elevations shown prior to November 2001 are refereened to the top of well casing for well MW-1, with an assumed datum of 100.00 feet.

TABLE 3 SUMMARY OF BIOPARAMETER DATA 327 34TH STREET OAKLAND, CALIFORNIA

 .			/P3/TT_	CO ₂	DO	pH Es-12	107/10T\	3//-	- 80	N NU	N NO	o-PO₄
		GW 1	TVHg	Lab	Field	Field	Fe(II)	Mn	SO ₄	N-NH ₃	N-NO ₃	=
Location	Date	Elevation ¹	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
												-
MW-1	6/30/98	81.79	84	204	5.0	6.16	0.15	0.046	55	<0.1	< 0.1	2.0
	10/1/98	80.07	<50	192	3.6	6.49	· 				-	
	1/25/99	80.38	<50	389	3.4	6.72	-					
	12/15/99	78.99	<50		3.31	6.52						
	7/20/00	80.37	<50	120	7.37	6.66	0.13	< 0.01	54	<0.1	3.4	<0.2
	4/10/01	81.19	<50	117	NR	NR	< 0.10	0.045	57	< 0.1	6.6	0.15
	11/20/01	43.33	<50	a	0.65	6.47	0.32	1.8	63	<0.1	***	<0.20
	5/21/02	44.87	₹50	120	0.96	5.25	<0.1	0.5	58	-0.1	5.5	<0.20
MW-2	6/30/98	81.58	72,000	185	2.2	5.98	_		_		, 	·
	10/1/98	79.75	84,000		2.7	6.47		-				•••
	1/25/99	80.48	130,000	386	0.3	6.69						••
	12/15/99	78.85	*		*	*	·					
	7/20/00	80.41	*	*	0.88	6.37	*	*	*	*	*	*
	4/10/01	81.29	150,000	168	NR	NR	3.1	2.5	16	0.14	0.19	< 0.20
	11/20/01	43.20	83,000	120	NR	6.15	1.8	2.0	16	<0.1		<0.20
	5/21/02	44.85	150,000	160	0.88	5,99	3.9	1.7	13	-01	0.54	€0.20
MW-3	6/30/98	81.82	51,000	300	2	6.03	1.4	9.8	13	1.4	< 0.1	2.4
	10/1/98	79.96	38,000	240	2	6.65	-					
	1/25/99	80.50	51,000	238	1	7.01						
	12/15/99	78.86	*	_	*	*						
	7/20/00	80,31	69,000	128	2.05	6.73	3.9	6.6	20	< 0.1	0.55	< 0.2
	4/10/01	80.59	110,000	137	NR	NR	1.0	6.0	8.2	< 0.1	0.13	< 0.20
	11/20/01	43.19	100,000	120	2.93	6.67	0.84	12	31	<0.1	_	<0.20
	5/21/02	44.79	91,000	130	101	6.62	4.2	9,6	25	<0.1	0.77	<0,20
MW-4	6/30/98	81.82	10,000	222	2.6	6.18	0.14	4.3	14	0.8	0.8	1.5
	10/1/98	79.96	1,100	320	3.4	< 0.001	 '				_	
	1/26/99	80.59	290	475	6.7	7.00				-	_	
	12/15/99	78.86	<50		1.75	7.02				-	_ '	
	7/20/00	80.31	210	126	3.88	6.67	9.5	5.3	,11	< 0.1	0.04	< 0.2
	4/10/01	80.59	350	107	NR	NR	0.80	6.3	10	< 0.1	< 0.05	< 0.20
	11/20/01	43.19	96	130	0.83	6.51	1.6	10	11	<0.1		<0.20
	5/21/02	44,79	940	150	1.65	6.32	3.1	8.4	9.0	<0.1	0.06	≠0.20
MW-5	6/30/98	80.30	5 0	220	4.3	6.1						
1,2,7	10/1/98	77.95	<50	256	4.8	6.71	_		***			
	1/26/99	78.29	<50	305	9.7	7.04				***		
	12/15/99	76.71	<50		2.72	7.19						
	7/20/00	77.26	<50	134	5.58	6.35	0.11	0.017	49	< 0.1	3.9	< 0.2
	4/10/01	78.60	<50	183	66	NR	< 0.10	0.042	45	<0.1	2.9	0.11
	11/20/01	40.94	140	a	66	6.01	0.20	2.5	42	< 0.1		< 0.20
	5/21/02	42.49	-50	140	66	6,3	<01	0.22	44	≼0.1	3.0	<0.20

TABLE 3 SUMMARY OF BIOPARAMETER DATA 327 34TH STREET OAKLAND, CALIFORNIA

Location	Date	GW Elevation ¹	TVHg (mg/L)	CO ₂ Lab (mg/L)	DO Field (mg/L)	pH Field (mg/L)	Fe(II) (mg/L)	Mn (mg/L)	SO ₄ (mg/L)	N-NH ₃ (mg/L)	N-NO ₃ (mg/L)	o-PO ₄ (mg/L)
MW-6	7/20/00	78.30	<50	122	2.72	6.66	120	1.9	53	6	0.05	< 0.2
	4/10/01	78.75	<50	142	NR	NR	22	2.2	0.69	5.2	< 0.05	< 0.20
	11/20/01	40.93	<50	100	2.03	6.44	29	5.2	1.1	3.4	_	< 0.20
	5/21/02	41,92	<50	100	0.76	6.50	11	3.4	1.4	8.9	0.65	<0.2
MW-7	7/20/00	80.82	<50	32.2	7.15	7.43	<0.1	0.002	7.5	<0.1	2.6	0.13
	4/10/01	80.95	<50	77.6	NR	NR	0.18	0.048	49	<0.1	2.7	0.31
	11/20/01	43.30	<50	62	0.96	7.11	0.16	1.8	63	<0.1		< 0.20
•	5/21/02	44.29	<50	68	103	7.57	0.11	0.35	51	<0.1	2.8	0.11

NOTES:

TVHg = Total Volatile Hydrocarbons as gasoline

 CO_2 = Carbon Dioxide

DO = Dissolved Oxygen

fe(II) = Ferrous iron

Mn = Manganese

 $SO_4 = Sulfate$

N-NH₃ = Nitrate as Ammonia

N-NO₃ ≈ Nitrogen as Nitrate

o-PO₄ = Phosphorous as Phosphate

 $\mu g/L = micrograms per liter$

mg/L = milligrams per liter

-- = test not requested

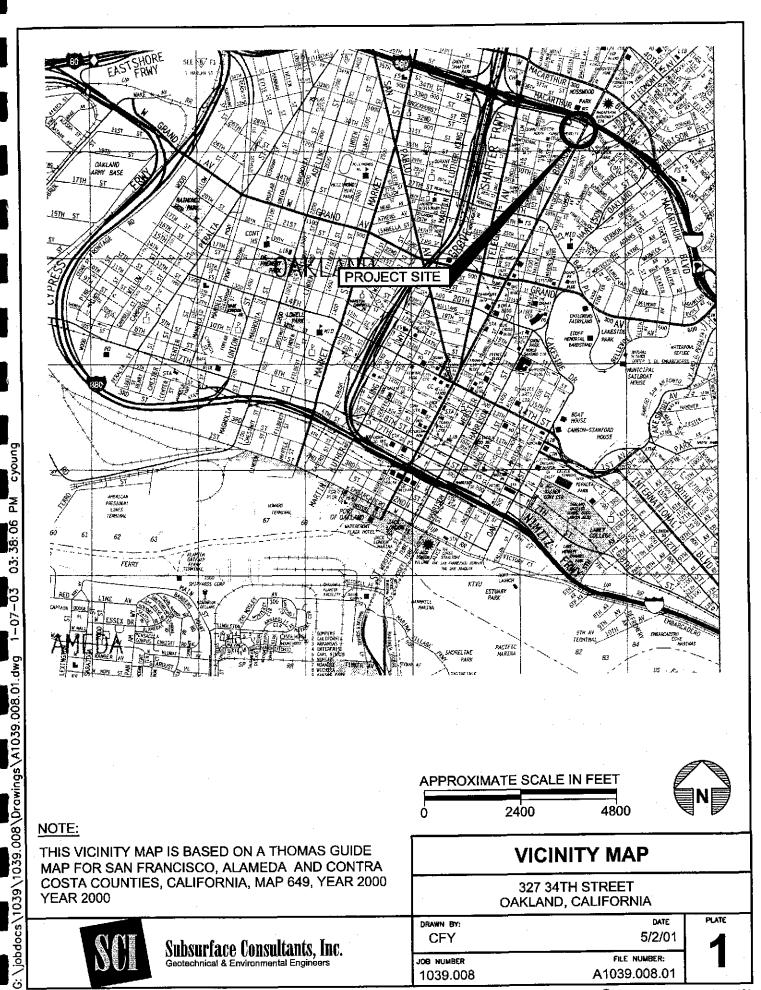
* = This sample contained free-product and was not analyzed

Fe(II) = Ferrous iron

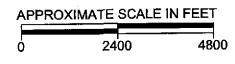
NR = Not Recorded due to possible instrument malfunction

a = Analysis not conducted due to broken sample containers

¹ Groundwater elevations beginning with the November 2001 event are based on a survey conducted in August 2002 and referenced to a benchmark with a known elevation (NGVD 29) of 60.40 feet above mean sea level.



NOTE:





PLATE

			
THIS VICINIT	TY MAP IS BASED (ON A THO	MAS GUIDE
MAP FOR SA	AN FRANCISCO, AL	AMEDA .	AND CONTRA
ACCT! ACU	11110110000,71		

COSTA COUNTIES, CALIFORNIA, MAP 649, YEAR 2000 YEAR 2000



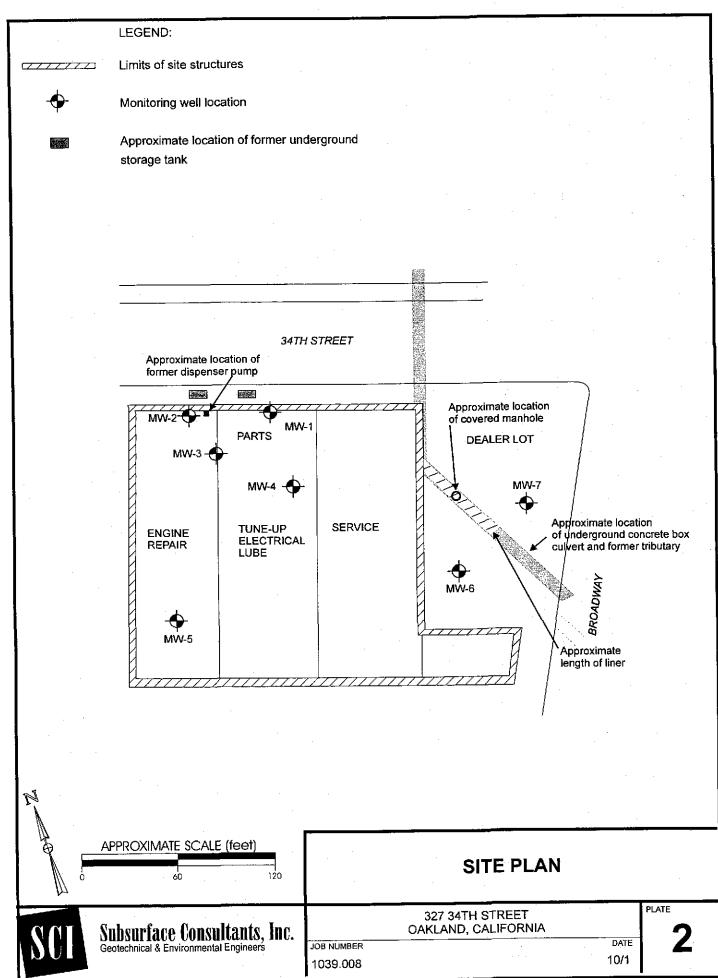
Subsurface Consultants, Inc. Geotechnical & Environmental Engineers

VICINITY MAP

327 34TH STREET OAKLAND, CALIFORNIA

DATE DRAWN BY: 5/2/01 **CFY**

FILE NUMBER: JOB NUMBER A1039.008.01 1039.008



A1039.008.08.CDR

LEGEND

Limits of site structures



Monitoring well location

(43.33)

Groundwater elevation (November 2001)

Approximate location of former underground

storage tank

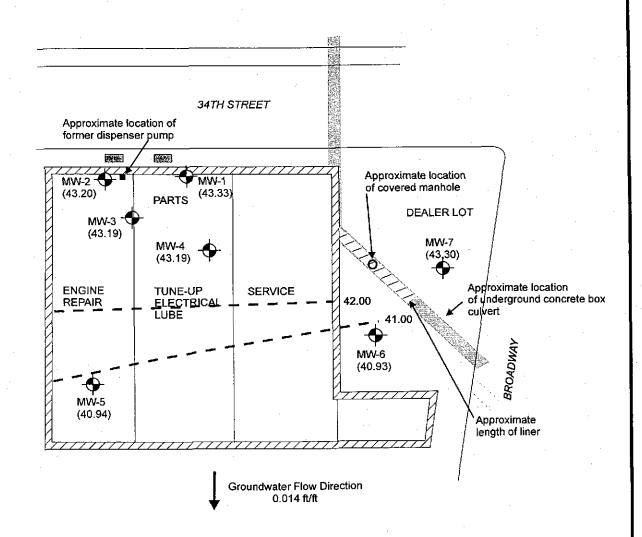
Groundwater countour

Note:

1) Groundwater elevations from wells MW-2 and MW-3 were not used in determining the gradient, since they have historically contained free product. Well MW-7 was not used since it appears to be completed in a different aquifer material.

2) Wells were surveyed on August 8, 2002, to a bench mark with a known

elevation (NGVD 83).





APPROXIMATE SCALE (feet)

GROUNDWATER ELEVATION DATA NOVEMBER 2001



Subsurface Consultants, Inc. Geotechnical & Environmental Engineers

327 34TH STREET OAKLAND, CALIFORNIA

JOB NUMBER

1039,008

DATE 10/02

PLATE

A1039.008.12.CDR

LEGEND

Limits of site structures



Monitoring well location

(45.74)

Groundwater elevation (February 2002)

Approximate location of former underground storage tank

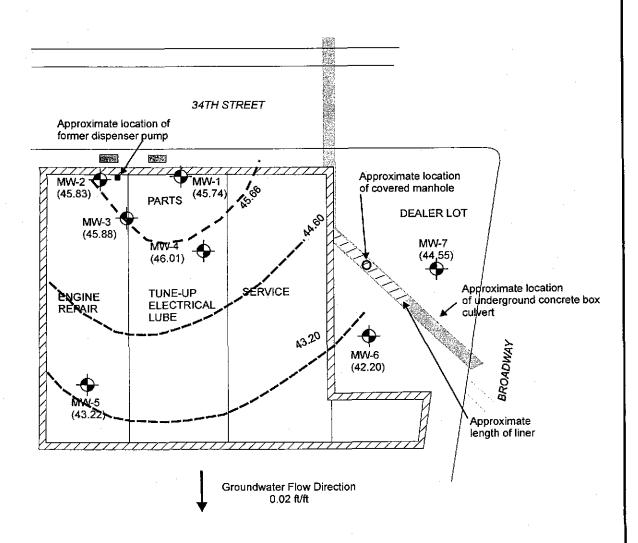
Groundwater contour

Note:

1) Groundwater elevations from wells MW-2 and MW-3 were not used in determining the gradient, since they have historically contained free product. Well MW-7 was not used since it appears to be completed in a different aquifer material.

2) Wells were surveyed on August 8, 2002, to a bench mark with a known

elevation (NGVD 83).





APPROXIMATE SCALE (feet)

GROUNDWATER ELEVATION DATA FEBRUARY 2002



Subsurface Consultants, Inc. Geotechnical & Environmental Engineers

327 34TH STREET OAKLAND, CALIFORNIA

JOB NUMBER 1039.008

DATE 10/02 PLATE

LEGEND

Limits of site structures



Monitoring well location

(44.87)

Groundwater Elevation (May 2002)

Approximate location of former underground storage tank

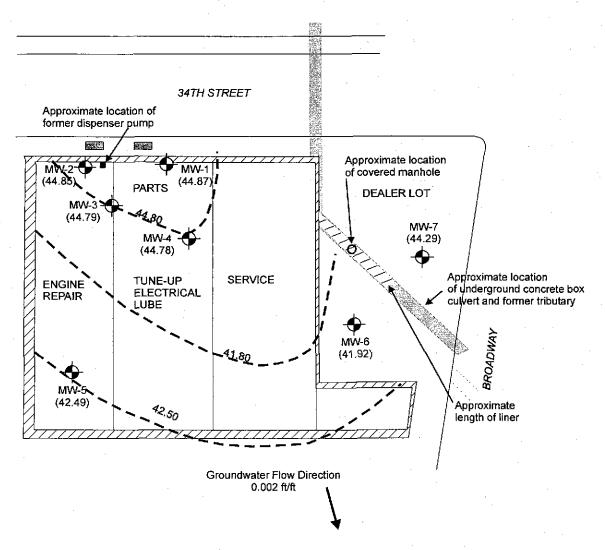
Groundwater contour

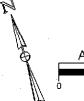
Note:

1) Groundwater elevations from wells MW-2 and MW-3 were not used in determining the gradient, since they have historically contained free product. Well MW-7 was not used since it appears to be completed in a different aquifer material.

2) Wells were surveyed on August 8, 2002, to a bench mark with a known

elevation (NGVD 83).





APPROXIMATE SCALE (feet)

GROUNDWATER ELEVATION DATA MAY 2002



Subsurface Consultants, Inc. Geotechnical & Environmental Engineers

327 34TH STREET

OAKLAND, CALIFORNIA

JOB NUMBER

1039.008

DATE

10/02

PLATE

List of Reports for 327 34th Street Oakland, California

Reports Prepared by GeoPlexus:

8/19/1993 Preliminary Site Characterization Investigation Report

Site characterization includes the installation of monitoring wells MW-1 through MW-3

Reports Prepared by Subsurface Consultants, Inc.

1/16/1998 Work Plan for Investigation of Down Gradient Extent of

Groundwater Contamination

Three soil borings, two of which were completed as MWs

(MW-4 and -5)

1/16/1998 Groundwater Monitoring and Free Product Removal

Report for October 1997 Event

11/17/1998 Report of Groundwater Monitoring Activities and

Additional Subsurface Investigation

Documents the June, July and August 1998 monitoring and FP removal events and the installation of wells MW-4 and

MW-5

12/23/1998 Groundwater Monitoring for October 1998 Quarterly

Event and Free Product Removal Events

Documents September, October, and November 1998

monitoring and FP removal events

3/31/1999 Groundwater Monitoring January 1999 Quarterly Event

and Monthly Free Product Removal

Documents the December 1998, January and February 1999

monitoring and FP removal events

2/7/2000 Groundwater Monitoring & Scope for Additional Plume

Characterization Report

Documents the December 1999 event and provides a Work

Plan for Additional Site Characterization

1/9/2001 Supplemental Site Characterization and Groundwater

Monitoring Report - March to October 2000

Documents the installation of wells MW-6 and MW-7, monitoring and FP removal events conducted in June and

October 2000 and the results of bioparameter testing

11/7/2001 April 2001 Sampling Event and April and July 2001 Free

Product Removal Events report

				-5 %	, WELLSAMI	PLING FORM	ad Reference to	Financia de la companya de la compan		e sije na sije se sama sije na je	·
	PROJECT NAME:	<u> 397</u> 1039	341	de -	57.			esterk in :			-194 <u>- 1</u>
	SAMPLED BY:	45,3	}	,			· · · · · · · · · · · · · · · · · ·	T CARDIC	WELL NO.: DIAMETER:	WM-1	
	DATE:	11/90	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,						MATERIAL:		
	WEATHER:	<u> - 177. ·</u>	CLOUD	<u> </u>			_		ELEVATION:	1000	
							- !				
	TOTAL DEPTH OF CAS	SING (BTOC)	30.	68	FEET	CALCUL ATER	`		5.0		
	•						PURGE VOLU casing dia ² * .04				ga
-	DEPTH TO GROUNDW	ATER (BTOC	21.	<u> 36</u>	FEET	(1001 OI WALLE	costulis cust	HUM THOU Y	olumes)		
	FEET OF WATER IN W	12T T	9,3	9		FREE PRODUC	CT ·		_		
	Or WILLIAM W			<u></u>	FEET	77 Th cor 3 com		~>/-	T. 70		
	•				•	PURGE METH	OD	_15Az	ILER		
٠	MEASUREMENT METH	HOD	•		TAPE & PASTE	RI F	CTRONIC SOU	משרווא		·	
								NDER		THER	
					AGENETICAL PROPERTY	DMDNUSE #					
	GALLONS REMOVED				CONDUCTIVITY		ORP	DO	COM	MENTS	
	OALDONS REMOVED	TIME	PH (4.30)	TEMP	(µMHOS/CM)	TURBIDITTY	(mV)	(mg/l)		color,).	
		11.13	10.37	18.77	1.26	,933	-72.9	.45	Slight	odon	
	3	11:17	1.31	18.79	1.25	931	-71.2	.48	. / .	и	<u> </u>
	5	16:01	6.47	18.77	1.59	923	-71.0	.32	u	tr s	
			1	18.77	<u> </u>	,917	-71.7	.32	4.4		
									· · · · · · · · · · · · · · · · · · ·		
							<u> </u>				
	L	<u> </u>	<u> </u>								· · ·
	DEPTH TO GROUNDWA	TER WHEN	30% RECOV	ÆRED _							
ļ	ACTUAL DEPTH TO GR	OUNDWATE	R BEFORE	SAMPLING	(BTOC)						
	SAMPLING METHOD										
	CONTAINERS / PRESER	VATIVE	3 /	Hoolog	· ·		7				·
		**********		MI.	C			<u> </u>	me		
	•						Lľ	rer(1 w	weer)		
			_ 3 /	HCL	•	-	2	/11mx	ممدلاهما	0.4	
	137 17 778mm		OTI	TER	1	-	OT	HER O	NEDEN V	EA.	
	ANALYSES:	*	250 r	nt pol	BWIHCL	•	2000		oug (ii		
		TEHOLS					250ml	- poly	weserveserveserveserveserveserveserveser	50 H	
			BTEX,	MIDE		 					
		Fe (18	<u> </u>	n' 1/ 0: 1/1 RI=					· · · · · · · · · · · · · · · · · · ·		
		NH2.) - PO11	8 C.Da	}						
		٠,							<u> </u>		
1	MISC FIELD OBSERVATI	ON:		·	· .	•					
	•										
									· · · · · ·		
				· · · · · · · · · · · · · · · · · · ·						•	
	way,										

		.	1-18-18-1	. WEEL SAMI	PĽING FORM	er en	Pitto alka a sa	F. #4 4 4	ersa est is announce	<u>.</u> .
PROJECT NAME:	32	7 3	4th	57.		The second of the second	etskert is a		क्री राज्ये किही।	
JOB NO.	1039	008				-		MET I NO	Δ.	3
SAMPLED BY: DATE:	WELL:		เว็นเขง	FITE		WEI	L CASING	WELL NO.: DIAMETER:	MW-	٨
WEATHER:	<u> </u>	2010	~			_		MATERIAL:		
•	<u></u>	CLOR	<u> </u>			—· ,	TOCE	LEVATION:		
TOTAL DEPTH OF CA		32.		_FEET	CALCULATE	PURGE VOLU	ме	5.0	٥	gai
DEPTH TO GROUNDW	ATER (BTOC)	22:	75	FEET	(Icct of Mater >	casing dia ² * .04	108 * # of V	olumes)		
FEET OF WATER IN W	ELL.	9.7	(FEET	FREE PRODUC	CT				
	•				PURGE METH	COD		ATLER		
MEASUREMENT MET	HOD			Tape & paste	ELE	CTRONIC SOU	NDER	•	OTHER	
				HALL BURNEY BASTER	EVIENTS					
GALLONS REMOVED		pH_	ТЕМР	CONDUCTIVITY (µMHOS/CM)	TURBIDITIY	ORP (mV)	DO (mg/l)		VIMENTS	
1 - 7	11:10	5.76	18152	.475		-73.3	-1,73	ai		u Colo
3	11:16	1011	18.50	,470	<u> </u>	- 73.1	0.00			
5	11:20	6 15	18.5	-530 -528	 	-12.6	-092	1		K(
						-698	26.23			<u> ' (</u>
		ļ							·	
	 -	<u> </u>	2 (8) 2002							
					<u> </u>					~
DEPTH TO GROUNDW	ATER WHEN 8	0% RECO	VERED							
ACTUAL DEPTH TO GR	COUNDWATER	BEFORE	SAMPLING	(BTOC)					<u> </u>	
SAMPLING METHOD		· · · · · · · · · · · · · · · · · · ·			•				B.	
CONTAINERS/PRESER	LVATIVE	3/	HLL			2	/			
			MIL		•		/ None	२८० ८		
Į.		7	 / 18. i		-		Transfer Section	3443)		
			HCL.		-	2	/invpre	इस्कर इस्कर)		
ANALYSES:		, OI	HER		•	OT	HER (j>c	145)		
	7641	, MO							· ·	
. •	TV Ho	BIEX,	MIBE					•	····	
	NA2	1504 0 300	Mar	, NO3						
	- (3 () 3)	, _F Judy	7, <u>CO</u>	2	<u> </u>	·	,			
MISC FIELD OBSERVAT	ION:		•	<u>.</u>		-				
				-		·····				
ı										
					·					

			35 Lan	1 - 3 - 12 - 4	WEELSAMI	LING FORM	richter in Santari	inin Zazin a	e de la companya di sa	essent d'unacce tar	·
	PROJECT NAME:	· 39	7 3	476	ST.			-rearme, per	riyarening	- 1 Tag 3 ()200.	/-
	JOB NO.	103	9,009			·	_				_
	SAMPLED BY:			BURN	ette			T O LODGE		<u>MW-</u>	3
	DATE:	4/2					- MEI		DIAMETER:		
	WEATHER:	27	· ci	oubs			_		MATERIAL: LEVATION:	PUC_	
					<u> </u>		- !	1001	LEVATION:		
	TOTAL DEPTH OF CAS	ING (BTOC)	30	የ ହ	FEET						
	•.	(,		(1)	FEEL	CALCULATED	PURGE VOLI	UME	4.0		gai
	DEPTH TO GROUNDWA	ATER (BTOC)	22.	80	FEET	(feet of water *	casing dia 0	408 * # of V	olumes)		- .
			8.1	Q.	••	FREE PRODUC	מיזי			•	
•	FEET OF WATER IN WE	IL.	7,0	0	FEET		••		<u></u>		
PROJE JOB NI SAMPI DATE: WEAT TOTAL TOTAL MEASI GALL DEPTH ACTUA SAMPL CONTA						PURGE METH	OD)	BA	UED?		
PROJE JOB NO SAMPI DATE: WEATH TOTAL DEPTH FEET C MEASL GALL DEPTH ACTUAL SAMPLI CONTAL	MEASUREMENT METH	ron							,		
	'			•	TAPE & PASTE	ELE	CTRONIC SOU	INDER	OTHER		
					egenhoenogragme					Maria Personal	ta remed
		•	•		CONDUCTIVITY						
	GALLONS REMOVED		pН	TEMP	(µMHOS/CM)	TURBIDITTY	ORP (mV)	DO (mg/l)		AMENTS	
	0	12:30	6.05	18:39	.676		-68.1	2.93	HEAVY and	color)	
,	1	12:33	10.42	1850	467		-68.4	0.62	. 64	7	 -
	1	12:36	4.55	18,50	,704	1525	-68.2	3.90	17	4	<u> </u>
		12:40	10,60	18,40	723.	.538	-186	3.90	164	4	
		 -	 -			 					
			 			 	ļ	<u> </u>			
	•	-									
	,			År:			ÿ	<u> </u>	<u> </u>		<u> </u>
-	DEPTH TO GROUNDWA	TER WHEN 8	0% RECOV	ÆRED _			<u> </u>				
	ACTUAL DEPTH TO GRO	OT INTOWATER	DEFORM							· · ·	
ı		OOMDWAIER	BEFURE	SAMPLING	(BTOC)						_
,	SAMPLING METHOD		_			•					
	•		-			· · · · · · · · · · · · · · · · · · ·		····	 		
	CONTAINERS / PRESERV	VATIVE	3/	HCL		*	2	/ NONE	<u>-</u>		
			40	ML		•		TERAMI			-
			2	HUL		-			. •		
		•				-	<u> </u>		RESERVE	0	
	ANALYSES:		OTI	IEK,		•	OT	HER (20103		
			•								
		TEITO	. MO								
	0	TUH	BIEX	MTBE							
,		Fe [i]	504	MA	N03						
		NH3 /	0-12	54, C	02						
	MISC FIELD OBSERVATI	ON:		•					è		
	ODOLLI MIL										
	•			 ,	-		·				
	. •					·				<u> </u>	
						·	 				

			-3	WELLSAM	PLING FORM		\$121 AP 14.5	CARLES TO SE	<u>-</u>
PROJECT NAME:	32	7 30	HL	5t.					,,,,
JOB NO.	1030					-			
SAMPLED BY:	W55					- .		WELL NO .: MW -	4
DATE:		0/01				WEL	L CASING I	DIAMETER: 200	
WEATHER:	छा :		107				WELL N	MATERIAL: PUC	7
						- ,	TOC EI	EVATION:	
		27.	<i>H</i> 2			•	•		
TOTAL DEPTH OF CA	SING (BTOC)	- (8€	3)	FEET	CAT OUR ATTER	PURGE VOLU		4.0	
								7,0	
DEPTH TO GROUNDY	VATER (BTOC	20.1		FEET	(recruit Maret.	casing dia ² * .04	108 * # of Vol	iunes)	_
	•				EDW DDADI		•		
FEET OF WATER IN W	ÆLL.		24.	FEET	FREE PRODUC	JT .			
			<u> </u>		THE COLUMN		47A+	,	
	,			•	PURGE METH	OD		LER	
MEASUREMENT MET	HOD			TAPE & PASTE	1211 1 212	CTRONIC SOU) III) iii	•	
Beharings page , a series representation and a					الكليط	CIRONIC SOU	MDEK	OTHER	
				TMEANINE CHERTE	DIVIDNIES				(iii)
				CONDUCTIVITY		ODD			
GALLONS REMOVEL		pН	TEMP	(µMHOS/CM)	TURBIDITTY	ORP (mV)	DO (************************************	COMMENTS	
- 0	14:55	6.22	19.14	740	549	1 - 77 1	(mg/l)	(odor, color,)	
1	14:59	4.39	19.13	.756	1000	70.0	83	light odos	
2	15:02	10.41	19.11	. 754	1 - 5 33 -	-72.0	.53	Li	
И	13.07	1,51	19.10	757	1552	-71.3	.49	11	
	10.01	10,121	1110	· *5 *	.554	-71.7	34	et st	
		 							
		 		<u> </u>					
									
	 -	<u> </u>	!						
DEPTH TO GROUNDWA	ATER WHEN 8	0% RECOV	ERED		1				
									
ACTUAL DEPTH TO GR	LOUNDWATER	BEFORE S	SAMPLING	(BTOC)					
	•			(7)				·····	
SAMPLING METHOD	· .						•		
							·		
CONTAINERS/PRESER	VATIVE	3/	HLL			2	/ NON	e e	
		40 1							
					٠	L.J.	ier (4M3	(445)	
	•	7/	HCL		•	ก	1	/. ~******	
	•	OTE				<u> </u>		<u> ૧૯૬૧</u> ૫૯૦	
ANALYSES:		OID	LE-R			OT	HER (PO	US).	
		٠				-	_		
•	TEHO	44.5						· 	•
•	- TUHS	L BIE							
	- re li	يمكيرك		NO3			· · · · · · · · · · · · · · · · · · ·		
	NH3	10-P	104, C	09					
		•	,						
MISC FIELD OBSERVAT	ION:			<u> </u>	,	•		•	
				•					
· · · · · · · · · · · · · · · · · · ·									
			· · · · · · · · · · · · · · · · · · ·						
								•	

			-3 80	WELLSAMI	PLING FORM			。 《西 春 》四月2年至3年3	20.1.
PROJECT NAME:	327 "	3446	51.	•	4.4.	and a read the se	-teleniamos tari	B - 阿伊拉德基 - B 講 (1) 是	
JOB NO.	1039.						-		<i>.</i>
SAMPLED BY:	WKR				·	- **	T Oleman	WELL NO .: MW-	<u>Š</u>
DATE:	11/20/	01				WEI		DIAMETER: 2"	
WEATHER:	<u> </u>	401	LOY		, , , , , , , , , , , , , , , , , , , ,	_		MATERIAL: Drc	
						- :	100	ELEVATION:	
TOTAL DEPTH OF CASI	NG (BTOC)	28:	56	FEET				0 -	
				_1,445,1	CALCULATED (feet of water *	PURGE VOL	UME	2.0	g
DEPTH TO GROUNDWA	TER (BTOC)	04.	65	FEET	(Icci of Mater	Casing dix +.0	+U8 - # OI A	olumes)	
THE POPULATION OF A SAME		0	a I		FREE PRODUC	T .	1 pt		
FEET OF WATER IN WE	LL,	-3.	71	FEET					
					PURGE METH	OD CO	BA	UER	
MEASUREMENT METHO	OD			TAPE & PASTE				•	*********
Activated Statement and Statement and Advanced A			-	TATE SCHALE	ELE	CTRONIC SOU	NDER	OTHER	
				and the Contraction	OVIDNIS -				indivision
				CONDUCTIVITY		ORP			
GALLONS REMOVED	TIME	pH	TEMP	(µMHOS/CM)	TURBIDITTY	(mV)	DO (mg/l)	COMMENTS (odor, color,)	
	13'30	699	18:02	0.00	0.00	-70.51	19.19	6007	
9	13:30	4.34	18.40	,458	1342	-70.4	1.14		
	13:35	6.01	18,38	,463	345	-70,4	1,04	11 4	
			 		<u> </u>				
							 		
									
DEDTH TO COOL BIDDING	·		<u></u> `		·				
DEPTH TO GROUNDWA	TEK WHEN 80	0% RECO	ÆRED _	·					
ACTUAL DEPTH TO GRO	ספרר <i>בשרו</i> או זו	BEFORE	CAROT DATE	mmo m					
		. BEFURE	PWARTING	(BIOC)		·	<u> </u>		
SAMPLING METHOD		_			•				
CONTAINERS/PRESERV	'ATIVE .	3/	HLL			2	/Non	IE.	
		40	ML		-			<u> १९८१</u>	
		3	de la la companya de	•	-			,	
	•		HLL			2	/UNF	PESCITUED	
ANALYSES:		OTI	IER			OI	HER 🚱	から)	
*.	•	•					•		
	TEHL	MO						<u> </u>	
	IVHS.	BTEX	MIBE						
	FC	50	i Mn	NO3					
-	NH3,	0-PO	4, 0	13					
Micc etci di odorovi :	/ hav.								
MISC FIELD OBSERVATIO). 14:		 _	·					
-						·			
· -									
	_				<u> </u>			-	

	,	.,,	••	* - Trienministri	THIA C ROKIM	A 45 10 10 10	Person A	4.17 赞起的人。	
PROJECT NAME: OB NO. SAMPLED BY: DATE: WEATHER;	397 1039 11/91/0 12/41/0	3477 008	£ 57	-		-	L CASING WELL		MW-6
TOTAL DEPTH OF CASI		<u>28:</u> 18.	5 <u>5</u>	FEET	CALCULATED			5. C)
EET OF WATER IN WE			28	FEET	FREE PRODUC	T			
					PURGE METH	OD		AILER	
MEASUREMENT METHO	OD			TAPE & PASTE		CTRONIC SOU	NDER		OTHER
				<u> Disara Kinkeluk</u>	WINES: E				
GALLONS REMOVED	TIME	pH .	TEMP	CONDUCTIVITY (µMHOS/CM)	TURBIDITTY	ORP (mV)	DO (mg/l)		MMENTS , color,)
	10:00	6.42	18.87	.668	.499	-72.5	2,03	no od	
7	10.07	6.45	18.82	,702 ,718 ·	517	-70,8	317		19
5	101.11	10.44	18.70	735	.528	-1,9,8	3.00	2.4	L.
		 	1.634 762		1 12/1	-187	324		
		1					7.67		4
		<u> </u>					7.0		<u>~</u>
									<u> </u>
EPTH TO GROUNDWA	TER WHEN 8	80% RECOV	/ERED						
EPTH TO GROUNDWAT			. "						
			. "						
EPTH TO GROUNDWAT CTUAL DEPTH TO GRO AMPLING METHOD			. "						
CTUAL DEPTH TO GRO	UNDWATE	R BEFORE	SAMPLING						
CTUAL DEPTH TO GRO	UNDWATE	R BEFORE	SAMPLING			9	/ NONE		
CTUAL DEPTH TO GRO	UNDWATE	R BEFORE	SAMPLING			g Li	/ NONE		
CTUAL DEPTH TO GRO	UNDWATE	R BEFORE	SAMPLING			9	/ NONE	18673)	
CTUAL DEPTH TO GRO AMPLING METHOD ONTAINERS / PRESERV	UNDWATE	3 / 40	SAMPLING			9 LI 2	/ NONE		
CTUAL DEPTH TO GRO AMPLING METHOD ONTAINERS / PRESERV	UNDWATE	3 / 40	SAMPLING 4CL ML			9 LI 2	/NONE TER (AM	18673)	
CTUAL DEPTH TO GRO	OUNDWATE	BEFORE 3 40 3 On	SAMPLING 4CL ML			9 LI 2	/NONE TER (AM	18673)	
CTUAL DEPTH TO GRO AMPLING METHOD ONTAINERS/PRESERV	UNDWATE	BEFORE 3 40 3 OTI	SAMPLING HCL HCL HER	(втос)		9 LI 2	/NONE TER (AM	18673)	
CTUAL DEPTH TO GRO AMPLING METHOD ONTAINERS/PRESERV	OUNDWATE	BEFORE 3 40 3 On	SAMPLING HCL HCL HER	(втос)		9 LI 2	/NONE TER (AM	18673)	
CTUAL DEPTH TO GRO AMPLING METHOD ONTAINERS/PRESERV	OUNDWATE	BEFORE 3 40 3 OTI	SAMPLING HCL HCL HER	(втос)		9 LI 2	/NONE TER (AM	18673)	
CTUAL DEPTH TO GRO AMPLING METHOD ONTAINERS / PRESERV VALYSES:	TEUI, TOHE NH3,	BEFORE 3 40 3 OTI	SAMPLING HCL HCL HER	(втос)		9 LI 2	/NONE TER (AM	18673)	
CTUAL DEPTH TO GRO AMPLING METHOD ONTAINERS/PRESERV	TEUI, TOHE NH3,	BEFORE 3 40 3 OTI	SAMPLING HCL HCL HER	(втос)		9 LI 2	/NONE TER (AM	18673)	
CTUAL DEPTH TO GRO AMPLING METHOD ONTAINERS / PRESERV NALYSES:	TEUI, TOHE NH3,	BEFORE 3 40 3 OTI	SAMPLING HCL HCL HER	(втос)		9 LI 2	/NONE TER (AM	18673)	
CTUAL DEPTH TO GRO AMPLING METHOD ONTAINERS / PRESERV NALYSES:	TEUI, TOHE NH3,	BEFORE 3 40 3 OTI	SAMPLING HCL HCL HER	(втос)		9 LI 2	/NONE TER (AM	18673)	

	327	341	<u>- 87</u>	<u></u>					
IOB NO.	1039	008				-		WELL NO.:	m 10 -
SAMPLED BY:	_WB	,	•			– זעדו	T CASING	DIAMETER:	9"
DATE:	11/21/					_ '''			
WEATHER:	RATINY	<u></u>				-		TEVATION:	216
						T to the	IOCE	TEANTION:	
TOTAL DEPTH OF CASIN	NG (BTOC)	34.	7 <i>R</i>	FEET				0.0	
		-		_ree1		PURGE VOLU		9.0	
DEPTH TO GROUNDWAT	TER (BTOC)	16.1-	<i>†</i> ·	FEET	(feet of water *	casing dia" * .04	08 * # of Vo	olumes)	
•				-	FREE PRODUC	JT .			
FEET OF WATER IN WEL	T	18.8	51	FEET					
					PURGE METH	OD	BATT	ER	
MEASUREMENT METHO	סכ			TAPE & PASTE	107 154	™ ™ ○> ™ □			
·			-	THE COLMSIE	· FLEC	CTRONIC SOU	NDER	on	IER.
				TO PROPERTY OF THE PROPERTY OF	OMENIAS -				
G 177 00 to page 100				CONDUCTIVITY		ORP	DO	СОММ	
GALLONS REMOVED	71ME 0900	<u>PH</u>	TEMP	(µMHOS/CM)	TURBIDITTY	(mV)	(mg/l)	(odor, co	
	0903	12,70	19.3	1756	538	-732	.94	No od.	
3	V V -	1.74	19,4	741	541	- 72.9	,45		4
	0907	1.77	P13	770	,562	-73.00)	,31	. 47	"
<u> </u>	09 11	1,90	19,2		,561	-73.0	.27	+1	14
	0915	7.//	19.1	,768	.563	-73.1	36	11	4,
		 							
									
	L	Ļ <u>.</u>							
		0% RECOV	/ERED						
EPTH TO GROUNDWAT	LER WHEN 8				1.34				
								·	
			SAMPLING	i (BTOC)			•		
CTUAL DEPTH TO GRO			SAMPLING	і (ВТОС)			· · · · · · · · · · · · · · · · · · ·		
CTUAL DEPTH TO GRO			SAMPLING	(ВТОС)	•	ev.			
CTUAL DEPTH TO GRO	UNDWATER	RBEFORE	· · ·	і (ВТОС)	, and the second				
CTUAL DEPTH TO GRO	UNDWATER	BEFORE	HCL	(втос)		2	/ NON	16	
CTUAL DEPTH TO GRO	UNDWATER	BEFORE	· · ·	i (BTOC)		2	/NOA	1 <i>E</i> BERS)	
CTUAL DEPTH TO GRO	UNDWATER	BEFORE	HCL	i (BTOC)		<i>9</i>	/ NOA	16 8685)	XXXXX
CTUAL DEPTH TO GRO	UNDWATER	BEFORE 3 40	HCL MIL HCL	i (BTOC)		g ur	TER (A)M / WMAR	IE BERS) BERSO	X Cont
CTUAL DEPTH TO GRO AMPLING METHOD ONTAINERS / PRESERV	UNDWATER	BEFORE 3 40	HCL	i (BTOC)		g ur	/ NOA TER (AM) / UMAR HER (PC	IE BERS) BERSHD STB)	XXIXX
CTUAL DEPTH TO GRO AMPLING METHOD ONTAINERS / PRESERV	UNDWATER	BEFORE 3 40	HCL MIL HCL	i (BTOC)		g ur	TER (A)M / WMAR	IE BERS) KERZHED KERZHED	XXXXX
CTUAL DEPTH TO GRO AMPLING METHOD ONTAINERS / PRESERV	UNDWATER	BEFORE 3 40 OTT	HCL MIL HCL	i (BTOC)		g ur	TER (A)M / WMAR	IE BERS) KARVED STB)	XXII.om
CTUAL DEPTH TO GRO AMPLING METHOD ONTAINERS / PRESERV	OUNDWATER	BEFORE 3 40 OTI	HCL ML HCL HER	i (BTOC)		g ur	TER (A)M / WMAR	IE BERS) BERZUED BERS)	XXXXX
CTUAL DEPTH TO GRO AMPLING METHOD ONTAINERS / PRESERV	OUNDWATER ATIVE	BEFORE 3 40 OTI	HCL ML HCL HER MTBE	(BTOC)		g ur	TER (A)M / WMAR	IE BERS) ESERVED STES)	XXXXX
CTUAL DEPTH TO GRO AMPLING METHOD ONTAINERS / PRESERV	OUNDWATER ATIVE	BEFORE 3 40 OTT	HCL MIL HER MIBE	N63		g ur	TER (A)M / WMAR	IE BERS) KARVED NB)	XALAN A
DEPTH TO GROUNDWAT ACTUAL DEPTH TO GRO AMPLING METHOD CONTAINERS / PRESERV NALYSES:	TEHU, TUH- TOH- NH3,	BEFORE 3 40 OTT	HCL MIL HER MIBE			g ur	CER (AM) LUMPE HER (PC	IE BERS) BERZVED BEB)	No.
CTUAL DEPTH TO GRO AMPLING METHOD ONTAINERS / PRESERV	TEHU, TUH- TOH- NH3,	BEFORE 3 40 OTT	HCL MIL HER MIBE	N63		g ur	TER (A)M / WMAR	IE BERS) BERZUED BERS)	XXXXX
CTUAL DEPTH TO GRO AMPLING METHOD ONTAINERS / PRESERV NALYSES:	TEHU, TUH- TOH- NH3,	BEFORE 3 40 OTT	HCL MIL HER MIBE	N63		g ur	CER (AM) LUMPE HER (PC	IE BERS) ESERVED STES)	XXXX
CTUAL DEPTH TO GRO AMPLING METHOD ONTAINERS / PRESERV NALYSES:	TEHU, TUH- TOH- NH3,	BEFORE 3 40 OTT	HCL MIL HER MIBE	N63		g ur	CER (AM) LUMPE HER (PC	IE BERS) KERWED KIB)	XXXXX

GROUNDWATER DEPTHS

Project Name: 327/34th STREET

Job No.: 1039.008 Measured by: WSB

	· _			
			Groundwater	
Well	Date	Time	Depth (feet)	Comments
MW-6	2/19/02	10:20		water level taken, no odor, no free product.
MW- 7	2/19/02	10:37	14.92	water level taken, no odor, no free product.
MW-2	2/19/02	10:45	20.12	Water level taken, no odor, no free product. WATER LEVEL TAKEN, HEAVY CAS COOK + LIGHT S NO FREE PRODUCT, PLINEED 1.0 GALLONS.
MW-3	2/19/02	11:05	20.11	NO FREE PRODUCT, PURGED 1.5 GALL
MW-5	2/19/02	11*.25	22.37	WATER LEVEL TAKEN, NO ODOR, NOT
MW-4	2/19/02	12:00	17.34	water level taken, no odor, no free product.
MW-1	2/19/02	12:20	18.95	water level taken, no odor, no free product.
			-	
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<u> </u>	<u> </u>			
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	<u> </u>			
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		L		

PRODUCE

Subsurface Consultants FIELD REPORT

Sheet _1__ of _1_

	REPORT NO.
PROJECT: 327 / 34th STREET JOB NO:	10391.008 REPORT NO.
·	2/19/2002
HOURS - From: To: To: TOTAL	HRS: 5.0
EQUIPMENT IN USE:	
TYPE OF SERVICES PROVIDED: □ Exploration	☐ Field Density Testing
☐ Site Meeting ☐ Construction Observation	NATER LEVELS
- MW-6 water land margined, no odor; no	he product.
	· · · · · · · · · · · · · · · · · · ·
-MW-7 Water level movement, no odor, No	her product
-MW-2 Water land newsured @ 10:45 Hears Ga	a odortlisht show
-MW-2 Water land measured @ 10:45, Heavy Ga Mor free product, Pursed I.O Gallons. -MW-3 Water land measured @11:05, Houng	
-MW-3 Water land messured @11:05, Houng	tos dort Light show
No fee product, Auged 1.5 Gallons.	
-MW-5 Water level measured@ 11:25, No o	
- MW-4 Water land measured @12:00, Mo ad	or, no free product
,	
-MW-1 Water land measured @ 17:20, More	oder, no pee product
Prepared by: Villia Some Reviewed by:	

master.doc\fldrpt.doc

GROUNDWATER DEPTHS

Project Name:

1137 34th Street, Oakland

Job No.:

1039.008

Measured by:

E Silverman

Well	Date	Time	Groundwater Depth (feet)	Comments
MW-1	5/21/02		19.82	
MW-2	5/21/02		21.10	
MW-3	5/21/02		21,20	
MW-4	5/21/02		18:57	
MW-5	5/21/02	i	23,16	
MW-6	Striler		17.68	
MW-7	5/21/02		15.18	

WELL SAMPLING FORM

PROJECT NAME:	327 34th Stree	t, Oakland		*						
JOB NO.	1039.008				WELL NO.: mw-1					
SAMPLED BY:	E Silverman					* WEL	L CASING D	DIAMETER:		
DATE:	5/21/02 and 5/	22/02					WELL N	MATERIAL:		
WEATHER:							TOC E	LEVATION:		
TOTAL DEPTH OF CASI	NG (BTOC)	30,0	10	FEET	CALCULATED (feet of water * c			5,17	gallons	
DEPTH TO GROUNDWA	TER (BTOC)	19,8	<u> </u>	FEET	•		+00 # OI V	+ Of volumes)		
FEET OF WATER IN WE	LL				FREE PRODUCT PURGE METHOD			·		
MEASUREMENT METH	OD			TAPE & PASTE	ELEC	CTRONIC SOU	INDER	OTHER		
		•		FIELD MEASUR	EMENTS					
,						ORP	DO	COMMENTS		
CALLONE DEMOVED	TIME	рH	ТЕМР	CONDUCTIVITY (µMHOS/CM)	TDS (g/L)	(mV)	(mg/l)	(odor, color,)		
GALLONS REMOVED		Les V	18.48	1.13.2	10.878	3005	\$0.96			
U(ah)	920	. '.	18.20		10.07	236.0	4,29	1204.		
7-		648	15.20	10450	10. F7 C	1970	y cos	1001		
5.3						<u> </u>	+			
	-			· · · · · · · · · · · · · · · · · · ·		 				
,	- 					 		· · · · · · · · · · · · · · · · · · ·		
	-				· · · · ·					
· · · · · · · · · · · · · · · · · · ·	-					<u> </u>			 	
					1					
DEPTH TO GROUNDWA	ATER WHEN 8)% RECOV	/ERED	25.94						
	•				10 80	LIONS	١			
ACTUAL DEPTH TO GR	OUNDWATER	BEFORE	SAMPLING	P(BIOC)	120~	LIDEO	l			
SAMPLING METHOD				· · · · · · · · · · · · · · · · · · ·						
CONTAINERS / PRESER	RVATIVE	/	/							
	• · · · · · · · ·	- 40	ML				LITER			
		,	7				/ 1			
		ОТ	HER	-			THER			
ANALYSES:										
	TEHd, TEHn	o (8015m ·	with silica s	gel cleanup)						
	TVHg, BTEX									
	CO2, FE2, M					<u> </u>				
	N-NH3, N-N				*					
			_							
									-	
MISC FIELD OBSERVA	TION:							·		
THICC LICED ORDER(ALL										
										
i					· · · · · · · · · · · · · · · · · · ·					

WELL SAMPLING FORM

PROJECT NAME:	327 34th Stre									_
JOB NO.	1039.008							WELL NO :		2
SAMPLED BY:	E Silverman					WELI		DIAMETER:		
DATE:	5/21/02 and 5	5/22/02	<u> </u>					MATERIAL:		
WEATHER:							TOCE	LEVATION:	, M.	
TOTAL DEPTH OF CASIN	NG (BTOC)	32.	7 4	FEET	CALCULATED	PURGE VOLU	ME	N.		gallons
TOTAL DELTA OF ORIGIN	(2.00)				(feet of water * c			olumes)		
DEPTH TO GROUNDWA	TER (BTOC)	71.10	i	FEET	(,		
	` ,				FREE PRODUC	Т				
FEET OF WATER IN WEI	LL ·			FEET	4					÷
					PURGE METHO	DD				
	•			•						
MEASUREMENT METHO	QC			TAPE & PASTE	ELEC	CTRONIC SOU	NDER		OTHER	
#		•		FIELD MEASUR	EMENTS		•			
		•		CONDUCTIVITY		ORP	DO	CO	MMENTS	
GALLONS REMOVED	TIME	рН	ТЕМР	(µMHOS/CM)	TDS (g/L)	(mV)	(mg/l)		r, color,)	
0	1245	569	18/2	392	0.147	96.1	13.88	4630		
1	125/	6.38	18.62	483	0.362	-2,5	3,34	257		
3	1255	1,40	8.00		0.337	-1x3	3.45	595.0	 	
5.5	1305	70.43	18.64	534	0.464	-27.2	13.11	6210	 	
		-		***	-				 	
	ļ			****.	•			1	 -	
								 		
			<u> </u>	2 - 40	<u> </u>			<u> </u>	 -	
DEPTH TO GROUNDWA	TER WHEN 8	80% RECOV	VERED				•			Salat 1
DEI III TO GROONDWII		, 0,01 E00	LICED		······································			·		
ACTUAL DEPTH TO GRO	OUNDWATE	R BEFORE	SAMPLING	G (BTOC)						
				•						
SAMPLING METHOD										
	-						,			
CONTAINERS / PRESER	VATIVE			_						•
		40	ML			L	ITER			•
			, .							
•				_				<u> </u>		
		ОТ	HER			О	THER			
ANALYSES:										'
•	TEHd, TEH			gel cleanup)						
	TVHg, BTE		(020)	•	•					
	CO2, FE2, M N-NH3, N-N							· · · · · · · · · · · · · · · · · · ·		
•	N-NH3, N-N	03, 0-204		·						
		-								
MISC FIELD OBSERVAT	CION:								•	
MISC FIELD OBSERVAT	1011.		·							
·										
										
							··	,		

PROJECT NAME:	327 34th Str								la. a	
JOB NO.	1039.008					WEI I	CACDIC	WELL NO.: _	-	
SAMPLED BY:	E Silverman					WELL		DIAMETER: _		
DATE:	5/21/02 and	5/22/02				•		MATERIAL: _ :LEVATION:		·
WEATHER:					<u> </u>		TOCE	LEVATION.		
				•	•			100		
TOTAL DEPTH OF CASI	NG (BTOC)	31.95	<u> </u>	FEET	CALCULATED (feet of water * c			5,26		gallons
DEPTH TO GROUNDWA	ATER (BTOC)	21,2	<u>(</u>	FEET	FREE PRODUC		Non			
FEET OF WATER IN WE	T T	10.7	r,	FEET	FREE FRODUC	1 .	<u> 1007 (</u>			
FEET OF WATER IN WE		1017			ГURGE METHO	DD _.		·	·	
MEASUREMENT METH	IOD			TAPE & PASTE	ELEC	TRONIC SOU	NDER		OTHER	
.	1 . 1	fall.		FIELD MEASUR	EMENTS				**************************************	
}				CONDUCTIVITY		ORP	. DO	CON	MENTS	•
GALLONS REMOVED	TIME	pН	TEMP	(µMHOS/CM)	TDS (g/L)	(mV)	(mg/l)	~~~	, color,)	
O(dh)	1 044	6.30	18.20	441.0	0.330	SH. K	300	-56V_	<u> </u>	
O dh	1150	6.62	17.45	677.0	0.504	108.2	1.01	785_]	
3	1154	6.69	17.99	693.0	0.520	30.2	3.45	(XX)_	Strong	s oder
5.5	1159	6.64	18.05	7300	0.547	25.3	292	841.0	<u> </u>	,
		1								
						<u> </u>		_	<u> </u>	
								_	<u> </u>	
				<u></u>				<u> </u>		
DEPTH TO GROUNDWA	ATER WHEN	80% RECOV	ERED	_23.35	· 			·		
ACTUAL DEPTH TO GF				C (DTOC)	22,99	(17)	ج)			
ACTUAL DEPTH TO GE	COUNDWATE	K DEFORE	SAMPLING	J (ВТОС)		- 4			 	
SAMPLING METHOD	·									
GOVERNODO (PREGET	n s r a mei ren		/	* •			/			
CONTAINERS / PRESEI	RVAIIVE	40	ML	-						
		#0	IVII.			•	ALEK			
		,	/							
· · · · · · · · · · · · · · · · · · ·		OT.	HER				THER			
ANALYSES:		01.	IILK			J				
MINETUES.	TEHd. TEH	mo (8015m v	with silica s	el cleanum)	•				•	
		X, MTBE (8		59. 5152110 p/				_		
	CO2, FE2, N		,							
		NO3, O-PO4				_				
										·
MISC FIELD OBSERVA	TION:	Str	274	HC octor				_		
•		Sh	est.							<u>.%</u>
:										
•										

PROJECT NAME:	327 34th Str		<u> </u>					nuci I Mo	Mar 1 - C	
JOB NO:	1039.00		·····			13/77 1		·	mw-	
SAMPLED BY:	E Silverman					WELI		_		
DATE:	5/21/02 and	5/22/02						MATERIAL: _		 .
WEATHER:							TOCE	LEVATION: _		
TOTAL DEPTH OF CASI	NG (BTOC)	27.	42	FEET	CALCULATED			4,33		gallons
.				•	(feet of water * c	asing dia ² * .04	08 * # of Vo	olumes)	·	
DEPTH TO GROUNDWA	ATER (BTOC)	18.5	7	FEET	FREE PRODUC	т				
FEET OF WATER IN WE	LL	<u>8.85</u>	5	FEET					• .	
•					PURGE METHO	DD .				
MEASUREMENT METH	OD			TAPE & PASTE	ELEC	TRONIC SOU	NDER	•	OTHER	
~				FIELD MEASUR	EMENTS	100			e in Eil	
· · · · · · · · · · · · · · · · · · ·				CONDUCTIVITY		ORP	DO		MENTS	
GALLONS REMOVED		pН	TEMP	(µMHOS/CM)	TDS (g/L)	(mV)	(mg/l)	Codor	, color,)	
Q(db)_	1345	G. 32	1647	761.0	0.562	Illet	1.65	8040	}	
	1344	6.34	18472	755.0	0.509	582	13 77	XCOL-C	-	
	1356	44	18.18	750-0	0.312	50.4	7 70	827.0	} -	
	1325	2.59	18400	1410	0.55	47.2	C.08	0-110	 	
								<u> </u>		
			····	1			 			
	-			*	- 				•	
DEPTH TO GROUNDWA	ATER WHEN	80% RECOV	/ERED	20.34	2121		()4	2 1		
ACTUAL DEPTH TO GF	ROUNDWATE	R BEFORE	SAMPLING	G (BTOC)	21.20		(14.	50)		
SAMPLING METHOD			·		·				•	
CONTAINERS / PRESE	RVATIVE									
		40	ML			. I	ITER			
•			/				. / .			
				_			THER			
1214 (1/GEO		. 01	HER			·	THEK			
ANALYSES:	TEUA TEU	Imo (8015m	with ailian a	ral classius)					•	
·		EX, MTBE (8		ger cicanup)		-				
	CO2, FE2, 1		1020)						'''	
		NO3, O-PO4					-			
	2, 1,1,2,7, 1,1	,		_	· · · · ·					
MISC FIELD OBSERVA	TION:									
						_				
	·									
-										

PROJECT NAME:	327 34th Stre	•								
JOB NO.	1039.008			_				_	mw-	
SAMPLED BY:	E Silverman					WELI		_		
DATE:	5/21/02 and :	5/22/02						MATERIAL: _		
WEATHER:							TOC E	LEVATION: _		
TOTAL DEPTH OF CASI	NG (RTOC)	26.4	15	FEET	CALCULATED	PURGE VOLU	ME.	1.104		gallons
TOTAL DEFIN OF CASI	NG (BTOC)		<u>, </u>	1 LL1	(feet of water * 0					
DEPTH TO GROUNDWA	TER (RTOC)	_23.1	^	FEET	(rect of water					
	TER (B.CC)				FREE PRODUC	Т				
FEET OF WATER IN WE	11.	3,3	5 ·	FEET						
TEBLOT WITTER IN WE	~~		***	,•	PURGE METHO	OD	•		•	_
	•									
MEASUREMENT METH	ÓD			TAPE & PASTE	ELEC	CTRONIC SOU	NDER		OTHER	
				FIELD MEASUR	EMENTS					
.				CONDUCTIVITY	-	ORP	DO	Sp.C. COI	MMFNTS	
GALLONS REMOVED	TIME	pН	ТЕМР	(μMHOS/CM)	TDS (g/L)	(mV)	(mg/l)	ap Codo	r, color,)	
O dh	T	6.30	18.20	441.0	0.334	354.y	3-06		1	
	1644	1000	1				1 × × ×		1	
\ <u>\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \</u>					-				1	
,	†								1	
									1	
1										
	<u> </u>				_		•			
DEPTH TO GROUNDWA	TER WHEN 8	30% RECOV	/ERED	23,77						
					0.4					
ACTUAL DEPTH TO GR	OUNDWATE	R BEFORE	SAMPLING	(BTOC)	26	.24	1000			
SAMPLING METHOD			•	<u> </u>						
			/				/			
CONTAINERS / PRESER	LVATIVE			-						
		40	ML			1.	ITER			
			/				1			•
•							THER			
ANALWOEG		O11	HER			v	IILK			
ANALYSES:	TEHd, TEH	ma (9015m)	rith cilian c	rat alannum)						
	TVHg, BTE			ger cicattup)						
	CO2, FE2, N		020)							
	N-NH3, N-N									
	11-11 11-1, 11-1	.00, 0-1 04		 ·						
MISC FIELD OBSERVA	TION:	Als.	ham	o very D	lowly,	12/1/10	ild.	alus C	2294	<u> </u>
- : :::::::::::::::::::::::::::::::::::			7	7	77	1 0		7		~ <i>C J \</i>

PROJECT NAME:	327 34th Street, Oaklan	d			•		· .
JOB NO.	1039.008			-	1	WELL NO.: _ Mu-	6
SAMPLED BY:	E Silverman			WELL		LAMETER:	
DATE:	5/21/02 and 5/22/02	5/23/02		-		IATERIAL.	<u> </u>
WEATHER:	aunna			-		EVATION:	
WEITTIE	3441113						
			0.1.6111.6000	ntines vert		E 20 ·	
TOTAL DEPTH OF CAS	ING (BIOC) 781	50 FEET		PURGE VOLUI 24. * 2 Puring dia	_	<u> </u>	gallons
DEPTH TO GROUNDW	ATER (BTOC) 174.	.68 FEET	Alect of Water	casing aid		iditiçs)	
i BELLIN TO GROOM D			FREE PRODUC	er			***
FEET OF WATER IN W	ELL	82feet					100
•	-		PURGE METH	OD	·		
	•		•				
MEASUREMENT METI	HOD	TAPE & PAST	re elec	CTRONIC SOUR	NDER	OTHER	
		FIELD MEAS	HDEMENTS				
						~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	•
		CONDUCTIV		ORP	DO)	COMMENTS	and the second s
GALLONS REMOVED		TEMP (μMHOS/C)		(mV) -173.4	(mg/l)	(oddr, color,	.)
Oldh)	1008 6.6	17.90 637.0		-10019	0.14	771	
	1013 110.6	1820 657.	0.444	1177	A 7		
4	1015 465	185 6710	0,504	1150	1 1 1	701	·
<u> </u>	1020 6-126	1809 1081.U	0.510	-118.6	11.45	789	
							
				 			
				+			
				<u></u>	L		
DEDTH TO CROUNDW	ATED WHEN SOM DECK	OVERED 19.84				·	
DEPTH TO GROUNDW	ATER WHEN 80% RECC	VERED 19,89					
ACTUAL DEPTH TO G	ON MINWATED DÉENDE	E SAMBI DIG (PTOC)					•
ACTUAL DEPTH TO G	ROUNDWATER BEFORE	SAMITLING (BTOC)					
SAMPLING METHOD							
SAMPLING METHOD							
CONTAINERS / PRESE	RVATIVE	/					₹,
		0 ML			ITER		
•	-	- /- 11-2	4			1 N	
	•	/					
		THER		O	THER		
ANALYSES:							
TUTELIOLO.	TEHd TEHmo (8015m	with silica gel cleanup)					•
	TVHg, BTEX, MTBE						·
	CO2, FE2, Mn, SO2-	(0020)				<u> </u>	
•	N-NH3, N-NO3, O-PO	4					
I					•		
MISC FIELD OBSERVA	TION:					•	<u> </u>
•							
					٠,		

PROJECT NAME:	327 34th Stre	eet, Oakland			·					
JOB NO.	1039.008	}						WELL NO.: _	mw-7	
SAMPLED BY:	E Silverman					WELI	. CASING I	DIAMETER: _	<u> </u>	
DATE	5/21/02 and	5/22/02					WELL N	MATERIAL: _		
WEATHER:		•			· · · · · · · · · · · · · · · · · · ·		TOC E	LEVATION: _		
TOTAL DEPTH OF CASI	NG (RTOC)	34.4	5	FEET	CALCULATED	PURGE VOLU	ME	9.53		gallons
TOTAL DEL TITOL CAU	(10 (100)				(feet of water * c				<u></u>	
DEPTH TO GROUNDWA	TER (BTOC)	15.1	8	FEET						
!					FREE PRODUC	Т				
FEET OF WATER IN WE	LL	19,4	7	FEET						
•	4				PURGE METHO	OD				
.				•						
MEASUREMENT METH	OD			TAPE & PASTE	ELEC	CTRONIC SOU	NDER		OTHER	
			•	EIDI DAKE LOUD	DACENIDO					
				FIELD MEASUR	EMEN 15					
			_	CONDUCTIVITY		ORP	DO		MMENTS	
GALLONS REMOVED		pH	TEMP	(μMHOS/CM)	TDS (g/L)	(mV)	(mg/l)	Sp Coder	color,)	
() (dh)	\$50_	1.57	18/2	729.0	0.538	108.4	1.03	7-		
<u> </u>	343	130	18/24	728	07546	177	1.59	0 30		
8	845	F.DZ	14.70	747	0,727	149	7 47	842		·
10	849	(0.44	18 ·X	749	0,794	177_	6,06	900		
	 	-		· ·	<u> </u>		 	·	 	
							<u> </u>		 	
			-		-				t	
							1	l		
DEPTH TO GROUNDWA	ATER WHEN	80% RECOV	/ERED	19.07			-			
					100	<u> </u>	120			
ACTUAL DEPTH TO GR	OUNDWATE	R BEFORE	SAMPLING	(BTOC)	Ed 18.	14 (720)		·	
SAMPLING METHOD				<u></u>						
			/		•		/			
CONTAINERS / PRESER	RVATIVE			-						
		40	ML			L	ITER		-	
			/							
ì			HER	-			THER			
ANIAT MOCO.		OI	nek			v	IIIDK			
ANALYSES:	TEHd, TEH		with cilica a	rel cleanum)					•	
	TVHg, BTE			ger eleanap)						
	CO2, FE2, N									
	N-NH3, N-N						·			
	,		;							
· ·	•									
MISC FIELD OBSERVA	TION:				<u> </u>					
										<u></u>
1										
				· ————————————————————————————————————						
)										

APPENDIX C
Analytical Test Reports/Chain-of-Custody Documents



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 9471O, Phone (510) 486-0900

ANALYTICAL REPORT

Prepared for:

Subsurface Consultants 1000 Broadway Suite 200 Oakland, CA 94607

Date: 17-DEC-01

Lab Job Number: 155589 Project ID: 1309.008

Location: 327 34th St.

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signatures. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis.

Reviewed by: Project Manager

Reviewed by:

Operations Manager

This package may be reproduced only in its entirety.

Page 1 of <u>57</u>

CA ELAP # 1459



Laboratory Number: 155589

Receipt Date: 11/21/01

Client: Subsurface Consultants, Inc.

Project Name: 327 34th St.

CASE NARRATIVE

This hardcopy data package contains sample results and batch QC results for seven water samples received from the above referenced project. The samples were received cold and intact.

Total Volatile Hydrocarbons/BTXE:

No analytical problems were encountered.

Total Extractable Hydrocarbons:

No analytical problems were encountered.

Metals:

No analytical problems were encountered.

General Chemistry:

No analytical problems were encountered.

RSK-175: Microseeps in Pittsburgh, Pennsylvania performed the analysis. Please see the Microseeps case narrative.

155589

1000 Broadway, Suite 200 Oakland, CA 94607 510-268-0461 FAX: 510-268-0137 2011 Soscol Ave., Suite 5, Napa, CA 94559 707-257-6993 FAX: 707-257-6995

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Gasoline by GC/FID CA LUFT

ab #: 155589

Client: Subsurface Consultants

Water

1309.008

Location: Prep: Analysis: 327 34th St.

rep: EPA 5030B nalysis: 8015B(M)

Received: 11/21/01

Jnits: ug/L

Field ID:

Type:

Project#:

Matrix:

MW-1

MN-I

SAMPLE

155589-001

Batch#:

68234

Sampled:

11/20/01

ab ID: iln Fac:

1.000

Analyzed: 11/26/01

Analyte	Result	RLi	
Gasoline C7-C12	ND	50	·

Surrogate	%REC	Limits			
Trifluorotoluene (FID)	104	59-135	•		
Bromofluorobenzene (FID)	117	60-140	 		

Field ID:

ype:

MW-2

SAMPLE

Batch#:

68296

Sampled: Analyzed: 11/20/01 11/28/01

155589-002

ab ID: Diln Fac:

50.00

	Result	RL	
Gasoline C7-C12	83,000	2,500	

Surrogate	*REC	Limits	
Trifluorotoluene (FID)	101	59-135	
Bromofluorobenzene (FID)	88	60-140	

Field ID:

'ype:

MW-3

155589-003

SAMPLE

Batch#:

68296

Sampled:

11/20/01

Analyzed:

11/28/01

Lab ID: 155589 Diln Fac: 100.0

Analyte	Result		
Gasoline C7-C12	100,000	5,000	· · · · · · · · · · · · · · · · · · ·

Surrogate		C Limits		
Trifluorotoluene (FID)	101	59-135	_	·
Bromofluorobenzene (FID)	91	60-140	<u> </u>	

ND= Not Detected

RL= Reporting Limit

Page 1 of 3

GC07 TVH 'A' Data File RTX 502

Sample #: C1

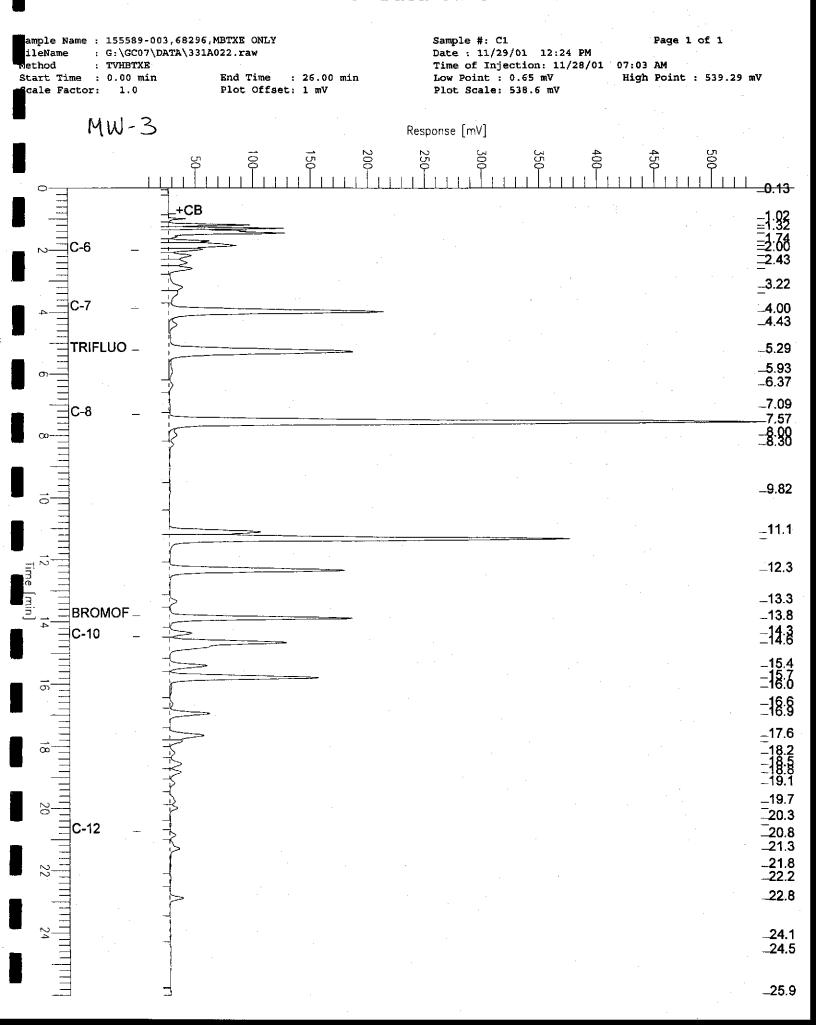
Date : 11/29/01 12:23 PM

Sample Name : 155589-002,68296,MBTXE ONLY

Page 1 of 1

: G:\GC07\DATA\331A023.raw FileName Time of Injection: 11/28/01 07:36 AM Method : TVHBTXE High Point : 912.01 mV Start Time : 0.00 min End Time : 26.00 min Low Point : -18.18 mV Plot Scale: 930.2 mV Plot Offset: -18 mV Scale Factor: MW-2 Response [mV] +CB _3.40 _4.00 $_{-5.30}$ TRIFLUO _ _5.94 _6.40 -7.58 -12.3BROMOF - $_{-13.8}$ C-10 C-12 22 24 _22.8 _23.6 _24.1 _24.5 _25.9

GC07 TVH 'A' Data File RTX 502





Gasoline by GC/FID CA LUFT

Lab #: 155589

Client: Subsurface Consultants 1309.008

Project#: Matrix: Water

Units: ug/L

Field ID:

MW-4

Type:

SAMPLE

Lab ID:

155589-004

Diln Fac:

1.000

Batch#:

Sampled:

11/20/01

68234

Analyzed:

Location:

Received:

Prep: Analysis:

11/26/01

327 34th St.

EPA 5030B

8015B(M)

11/21/01

Analyte	Result	RL
Gasoline C7-C12	96	50

Surrogate	%REC	Limits	
Trifluorotoluene (FID)	103	59-135	
Bromofluorobenzene (FID)	105	60-140	

Field ID:

MW - 5

Type:

SAMPLE

Lab ID:

155589-005

Diln Fac:

1.000

Batch#:

Sampled:

11/20/01

68234

Analyzed:

11/26/01

Result RL Analyte 50 140 Gasoline C7-C12

•			· · · · · · · · · · · · · · · · · · ·
Surrogate	*REC	Limite	
Trifluorotoluene (FID)	100	59-135	
Bromofluorobenzene (FID)	105	60-140	

Field ID:

Type:

MW - 6

SAMPLE

Batch#:

68234

Sampled:

155589-006 Analyzed: 11/21/01 11/26/01

Lab ID: Diln Fac: 1.000

Analyte	Result		
Gasoline C7-C12	ND	50	

Surrogate	%REC	Limits
Trifluorotoluene (FID)	102	59-135
Bromofluorobenzene (FID)	112	60-140

ND= Not Detected RL= Reporting Limit Page 2 of 3

Chromatogram

mple Name : 155589-004,68234 lleName : G:\GC05\DATA\3300 Page 1 of 1 Sample #: a1 : G:\GC05\DATA\330G011.raw Date: 11/26/01 06:31 PM Time of Injection: 11/26/01 06:00 PM : TVHBTXE Method Low Point: -34.65 mV Plot Scale: 1006.9 mV High Point : 972.23 mV End Time : 31.00 min Start Time : 0.00 min Plot Offset: -35 mV cale Factor: MW-4 Response [mV] 1.02 1:6384 2.24 C-6 2.87 _3.58 _4.03 _4.48 5.01 C-7 5.55 5.93 6.37 TRIFLUO _ _6.75 .8.14 C-8 9.72 10.36 11.92 12.87 14.48 14.89 16.73 18.31 BROMOF _ ___19.12 19.92 C-10 20.41 21.56 22.15 23.39 23.99 26.08 27.59

Chromatogram

Sample Name : 155589-005,68234 Page 1 of 1 Sample #: al Date: 11/26/01 07:15 PM : G:\GC05\DATA\330G012.raw FileName Time of Injection: 11/26/01 06:43 PM : TVHBTXE Method Low Point : 10.85 mV End Time High Point : 66.65 mV : 31.00 min Start Time : 0.00 min Plot Scale: 55.8 mV Scale Factor: Plot Offset: 11 mV MW-5 Response [mV] 0.99 2.24 C-7 _ 5.03 6.38 9.71 10.36 _11.64 12.78 14.88 15.19 ___16.73 17.47 18.34 BROMOF _ 19.12 19.95 C-10 20.40 21.57 22.14 24.60 26.09 27.59



Gasoline by GC/FID CA LUFT

ab #: 155589

Client: Subsurface Consultants Location: Prep:

327 34th St. EPA 5030B

Analysis: 1309.008

8015B(M)

Matrix: Water Units: ug/L

Received:

11/21/01

ield ID:

Project#:

MW - 7

Batch#:

68234

Type:

SAMPLE

Sampled:

11/21/01

ab ID:

155589-007

Analyzed:

11/26/01

iln Fac:

1.000

Result RL Analyte Gasoline C7-C12

%REC Limits Surrogate Trifluorotoluene (FID) 59-135 102 Bromofluorobenzene (FID) 109 60-140

Type:

BLANK

Batch#:

68234

Lab ID:

QC163186

Analyzed:

11/26/01

iln Fac:

1.000

Analyte	Result	RL	
Gasoline C7-C12	ND	50	

Surrogate	*REC	Limits
Trifluorotoluene (FID)	99	59-135
Bromofluorobenzene (FID)	100	60-140

Type:

BLANK

Batch#:

68296

Lab ID:

QC163416

Analyzed:

11/28/01

Diln Fac:

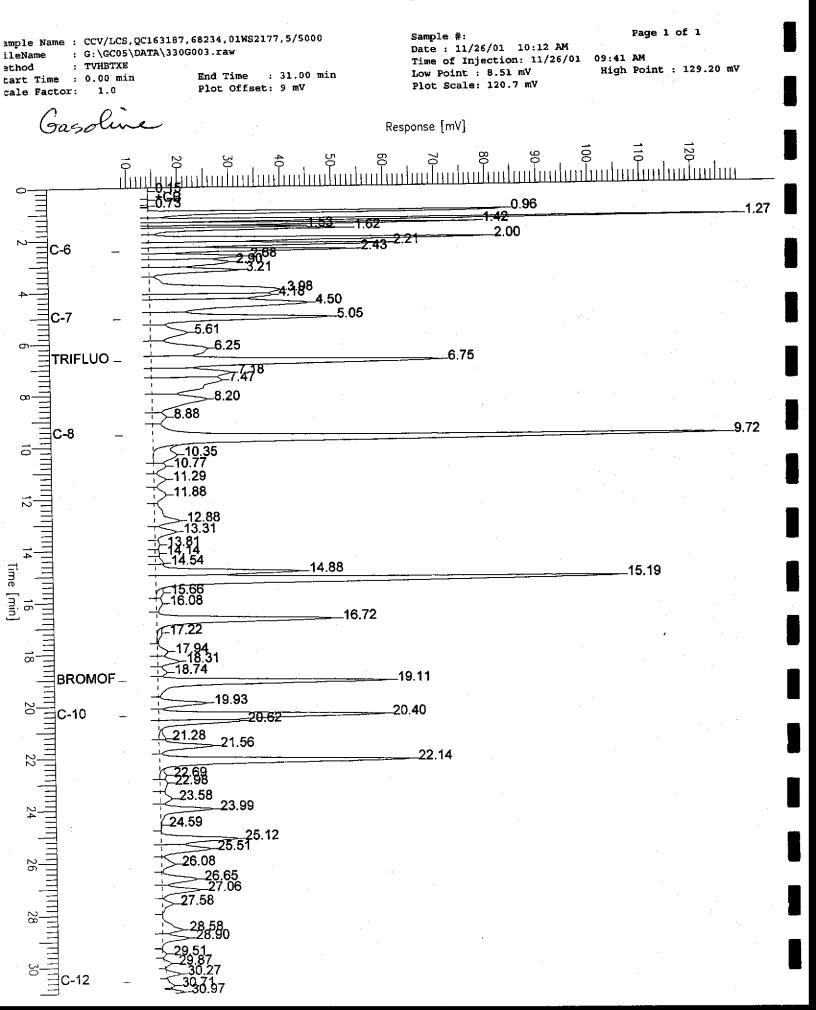
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Analyte	Result	RL	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
Gasoline C7-C12	ND	50	
-	·	· · · · · · · · · · · · · · · · · · ·	

Surrogate	*RE	C Limits	
Trifluorotoluene (FID)	94	59-135	
Bromofluorobenzene (FID)	87	60-140	

ND= Not Detected RL= Reporting Limit Page 3 of 3

Chromatogram





Benzene, Toluene, Ethylbenzene, Xylenes 327 34th St. EPA 5030B Lab #: 155589 Location: Client: Subsurface Consultants Prep: Analysis: Received: EPA 8021B Project#: 1309.008 11/21/01 Matrix: Water Units: uq/L

Field ID:

Diln Fac:

Туре: Ļāb ID: MW-1 SAMPLE

155589-001 1.000

Batch#:

Sampled: Analyzed:

68234 11/20/01

11/26/01

Analyte	Result	RL	
MTBE	ND	2.0	
Benzene	ND	0.50	
Toluene	1.3	0.50	
Ethylbenzene	ND	0.50	
m,p-Xylenes	1.7	0.50	
o-Xylene	0.81	0.50	

33440 6 6 6 6 <u>्रधानम्बद्धाः ।</u> Trifluorotoluene (PID) 104 56-142 Bromofluorobenzene (PID)

Field ID:

Type: Lab ID:

MW-2 SAMPLE 155589-002

Batch#: Sampled: Analyzed:

68323 11/20/01 11/29/01

Diln Fac: 100.0

Analyte	Regult	RL		
MTBE	2,800	200		
Benzene	5,900	50		1
Toluene	15,000	50		
Ethylbenzene	2,300	50		
m,p-Xylenes	9,700	50	÷	
o-Xylene	4,400	50	** ***	

Surrogate	%RI	C Limits	
Trifluorotoluene (PID)	96	56-142	
Bromofluorobenzene (PID)	93	55-149	

Field ID: Type:

MW-3

SAMPLE 155589-003 Batch#:

68296

Sampled: Analyzed: 11/20/01 11/28/01

Lâb ID: Diln Fac:

100.0

Analyte	Result	RI		
MTBE	4,000	200		
Benzene	6,300	50		
Toluene	16,000	50		
Ethylbenzene	2,400	50	*	•
m,p-Xylenes	10,000	50		
o-Xylene	4,900	50		

Surrogaze		Kim te	******
Trifluorotoluene (PID)	96	56-142	
Bromofluorobenzene (PID)	89	55-149	

ND= Not Detected RL= Reporting Limit Page 1 of 4



Benzene, Toluene, Ethylbenzene, Xylenes 327 34th St. EPA 5030B Lab #: Client: 155589 Location: Prep: Analysis: Received: Subsurface Consultants EPA 8021B 11/21/01 Project#: 1309.008 Water Units: uq/L

Field ID:

MW - 4 SAMPLE

Type: Lab ID: Diln Fac:

155589-004

Batch#:

Sampled: Analyzed: 68323 11/20/01 11/29/01

5.000

8	Δnalvte	Result	:16:
۴	MTBE	2,500	10
1	Benzene	ND	2.5
1	Toluene	4.0	2.5
1	Ethylbenzene	ND	2.5
1	m,p-Xylenes	3.7	2.5
1	o-Xvlene	ND ·	2.5

Surrogate	#RE	Limits
Trifluorotoluene (PID)	92	56-142
Bromofluorobenzene (PID)	88	55 -1 49

Field ID:

Туре:

MW-5 SAMPLE 155589-005

Lab ID: Diln Fac: 1.000 Batch#: Sampled: Analyzed: 68234 11/20/01 11/26/01

Analyte	Result	RL
MTBE	10	2.0
Benzene	0.83	0.50
Toluene	12	0.50
Ethylbenzene	1.2	0.50
m,p-Xylenes	7.2	0.50
o-Xylene	<u>3.4</u>	0.50

Surroga	e	*REC	Limits
Trifluorotoluene	(PID)	97	56-142
Bromofluorobenzene	e (PID)	108	55-149

Field ID:

MW-6

SAMPLE Type: Lab ID: 155589-006

Diln Fac:

1.000

Batch#:

68296

11/21/01 11/28/01

Sampled: Analyzed:

Analyte	Result		
MTBE	450	2.0	
Benzene	ND	0.50	
Toluene	ND	0.50	
Ethylbenzene	ND	0.50	
m,p-Xylenes	ND	0.50	
o-Xylene	ND	0.50	

Surrogate	a.P	CC Limits	
Trifluorotoluene (PID)	94	56-142	
Bromofluorobenzene (PID)	90	<u> 55-149</u>	

ND= Not Detected RL= Reporting Limit Page 2 of 4



Benzene, Toluene, Ethylbenzene, Xylenes 327 34th St. EPA 5030B Lab #: Client: Location: 155589 Prep: Analysis: Subsurface Consultants EPA 8021B 11/21/01 Project#: 1309.008 Received: Matrix: Water Units: uq/L

ield ID:

Type: ab ID: MW-7 SAMPLE 155589-007 1.000

Batch#:

Sampled: Analyzed:

68323

11/21/01 11/29/01

iln Fac:

Analyte	Result	1;34
MTBE	ND	2.0
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	·ND	0.50
m,p-Xylenes	0.59	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits	
Trifluorotoluene (PID)	90	56-142	
Bromofluorobenzene (PID)	86	55-149	

Type: ab ID: BLANK OC163186 1.000 Batch#: Analyzed: 68234 11/26/01

iln Fac:

Analyte	Result	RL
MTBE	ND	2.0
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
Lo-Xvlene	ND	0.50

Surrogate	£RE(
Trifluorotoluene (PID)	99	56-142	
Bromofluorobenzene (PID)	102	55-149	

Type: āb ID: BLANK QC163416 Batch#: Analyzed: 68296 11/28/01

iln Fac:

1.000

Analyte	Result	RL	
MTBE	ND	2.0	
Benzene	ND	0.50	
Toluene	ND	0.50	
Ethylbenzene	ND	0.50	
m,p-Xylenes	ND	0.50	
o-Xvlene	ND	0.50	

Surrogate	¥R)	C Limits	
Trifluorotoluene (PID)	89	56-142	•
Bromofluorobenzene (PID)	80	55-149	

D= Not Detected RL= Reporting Limit Page 3 of 4



	Benzene, Toluene,	Ethylbenzene,	Xylenes	
Lab #: Client:	155589 Subsurface Consultants	Location: Prep:	327 34th St. EPA 5030B	
Project#:	1309.008	Analysis:	EPA 8021B	<u> </u>
Matrix:	Water	Received:	11/21/01	
Units:	ug/L			

Type: Lab ID: Diln Fac: BLANK QC163524 1.000 Batch#: Analyzed: 68323 11/29/01

		RL
Analyte	Result ND	3 0
MTBE Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate			
Trifluorotoluene (PID)	85	56-142	
Bromofluorobenzene (PID)	75	55-149	



	Gasoline l	y GC/FID CA LU	IFT
Lab #:	155589	Location:	327 34th St.
Client:	Subsurface Consultants	Prep:	EPA 5030B
Project#:	1309.008	Analysis:	8015B(M)
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC163187	Batch#:	68234
Matrix:	Water	Analyzed:	11/26/01

Analyte	Spiked	Result		REC Limits	
Gasoline C7-C12	2,000	2,050	10	3 73-121	

Surrogat	6	%REC	Limits
	FID)	112	59-135
Bromofluorobenzene	(FID)	109	60-140



	Gasoline 1	oy GC/FIB CA LU	jet
Lab #:	155589	Location:	327 34th St.
Client:	Subsurface Consultants	Prep:	EPA 5030B
Project#:	1309.008	Analysis:	8015B(M)
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC163413	Batch#:	68296
Matrix:	Water	Analyzed:	11/28/01
Units:	ug/L	· -	

Analyte	5p1Kea	Result			
Gasoline C7-C12	2,000	1,803	90	73-121	
	· · · · · · · · · · · · · · · · · · ·				4
Surrogate	%RRC Limits				

Surrogate	%RF	C Limits	
Trifluorotoluene (FID)	118	59-135	
Bromofluorobenzene (FID)	88	60-140	



	Benzene, Toluene,	Ethylbenzene,	Xylenes
ab #:	155589	Location:	327 34th St.
lient:	Subsurface Consultants	Prep:	EPA 5030B
roject#:	1309.008	Analysis:	EPA 8021B
vpe:	LCS	Diln Fac:	1.000
ype: ab ID:	OC163523	Batch#:	68323
atrix:	Water	Analyzed:	11/29/01
nits:	ug/L		

Analyte	Spiked	Result	\$REC	Limita
MTBE	20.00	20.42	102	51-125
Benzene	20.00	16.61	83	67-117
oluene	20.00	16.85	84	69-117
Ethylbenzene	20.00	16.99	85	68-124
_	40.00	34.60	86	70-125
n,p-Xylenes b-Xylene	20.00	<u> 17.89</u>	89	65-129

Surrogate	9	%REC	Limits		
	PID)	36	56-142		
Bromofluorobenzene	(PID)	76	55-149	 	



	Benzene, Toluene,	Ethylbenzene,	Xylenes
Lab #:	155589	Location:	327 34th St.
Client:	Subsurface Consultants	Prep:	EPA 5030B
Project#:	1309.008	Analysis:	EPA 8021B
Matrix:	Water	Batch#:	68234
Units:	ug/L	Analyzed:	11/26/01
Diln Fac:	1.000	·	

BS

Lab ID:

QC163188

Analyte	Spiked	Result	BREC	Limits	
MTBE	20.00	20.86	104	51-125	
Benzene	20.00	17.19	86	67-117	
Toluene	20.00	17.65	88	69-117	1
Ethylbenzene	20.00	18.08	90	68-124	i
m,p-Xylenes	40.00	37.92	95	70-125	
o-Xylene	20.00	18.68	93	65-129	

58800800	***************************************			***************************************		200
1000000	Surrogat	a	ZKS	. Limite		***
200000000					 	 $\overline{}$
l nr⊸	rifluorotoluene	(PID)	102	56-142		- 1
1 ++	TITUOTOCOTUCIA	(,	* 0 1	20 214		- 27
١ ـ	53 1	/n=n\	300	EE 140	· · · · · · · · · · · · · · · · · · ·	-
ı Bı	romofluorobenzene	⇒ (PID)	109	55-149		 _6

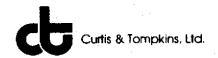
Туре:

BSD

Lab ID:

Analyte	Spiked	Result	€RE(C Limits	RPI	Lin
MTBE	20.00	19.77	99	51-125	5	20
Benzene	20.00	17.50	87	67-117	. 2	20
Toluene	20.00	17.72	89	69-117	0	20
Ethylbenzene	20.00	18.18	91	68-124	1	20
m,p-Xylenes	40.00	37.68	94	70-125	1	20
o-Xylene	20.00	18.69	93	65-129	0	20

Surrogat	te	*REC	Limite		
	(PID)	100	56-142	·	
Bromofluorobenzene	e (PID)	105	55-149		



	Benzene, Toluene,	Ethylbenzene,	Xylenes	
Lab #:	155589	Location:	327 34th St.	
Lab #: Client:	Subsurface Consultants	Prep:	EPA 5030B	
Project#:	1309.008	Analysis:	EPA 8021B	
Matrix:	Water	Batch#:	68296	
Units:	ug/L	Analyzed:	11/28/01	
Diln Fac:	1.000	·		

BS

Lab ID:

QC163414

Analyte	Spiked	Result	%RB(Limite
MTBE	20.00	18.52	93	51-125
Benzene	20.00	17.50	87	67-117
Toluene	20.00	17.77	89	69-117
Ethylbenzene	20.00	17.29	86	68-124
_	40.00	35.23	88	70-125
m,p-Xylenes o-Xylene	20.00	18.56	93	65-129

Surrogate	%REC	Limits	
Trifluorotoluene (PID)	90	56-142	
Bromofluorobenzene (PID)	81	55-149	

vpe:

BSD

Lab ID:

Analyte	Spiked	Result	*REC	inimits	RPD	Lim
MTBE	20.00	17.97	90	51-125	3	20
Benzene	20.00	17.25	86	67-117	1	20
Toluene	20.00	17.26	86	69-117	3	20
Ethylbenzene	20.00	16.81	84	68-124	3	20
m,p-Xylenes	40.00	34.71	87	70-125	1	20
o-Xylene	20.00	18.25	91	65-129	2	20

Surrogate	%REC	Limits		
Trifluorotoluene (PID)	90	56-142		
Bromofluorobenzene (PID)	81	55-149	 <u></u>	



	Gasoline l	y GC/FID CA LU	IFT	
Lab #:	155589	Location:	327 34th St.	
Client:	Subsurface Consultants	Prep:	EPA 5030B	
Project#:	1309.008	Analysis:	8015B(M)	
Field ID:	MW-1	Batch#:	68234	
MSS Lab ID:	155589-001	Sampled:	11/20/01	
Matrix:	Water	Received:	11/21/01	
Units:	ug/L	Analyzed:	11/26/01	
Diln Fac:	1.000			

MS

Lab ID:

QC163279

Analyte	MOD ASSUAL	Spiked	Result	%RE	C Limits
Gasoline C7-C12	49.16	2,000	2,115	103	65-131

Surrogate	%R)	EC Limits	
Trifluorotoluene (FID	114	59-135	
Bromofluorobenzene (F	ID) 115	60-140	 · ·

Type:

MSD

Lab ID:

Analyte	Spiked	Result	\$REC	Limits	RIPID	1,450
Gasoline C7-C12	2,000	2,158	105	65-131	2	20

Surrogate	*REG	: Limita		
Trifluorotoluene (FID)	113	59-135		
Bromofluorobenzene (FID)	117	60-140		·



	Gasoline l	by GC/FID CA LU	FT
Lab #:	155589	Location:	327 34th St.
Client:	Subsurface Consultants	Prep:	EPA 5030B
Project#:	1309.008	Analysis:	8015B(M)
Field ID:	ZZZZZZZZZZ	Batch#:	68296
MSS Lab ID:	155591-002	Sampled:	11/21/01
, Matrix:	Water	Received:	11/21/01
Units:	ug/L	Analyzed:	11/28/01
Diln Fac:	1.000	·	

уре:

MS

Lab ID:

QC163417

	MSS Result		Result	8 RU	C Cimits
Gasoline C7-C12	<20.00	2,000	1,701	85	65-131

Surrogate	%REC	Limits
Trifluorotoluene (FID)	123	59-135
Bromofluorobenzene (FID)	97	60-140

Type:

MSD

Lab ID:

Analyte	Spiked	Result		Limits	RPD	I (lm)
Gasoline C7-C12	2,000	1,762	88	65-131	4	20

Surrogate	%RE	C Limits	
Trifluorotoluene (FID)	124	59-135	
Bromofluorobenzene (FID)	101	60-140	



	Benzene, Toluene,	Ethylbenzene,	Xylenes
Lab #:	155589	Location:	327 34th St.
Client:	Subsurface Consultants	Prep:	EPA 5030B
Project#:	1309.008	Analysis:	EPA 8021B
Field ID:	ZZZZZZZZZZ	Batch#:	68323
MSS Lab ID:	155650-001	Sampled:	11/27/01
Matrix:	Water	Received:	11/27/01
Units:	ug/L	Analyzed:	11/29/01
Diln Fac:	1.000		

MS

Lab ID:

QC163527

Analyte	MSS Result	Spiked	Result	*REC	Limits
MTBE	<0.2100	20.00	23.03	115	33-131
Benzene	<0.04000	20.00	18.84	94	65-123
Toluene	<0.05100	20.00	18.73	94	73-122
Ethylbenzene	<0.04200	20.00	18.32	92	59-137
m,p-Xylenes	<0.04700	40.00	37.17	93	68-132 V
o-Xvlene	<0.04600	20.00	20.15	101	61-140

Surrogate	%RE	C Limits	
Trifluorotoluene (PID)	96	56-142	
Bromofluorobenzene (PID)	95	55-149	

Type:

MSD

Lab ID:

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	20.00	23.65	118	33-131	3	20
Benzene	20.00	18.46	92	65-123	2	20
Toluene	20.00	18.24	91	73-122	3	20
Ethylbenzene	20.00	17.63	88	59-137	4	20
m,p-Xylenes	40.00	36.35	91	68-132	2	20
o-Xylene	20.00	19.66	98	61-140	2	20

Surrogate	*REC	Limits
Trifluorotoluene (PID)	96	56-142
Bromofluorobenzene (PID)	99	55-149



Total Extractable Hydrocarbons

327 34th St. Location: 155589 Lab #: Prep: EPA 3520C Subsurface Consultants **Clie**nt: 8015B(M) 11/21/01 <u>Analysis</u> 1309.008 roject#: Received:

Water atrix: Units: uq/L

Teld ID:

tch#:

MW-1 SAMPLE Type: b ID: 155589-001 ln Fac: 1.000

68270

Sampled: Prepared: Analyzed:

11/20/01 11/26/01 11/28/01 EPA 3630C

Cleanup Method:

Result Analyte ND 50 Diesel C10-C24 300 Notor Oil C24-C36 ND

Surrogate 44-121 lexacosane

Field ID: pe:

MW - 2 SAMPLE 155589-002 5.000

Sampled: Prepared: Analyzed:

Cleanup Method:

11/20/01 11/26/01 11/29/01 EPA 3630C

ab ID: Diln Fac: Batch#:

68270

Resolt Analyte 5,700 L Y 250 Diesel C10-C24 500 Motor Oil C24-C36

%REC Limits Surrogate Hexacosane 102 44-121

eld ID:

pe: Lab ID: Diln Fac: atch#:

MM - 3SAMPLE 155589-003 3,000

Sampled: Prepared: Analyzed:

11/20/01 11/26/01 11/29/01 EPA 3630C Cleanup Method:

68270

Analyte RL. 5,900 L Y 150 Diesel C10-C24 900 Motor Oil C24-C36 ND

Skik(eller) in 455 Surrogate <u>Hexacosane</u>

H= Heavier hydrocarbons contributed to the quantitation L= Lighter hydrocarbons contributed to the quantitation Y= Sample exhibits fuel pattern which does not resemble standard D= Not Detected RL= Reporting Limit Page 1 of 3

Chromatogram

Sample Name : 155589-002sg,68270

: G:\GC13\CHB\333B011.RAW FileName

: BTEH321.MTH Method

Start Time : 0.00 min

Scale Factor:

: 31.90 min End Time

Plot Offset: -17 mV

Sample #: 68270

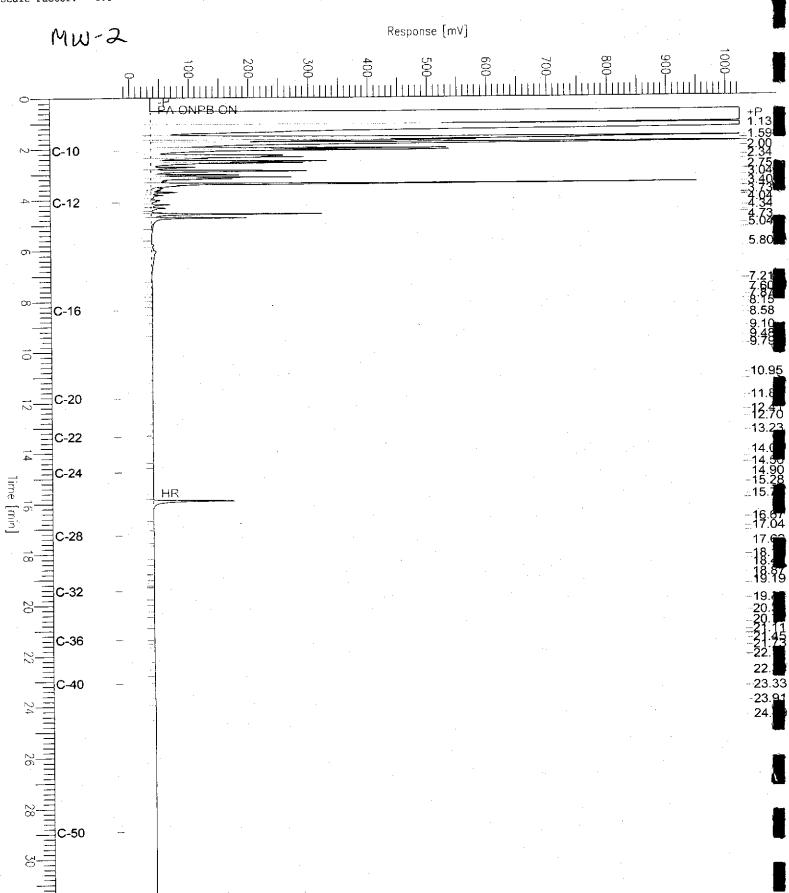
Page 1 of 1

Date: 11/30/2001 08:16 AM
Time of Injection: 11/29/2001 08:19 PM

Low Point : -17.23 mV

High Point : 1024.00 mV

Plot Scale: 1041.2 mV



Chromatogram

ample Name : 155589-003sg,68270

ileName : G:\GC13\CHB\333B009.RAW

: BTEH321.MTH Method Start Time : 0.00 min

cale Factor: 0.0

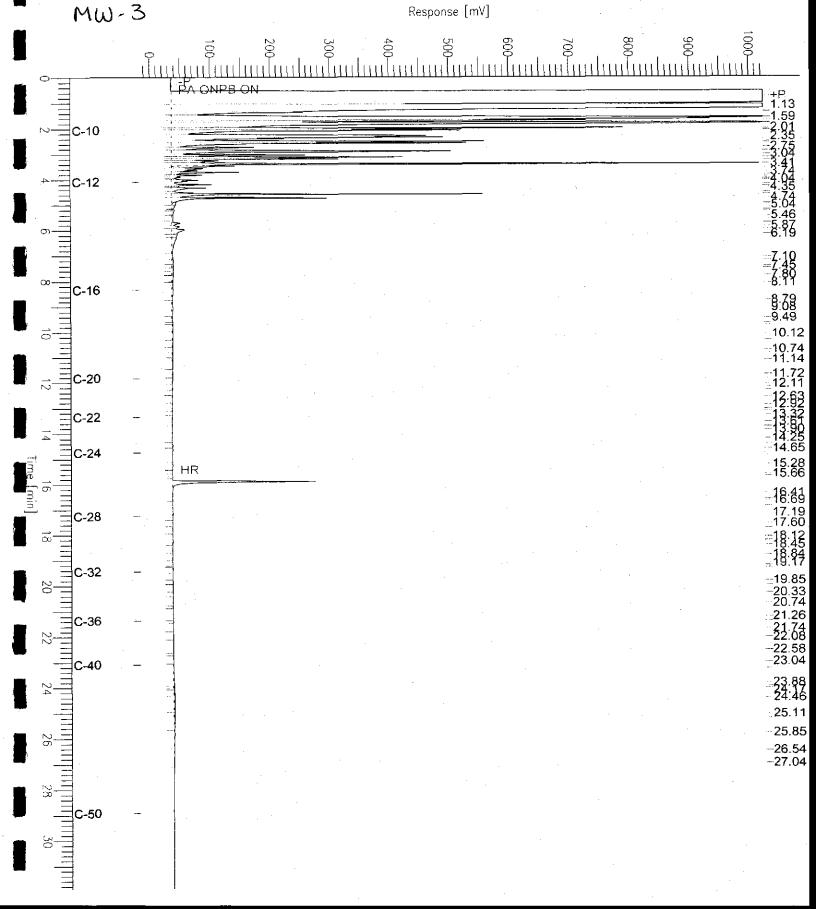
End Time : 31.90 min Plot Offset: -17 mV

Page 1 of 1

Sample #: 68270 Date : 11/30/2001 08:14 AM Time of Injection: 11/29/2001 07:00 PM

High Point: 1024.00 mV

Low Point : -16.82 mV Plot Scale: 1040.8 mV





Total Extractable Hydrocarbons

327 34th St. EPA 3520C Lab #: Location: Subsurface Consultants Prep: Client:

8015B(M) 1309.008 Anal<u>ysis:</u> Project#: Received: 11/21/01

Water Matrix: Units: ug/L

Field ID:

MW-4 SAMPLE

Type: 155589-004 Lab ID:

1.000 Diln Fac: Batch#:

68270

11/20/01 11/26/01 11/28/01 Sampled: Prepared: Analyzed: Cleanup Method: EPA 3630C

Analyte Result ND 50 Diesel C10-C24 3<u>00</u>

Motor Oil C24-C36 ND

(3;40**;90**000)65411644458 Surrogate 44-121 93 Hexacosane

Field ID:

MW-5

Type: Lab ID:

SAMPLE 155589-005

Diln Fac: Batch#:

1.000 68270

Sampled:

Prepared:

Analyzed:

11/20/01 11/26/01 11/28/01

Cleanup Method: EPA 3630C

Result R.L Diesel C10-C24 Motor Oil C24-C36 50 860 H 300 500

Limits Surrogate Hexacosane 107 44-121

Field ID:

Type: Lab ID: SAMPLE 155589-006

MW-6

Diln Fac: 1.000 Batch#: 68353

Sampled:

11/21/01 11/29/01 12/01/01 Prepared: Analyzed: EPA 3630C

Cleanup Method:

Result Analyte Diesel C10-C24 ND 50 300 Motor Oil C24-C36 ND

Ske(6000bikni) be Surrogate Hexacosane 44-121

H= Heavier hydrocarbons contributed to the quantitation

L= Lighter hydrocarbons contributed to the quantitation
Y= Sample exhibits fuel pattern which does not resemble standard

ND= Not Detected RL= Reporting Limit Page 2 of 3

Chromatogram

ample Name : 155589-005sg,68270

: G:\GC13\CHB\330B076.RAW

ileName ethod : BTEH321.MTH

Start Time : 0.01 min 0.0 cale Factor:

End Time : 31.91 min

Plot Offset: 28 mV

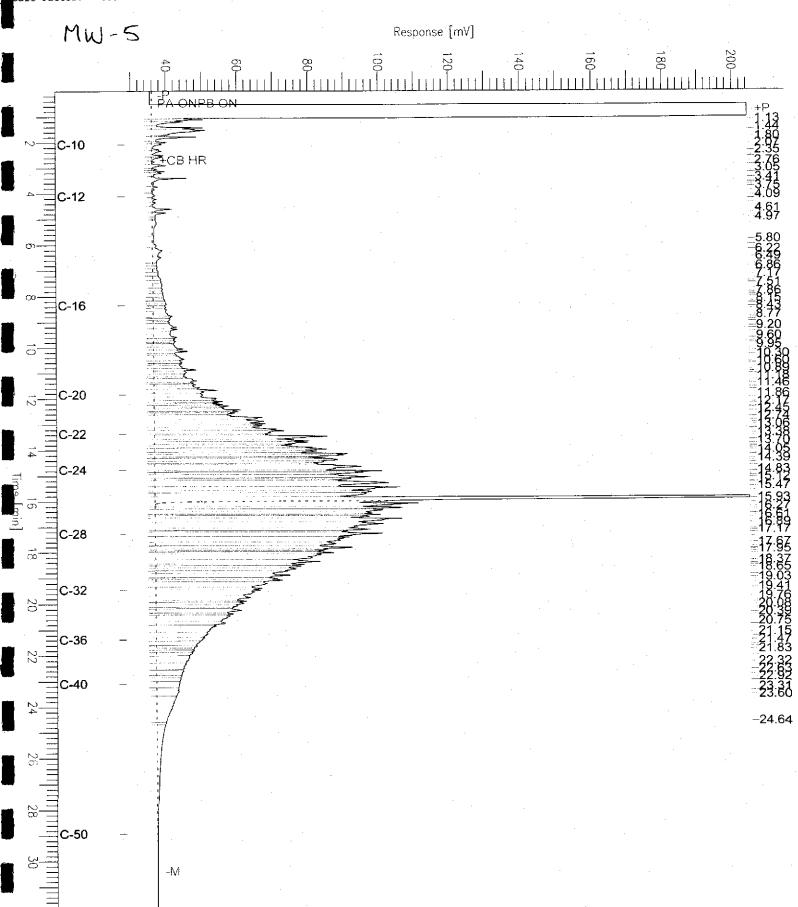
Page 1 of 1

Sample #: 68270 Date : 11/28/2001 05:32 PM

Time of Injection: 11/28/2001 01:01 PM Low Point: 28.37 mV High Point

High Point : 204.35 mV

Plot Scale: 176.0 mV





Total Extractable Hydrocarbons

Received:

327 34th St. EPA 3520C 155589 Location: Lab #: Subsurface Consultants Client: Prep: 8015B(M) 11/21/01 <u>Analysis:</u> 1309.008 Project#:

Matrix: Water uq/L Units:

Field ID: Type:

MW - 7 SAMPLE 155589-007

Diln Fac: Batch#:

Lab ID:

68353

1.000

11/21/01 Sampled: 11/29/01 12/01/01 Prepared: Analyzed:

Cleanup Method: EPA 3630C

P. 99 Result Analyte Diesel C10-C24 ND 50 300 ND Motor Oil C24-C36

£3 (वेट किस्सा विक्रम के प्राप्त के किस्सा के किस् Surrogate 44-121 111 Hexacosane

Type: Lab ID: BLANK QC163316 1.000

Prepared: Analyzed:

11/26/01 11/27/01 Cleanup Method: EPA 3630C

Diln Fac: Batch#: 68270

Analyte Diesel C10-C24 Result 50 ND 300 Motor Oil C24-C36 ND

%REC Limits Surrogate 44-121 Hexacosane 104

Type: Lab ID:

BLANK QC163657 1.000 68353

Prepared:

11/29/01 12/01/01 Analyzed: Cleanup Method: EPA 3630C

Diln Fac: Batch#:

Result <u>Analyte</u> Diesel C10-C24 ND 50 3<u>00</u> Motor Oil C24-C36 ND

RREC Limits Surrogate 44-121 Hexacosane

H= Heavier hydrocarbons contributed to the quantitation

L= Lighter hydrocarbons contributed to the quantitation

Y= Sample exhibits fuel pattern which does not resemble standard

ND= Not Detected RL= Reporting Limit Page 3 of 3

Chromatogram

: ccv,01ws2062,dsl

: G:\GC15\CHB\330B004.RAW

: BTEH309.MTH : 0.01 min

End Time : 31.91 min Plot Offset: 29 mV

Sample #: 500mg/L

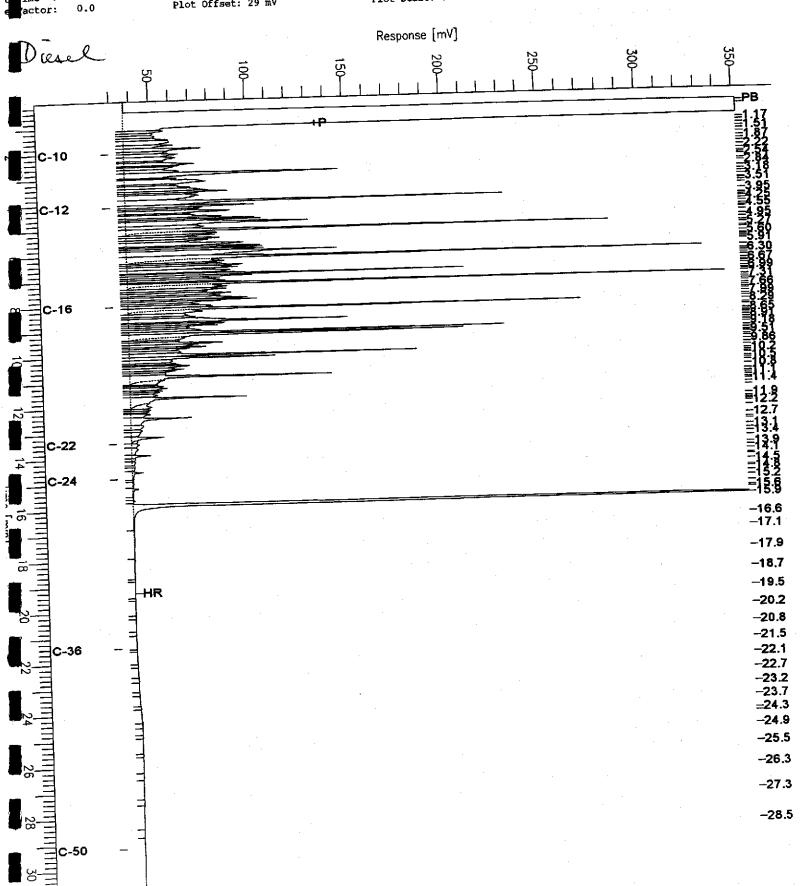
Page 1 of 1

Date: 11/26/2001 10:06 AM

Time of Injection: 11/26/2001 09:22 AM

High Point : 351.86 mV

Low Point : 29.27 mV Plot Scale: 322.6 mV



Chromatogram

e Name : ccv,01ws2115,mo

: G:\GC15\CHB\330B003.RAW

: BTEH309.MTH

: 0.01 min Time . Factor: 0.0

End Time : 31.91 min

Plot Offset: 34 mV

Sample #: 500mg/L

Date: 11/26/2001 09:15 AM Time of Injection: 11/26/2001

Low Point : 34.23 mV

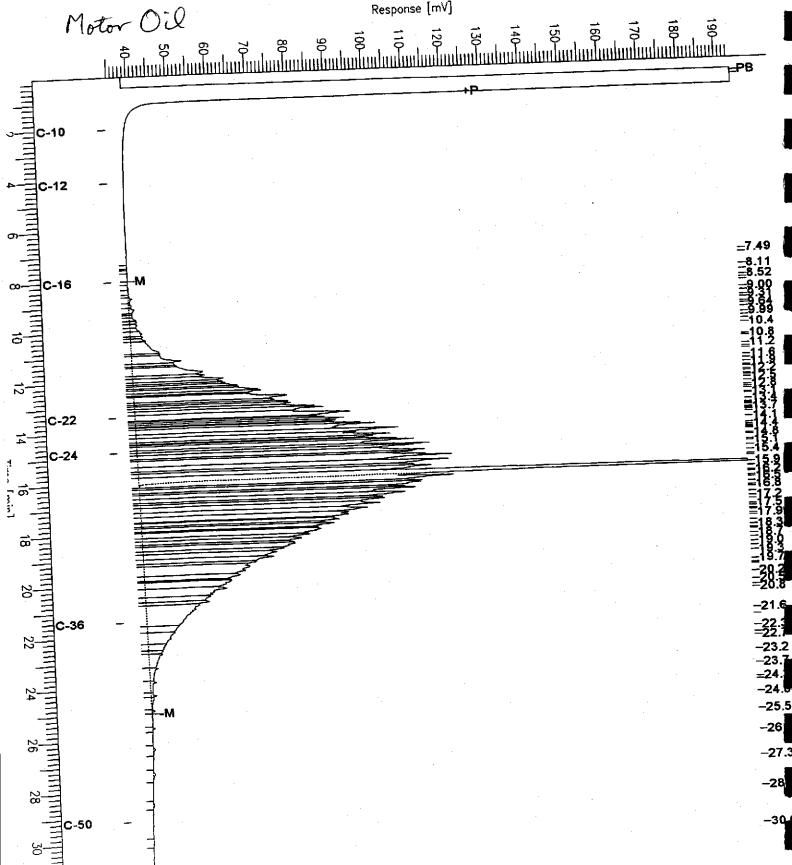
Page 1 of 1

08:42 AM

High Point: 193.89 mV

Plot Scale: 159.7 mV







Total Extractable Hydrocarbons 327 34th St. Location: 155589 EPA 3520C Subsurface Consultants Prep: lient: 8015B(M) <u> Analysis:</u> 1309.008 Project#: Batch#: 68270 Water atrix: 11/26/01 Prepared: ug/L nits: 11/27/01 Analyzed: 1,000 Diln Fac:

Cleanup Method: EPA 3630C

b ID:

QC163317

		·			73
		Degrilly	%REC	T. Similation	<u> </u>
Analyte	Spiked	*****			4
iogol C10-C24	2.500	2,260	90	45-110	⅃
TESET CIO CAR					-

Surrogate		Limits	
Hexacosane	104	44-121	

BSD

QC163318

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	RREC	Limits	RPD	Lim
Diesel ClO-C24	2,500	2,447	98	45-110	8	22

Surrogate	%RBC	Limits
Iexacosane	107	44-121



Total Extractable Hydrocarbons Location: 327 34th St. 155589 Lab #: EPA 3520C Subsurface Consultants Prep: Client: 8015B(M) Analysis: 1309.008 Project#: 68353 Matrix: Water Batch#: 11/29/01 Prepared: ug/L Units: 12/01/01 1.000 Analyzed: Diln Fac:

Type: Lab ID:

QC163658

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	· RIL	Limits	
Diesel C10-C24	2,500	2,022	81	45-110	

Surrogate	%REC	Limits		
Hexacosane	87	44-121	 	

Type:

BSD

Lab ID: QC163659 Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%RE	C Limits	RPD	Lim
Diesel C10-C24	2,500	2,342	94	45-110	15	22

Surrogat	e %REC	Limits	
Hexacosane	103	44-121	



	Me	ınganese	
Lab #:	155589	Location:	327 34th St.
Client:	Subsurface Consultants 1309.008	Prep: Analysis:	EPA 3010 EPA 6010B
Project#: Analyte:	Manganese	Batch#:	68245
Matrix:	Water	Received:	11/21/01
Units:	ug/L	Prepared:	11/26/01
Diln Fac:	1.000	Analyzed:	11/29/01

Freid ID	Type Lab ID	Result	RL	Sampled
MW-1	SAMPLE 155589-001	1,800	10	11/20/01
	SAMPLE 155589-002	2,000	10	11/20/01
MW-2 MW-3	SAMPLE 155589-003	12,000	10	11/20/01
MW - 4	SAMPLE 155589-004	10,000	10	11/20/01
MW-5	SAMPLE 155589-005	2,500	10	11/20/01
MW-6	SAMPLE 155589-006	5,200	10	11/21/01
MW-7	SAMPLE 155589-007	1,800	10	11/21/01
	BLANK QC163230	ND	10	



	Ме	inganese	
Lab #:	155589	Location:	327 34th St.
Client:	Subsurface Consultants	Prep:	EPA 3010
Project#:	1309.008	Analysis:	EPA 6010B
Analyte:	Manganese	Batch#:	68245
Matrix:	Water	Prepared:	11/26/01
Units:	ug/L	Analyzed:	11/29/01
Diln Fac:	1.000	- · ·	·

BS QC163231 50.00 48.01 96 80-113 BSD QC163232 50.00 48.00 96 80-113 0 25	Туре	Lab ID	Spiked	Result	%REC	Limita R	PD Lim	
BSD OC163232 50.00 48.00 96 80-113 0 25	BS	QC163231	50.00	48.01	96	80-113		
	BSD	QC163232	50.00	48 00	96	80-113 0	<u> 25</u>	



RPD Lim

5

20

	Me	unganese	
Lab #:	155589	Location:	327 34th St.
Client:	Subsurface Consultants	Prep:	EPA 3010
Project#:	1309.008	Analysis:	EPA 6010B
Analyte:	Manganese	Diln Fac:	1.000
Field ID:	ZZZZZZZZZ	Batch#:	68245
Туре:	SDUP	Sampled:	11/20/01
MSS Lab ID:	155586-004	Received:	11/21/01
Lab ID:	QC163233	Prepared:	11/26/01
Matrix:	Water	Analyzed:	11/29/01
Units:	ug/L	-	and the second of the second o

10

Result

50.76

MSS Result

53.55



			0.00 0.413- 0.5
ab #:	155589	Location:	327 34th St.
Client:	Subsurface Consultants	Prep:	EPA 3010
Project#:	1309.008	Analysis:	EPA 6010B
Analyte:	Manganese	Diln Fac:	1.000
Field ID:	ZZZZZZZZZZ	Batch#:	68245
Гуре:	SSPIKE	Sampled:	11/20/01
MSS Lab ID:	155586-004	Received:	11/21/01
Lab ID:	OC163234	Prepared:	11/26/01
Matrix:	Water	Analyzed:	11/29/01
Jnits:	ug/L		



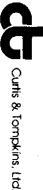
	Ferrous	Iron (Fe+2)	
Lab #: Client: Project#:	155589 Subsurface Consultants 1309.008	Location: Analysis:	327 34th St. FE+2
Analyte: Matrix: Units:	Ferrous Iron (Fe+2) Water mg/L	Batch#: Received: Analyzed:	68228 11/21/01 11/21/01

Field ID	Type Lab ID	Result	RL	Diln Fa	c Sampled
MW-1	SAMPLE 155589-001	0.32	0.10	1.000	11/20/01
MW-2	SAMPLE 155589-002	1.8	0.10	1.000	11/20/01
MW-3	SAMPLE 155589-003	0.84	0.10	1.000	11/20/01
MW-4	SAMPLE 155589-004	1.6	0.10	1.000	11/20/01
T MW-5	SAMPLE 155589-005	0.20	0.10	1.000	11/20/01
MW-6	SAMPLE 155589-006	29	5.0	50.00	11/21/01
MW-7	SAMPLE 155589-007	0.16	0.10	1.000	11/21/01
htw-	BLANK 0C163164	ND	0.10	1.000	<u> </u>

		Perrous Iron (Fe+2)	
Lab #:	155589	Location:	327 34th St.
Client:	Subsurface Consultants	Analysis:	FE+2
Project#:	1309.008		
Analyte:	Ferrous Iron (Fe+2)	Diln Fac:	1.000
Field ID:	MW-7	Batch#:	68228
MSS Lab ID:	155589-007	Sampled:	11/21/01
Matrix:	Water	Received:	11/21/01
Units:	mg/L	Analyzed:	11/21/01

Type	Lab ID	MSS Result	Spiked	Result	% REC	Limits	RPD	Lim	
LCS	QC163165		0.8000	0.8450	106	80-110			
MS	QC163166	0.1631	0.8000	0.9962	104	47-136			
MSD	QC163167	· · · · · · · · · · · · · · · · · · ·	0.8000	0.9983	104	47-136	0	20	

RPD= Relative Percent Difference Page 1 of 1





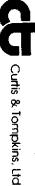
Ammonia Nitrogen 327 34th St. Location: 155589 lab #: METHOD Prep: client: Subsurface Consultants EPA 350.3 Analysis: 1309.008 Project#: Batch#: 68357 Ammonia Analyte: 11/21/01 Received: Water Matrix: 11/29/01 Analyzed: Units: mg/L Diln Fac: 1.000

Field ID	Type Lab ID	Res	ult		RL	Sampled
_MW-1	SAMPLE 155589-001	ND			0.10	11/20/01
MW-2	SAMPLE 155589-002	ND		100	0.10	11/20/01
MW-3	SAMPLE 155589-003	ND			0.10	11/20/01
MW-4	SAMPLE 155589-004	ND		* .	0.10	11/20/01
MW-5	SAMPLE 155589-005	ND			0.10	11/20/01
MW-6	SAMPLE 155589-006		3.4		0.10	11/21/01
мw-7	SAMPLE 155589-007	ND			0.10	11/21/01
-	BLANK OC163673	ND			0.10	

		Ammonia Nitrogen		
Lab #:	155589	Location:	327 34th St.	
Client:	Subsurface Consultants	Prep:	METHOD	
Project#:	1309.008	Analysis:	EPA 350.3	<u> </u>
Analyte:	Ammonia	Diln Fac:	1.000	
Field ID:	ZZZZZZZZZZ	Batch#:	68357	
MSS Lab ID:	155382-001	Sampled:	11/12/01	
Matrix:	Water	Received:	11/13/01	
Units:	mg/L	Analyzed:	11/29/01	

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD Lim		
LCS	OC163674		5.000	5.200	104	80-115		•	
MS	QC163675	<0.1000	5.000	4.830	97	69-140			
MSD	OC163676		5.000	5.080	102	69-140	5 38		

RPD= Relative Percent Difference
Page 1 of 1



Orthosphosphate Phosphorous

Lab #:	155589	Location:	327 34th St
Client:	Subsurface Consultants	Prep:	METHOD
Project#:	1309.008	Analysis:	EPA 300.0
Analyte:	Orthophosphate (as P)	Diln Fac:	1.000
Matrix:	Water	Received:	11/21/01
Units:	mg/L	Prepared:	11/21/01

Field ID	Type Lab ID	Result	RL	Batch# Sampled	Analyzed
MW-1	SAMPLE 155589-001	ND	0.20	68183 11/20/01	11/21/01
MW-2	SAMPLE 155589-002	ND	0.20	68183 11/20/01	11/22/01
MW-3	SAMPLE 155589-003	ND	0.20	68183 11/20/01	11/22/01
MW~4	SAMPLE 155589-004	ND	0.20	68183 11/20/01	11/22/01
MW-5	SAMPLE 155589-005	ND	0.20	68183 11/20/01	11/22/01
MW-6	SAMPLE 155589-006	ND	0.20	68183 11/21/01	11/22/01
MW - 7	SAMPLE 155589-007	ND	0.20	68211 11/21/01	11/22/01
	BLANK QC162982	ND	0.20	68183	11/21/01
	BLANK QC163104	ND	0.20	68211	11/22/01

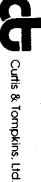
ND= Not Detected RL= Reporting Limit Page 1 of 1



	Orti	osphosphate Phosphoro	ous
Lab #:	155589	Location:	327 34th St.
Client:	Subsurface Consultants	Prep:	METHOD
Project#:	1309.008	Analysis:	EPA 300.0
Analyte:	Orthophosphate (as P)	Units:	mg/L
Matrix:	Water	Prepared:	11/21/01

Field ID	Туре	MSS Lab ID	Lab ID	MSS Result	Spiked	Result	%RE(Limits	RPD	Lim	Diln F	ac Batch#	Sampled Received	Analyzed
	BS		QC162983		10.00	9.815	98	80-110			1.000	68183		11/21/01
	BSD		QC162984		10.00	9.856	99	80-110	0	20	1.000	68183		11/21/01
ZZZZZZZZZZ	MS	155555-001	QC162985	<0.2000	500.0	472.5	95	78-138			100.0	68183	11/19/01 11/20/01	11/21/01
ZZZZZZZZZZ	MSD	155555-001	QC162986		500.0	480.4	96	78-138	2	20	100.0	68183	11/19/01 11/20/01	11/21/01
	BS		QC163105		10.00	10.02	100	80-110			1.000	68211		11/22/01
	BSD		QC163106		10.00	10.04	100	80-110	0	20	1.000	68211		11/22/01
MW - 7	MS	155589-007	OC163107	<0.2000	50.00	50.06	100	78-138			10.00	68211	11/21/01 11/21/01	11/22/01
MW-7	MSD	155589-007	OC163108	•	50.00	51.66	103	78-138	3	20	10.00	68211	11/21/01 11/21/01	11/22/01

RPD= Relative Percent Difference
Page 1 of 1





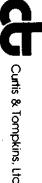
Sulfate 155589 Location: 327 34th St. Lab #: METHOD Subsurface Consultants Prep: Client: EPA 300.0 Project#: 1309.008 Analysis: 11/21/01 Received: Analyte: Sulfate Matrix: Water Prepared: 11/21/01 Units: mg/L

Field ID	Туре	Lab ID	Result	RL	Diln Fac	Batch#	Sampled	Analyzed
MW-1	SAMPLE	155589-001	63	5.0	10.00	68183	11/20/01	11/21/01
MW-2	SAMPLE	155589-002	16	0.50	1.000	68183	11/20/01	11/22/01
⊾MW-3	SAMPLE	155589-003	31	0.50	1.000	68183	11/20/01	11/22/01
MW - 4	SAMPLE	155589-004	11	0.50	1.000	68183	11/20/01	11/22/01
MW-5	SAMPLE	155589-005	42	0.50	1.000	68183	11/20/01	11/22/01
MW-6	SAMPLE	155589-006	1.1	0.50	1.000	68183	11/21/01	11/22/01
MW-7	SAMPLE	155589-007	63	5.0	10.00	68211	11/21/01	11/22/01
	BLANK	QC162982	ND	0.50	1.000	68183	•	11/21/01
•	BLANK	OC163104	ND	0.50	1.000	68211		11/22/01

	Sulfate		
Lab #:	155589	Location:	327 34th St.
Client:	Subsurface Consultants	Prep:	METHOD
Project#:	1309.008	<u> Analysis:</u>	EPA 300.0
	Sulfate	Units:	mg/L
Analyte: Matrix:	Water	Prepared:	11/21/01

Pield ID	Туре	MSS Lab ID Lab ID	MES Result	Spiked	Result	%RB	Limits	RPO L	m Diln F	ac Batchi	Sampled	Recalved	Analyzed
	BS	QC162983		20.00	19.54	98	80-110		1.000	68183			11/21/01
	BSD	QC162984		20.00	19.29	96	80-110	1 20	1.000	68183			11/21/01
ZZZZZZZZZZ	MS	155555-001 QC162985	1,403	1,000	2,305	90	71-128		100.0	68183	11/19/01	11/20/01	11/21/01
ZZZZZZZZZZ	MSD	155555-001 QC162986	•	1,000	2,324	92	71-128	1 20	100.0	68183	11/19/01	11/20/01	11/21/01
	BS	QC163105		20.00	19.57	98	80-110		1.000	68211			11/22/01
	BSD	QC163106		20.00	19.62	98	80-110	0 20	1.000	68211			11/22/01
MW - 7	MS	155589-007 QC163107	62.70	100.0	160.6	98	71-128		10.00	68211	11/21/01	11/21/01	11/22/01
MW - 7	MSD	155589-007 QC163108		100.0	160.3	98	71-128	0 20	10.00	68211	11/21/01	11/21/01	11/22/01

RPD= Relative Percent Difference Page 1 of 1





Client Name: Curtis & Tompkins, Ltd.

Contact: Steve Stanley Address: 2323 Fifth Avenue

Lab Sample # Client Sample ID MW-2

MW-3

MW-4

MW-6

MW-7

20111395-01 0111395-02

0111395-03

0111395-05

P0111395-04

Page 1 of 6

P0111395 Order #:

12/07/01 Report Date: 155589

Client Proj Name: Client Proj #: 155589

Berkeley, CA 94710

Xlebbie Ha

Sample Identification

Approved By:

OTES: SAMPLES REC'D 11/27/01, BUT NOT LOGGED IN UNTIL 11/28/01 BECAUSE OF NON CONFORMANCE. RP

Page 2 of 6

Order #:

P0111395

Report Date: Client Proj Name:

12/07/01

Client Proj #:

155589 155589

Client Name: Curtis & Tompkins, Ltd.

Lab Sample #:

P0111395-01

Contact: Steve Stanley

Address: 2323 Fifth Avenue Berkeley, CA 94710

Matrix

Sampled Date/Time

Received

Sample Description MW-2

Water

20 Nov. 01

28 Nov. 01

Method # **Analyst Analysis Date** Units Analyte(s) **PQL** Result **RiskAnalysis** Water AM20GAX 12/6/01 120 0.60 mg/L mm Carbon dioxide

Page 3 of 6

P0111395

Order #: Report Date:

12/07/01

Client Proj Name:

155589

Client Proj #:

155589

Client Name: Curtis & Tompkins, Ltd.

Contact: Steve Stanley

Address: 2323 Fifth Avenue

Berkeley, CA 94710

Sample Description

<u>Matrix</u>

Sampled Date/Time

Lab Sample #:

Received 1 4 1

P0111395-02

Water

20 Nov. 01

28 Nov. 01

<u></u>	vvalei		<u> </u>	201101.01	
nalyte(s)	Result	PQL.	Units	Method #	Analyst Analysis Date
RiskAnalysis					
Vater arbon dioxide	120	0.60	mg/L	AM20GAX	mm 12/6/01

Page 4 of 6

Order #:

P0111395 12/07/01

Report Date: Client Proj Name:

155589

Client Proj #:

155589

Client Name: Curtis & Tompkins, Ltd.

Contact: Steve Stanley

Address: 2323 Fifth Avenue Berkeley, CA 94710

Sample Description

<u>Matrix</u>

Sampled Date/Time

Lab Sample #:

Received

P0111395-03

Water

20 Nov. 01

28 Nov. 01

IVIVV -4	Hatoi				
Analyte(s)	Result	PQL	Units	Method #	Analyst Analysis Date
RiskAnalysis					
Water Carbon dioxide	130	0.60	mg/L	AM20GAX	mm 12/6/01

Page 5 of 6

Order #:

P0111395

Report Date:

12/07/01

Client Proj Name:

155589

Client Proj #:

155589

Client Name: Curtis & Tompkins, Ltd.

Contact: Steve Stanley

Address: 2323 Fifth Avenue Berkeley, CA 94710

Sample Description

<u>Matrix</u>

Sampled Date/Time

Lab Sample #:

P0111395-04

# ₩-6	Water			21 Nov. 01	28 Nov. 01	
Analyte(s)	Result	PQL	Units	Method #	Analyst Analys	sis Date
RiskAnalysis		.				
arbon dioxide	100	0.60	mg/L	AM20GAX	mm 12/6/0)1

Page 6 of 6

Order #: P0111395

Report Date: 12/07/01

Client Proj Name:

155589

Client Proj #:

155589

Client Name: Curtis & Tompkins, Ltd.

Contact: Steve Stanley

Address: 2323 Fifth Avenue

Berkeley, CA 94710

Sample Description

<u>Matrix</u>

Sampled Date/Time

Lab Sample #:

Received

P0111395-05

MW-7

Water

21 Nov. 01

28 Nov. 01

Analyst Analysis Date Method # Result PQL Units Analyte(s) **RiskAnalysis** Water AM20GAX 12/6/01 62 0.60 mg/L mm Carbon dioxide

Curtis & Tompkins, Ltd.
Analytical Laboratories, Since 1878
2323 Fifth Street
Berkeley, CA 94710
(510)486-0900 ph
(510)486-0532 fx

Project Number: 155589

Subcontract Lab:

Microseeps, Inc. 220 William Pitt Way Pittsburgh, PA 15238 (412) 826-5245

Please send report to: Steve Stanley

Turnaround Time: STD

Report Level: II

Sample ID	Date Sampled Matrix	Analysis	C&T Lab #
 MW-1	20-NOV-01 Water	RSK-175	155589-001
 MW-2	20-NOV-01 Water	RSK-175	155589-002
MW-3 \	20-NOV-01 Water	RSK-175	155589-003
MW-4	20-NOV-01 Water	RSK-175	155589-004
	20-NOV-01 Water	RSK-175	155589-005 (/
MW-6	21-NOV-01 Water	RSK-175	155589-006
MW-7 \	21-NOV-01 Water	RSK-175	155589-007

***Please report using Sample ID instead of C&T Lab #.

Notes:	RELINQUISHED	BY:	RECEIVED BY:	- 1
COa	Ben Makamer 1/26/61	Date/Time	tomaubo	11276(11195
\ 	70011100	Date/Time		Date/Time

Signature on this form constitutes a firm Purchase Order for the services requested above.

NON-CONFORMANCE FORM		(1(1)
Date: 112701	Receiver	: Time of Receipt: 1140
Client: WATS &	Number	Samples out of Conformances
Reason for Non-Conformance:		
Samples revd. past holding time	→	Parameters
Broken Bottles	→ .	Description COOLER POORLY PACKED!
Incorrect containers	\rightarrow	Description
	·	SEE ATTACH
Incorrect preservative	→	Description
Sample ID different from COC	→	Description_
Labels missing or unreadable	→	Description
Analysis not written on COC	→	Description
Sample received not on COC	→	Description
Sample on COC not received	→	Description
Hold time not observed internally	→	Description
Remarks		
Asst. Lab. Dir. Initials:	Date:	(See other side for resolution)

			· · · · · · · · · · · · · · · · · · ·
50N	IPLE ID#	BROKEN	LEFT
MW-1	155589-001	2	0
MW-2	1 -002		
MW-3	-003		
MW-4	-004		
MW-5	-005	2	0
MW-7	007		
MW-1	155578-005		

MICROSEPS

University of Pittsburgh Applied Research Center 220 William Pitt Way, Pittsburgh, PA 15238 (412) 826-5245 FAX (412) 826-3433

FAX COVER SHEET

DATE 11-27-01

NUMBER OF PAGES (including cover sheet)
FAX NO.: 510-486-0532
To: Steve Stanley Tracy Balogar
LOCATION: Cutis & Tompkins
FROM: Becky Hans
FACSIMILE NO: (412) 826-3433
TELEPHONE NO: (412) 826-5245
IF YOU HAVE ANY PROBLEMS RECEIVING THIS MESSAGE, PLEASE NOTIFY LAURA AT THE ABOVE TELEPHONE NUMBER. THANK YOU.
We received samples today that were boken
Please see attached sheet. There are I samples that we cannot analyze. The others we can log
in the one remaining vial.

Becky Hans

From: Sent:

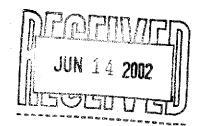
Steve Stanley [steve@ctberk.com] Tuesday, November 27, 2001 2:32 PM Becky Hans

To: Subject:

Brokén vials

I received your fax about the broken vials. It looks like only one of the jobs was affected. I just spoke with my client about it and at this point it appears to be okay. Go ahead and proceed with the samples that you can perform on and just document that the ones you can't do were received broken.

Thanks for the heads up! Steve





Laboratory Number: 158723

Client: Subsurface Consultants, Inc. Project Name: 327 34th Street, Oakland

Receipt Date: 05/22/02

CASE NARRATIVE

This hardcopy data package contains sample results and batch QC results for five water samples received from the above referenced project. The samples were received cold and intact.

Total Volatile Hydrocarbons: No analytical problems were encountered.

Total Extractable Hydrocarbons: No analytical problems were encountered.

Metals: No analytical problems were encountered.

General Chemistry: No analytical problems were encountered.

RSK-175: Microseeps in Pittsburgh, Pennsylvania performed the analysis. Please see the Microseeps case narrative.

158723

PAGE 1 OF 1

ANALYSIS REQUESTED

ROJECT NAM	ME: 327 34th Street, Oa	aklan	nd	<u> </u>		_	-										1-											Ī		clean up							1	ļ
OB NUMBER	B NUMBER: 1039.008 LAB: Curtis and Tompkins														- [(8015 and 8020)	el cle	l	. [1													
'ROJECT CON	ROJECT CONTACT: Emily Silverman TURNAROUND: Standard REQUESTED BY: E Silverman														-	E S	silica gel			- 1					1													
SAMPLED BY												REC	QUE	STI	ED E	3Y:]	E Si	lver	man									_	(801	sing sil				Ş Ş				ł
LABORATORY I.D. NUMBER		MATRIX_				CONTAINERS					PRESERVATIVE						SAM				IPLING DATE						EX, MTBE	TPHmo- us	202			-NO3, O-PO4		100	grams	Staring Staring		
	FIELD SAMPLE I.D.	WATER	<u></u>			A	LITER	Ę	TUBE	-		HCL	H ₂ SO ₄	HNO,		OTHER	ONE	ΜĊ	ONTH	D.	AY	YE	AR	TIME				NOTES	TPH-g, BTEX,	TPHd and	Disolved CO2	Fe(II), Mn	SO4	N-NH3, N-NO3,		EDF Format		
		₹	SOIL	A A	100	2	訌	FINE	2			¥	Ħ,		E	10	Ž	<u> </u>		1-	7	1	7	71	\bigcirc	٥	٥		х	_	х	Х	Х	x				<u>×</u>
	mw-1	X			- 5	_	2					X,	 	X	X	├	┼	10	5	5	5	6	7		7	3	Ŏ		х	х	х	Х	Х	х		_ '		_
	mw-2 *	X		-			듸	_				F		X Y	X	╁	+-	17	12	5	5	1	킨	1	Z	7	5		Х	х	X	х	х	X			x 7	_
	mw-3	X	4	\vdash			7					长	-	X	╁	+-	+	Ŏ	5	5	5	0	2	7	4	3	0		X	Х	х	X	Х	X				X
	mw-4	₩	↓-			-	2			-			+	X	1	╁╌	╅╴	Ĕ	17	7	2	5	2	1	\overline{l}	\mathcal{O}	Ö		х	X	Х	X	X	X	 		x 2 x 2	X
	mw5	11	-	┼-	 	5						1	-	*	╁	+	1	†	1									\bigcirc		X	×	X	*	 				
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		4	ect?		lacksquare					-	K	610	ecei		mbre	10 Or		irta	_	#	+	1 -	† –							L		↓_	┺	<u> </u>			{-	<u>.</u>
	Preservation Preservation	ΤE	3 N	/4	╄				-	1	1 X	E		-			Ï	1112									_	<u> </u>	lacksquare	╁	↓_	╄	┼	┼	╀┦	+	+	
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RELINQUISHED BY: (Signature)

DATE/TIME

RECEIVED BY: (Signature)

DATE/TIME

Fugro West, Inc./Subsurface Consultants, Inc.
1000 Broadway, Suite 200 Oakland, CA 94607

1000 Broadway, Suite 200 Oakland, CA 9400 510-268-0461 FAX: 510-268-0137 2011 Soscol Ave., Suite 5, Napa, CA 94559 707-257-6993 FAX: 707-257-6995

Excel

5-22-02



Total Volatile Hydrocarbons 327 34th Street, Oakland EPA 5030B Location: 158723 Lab #: Prep: Analysis: Subsurface Consultants Client: 8015B(M) 1039.008 roject#: 05/22/02 05/22/02 Sampled: Water Matrix: Received ug/L <u> Units:</u>

Field ID:

MW-1 SAMPLE Diln Fac:

1.000 72515 Batch#: 05/25/02 Analyzed:

RL

50

Туре: ab ID:

158723-001 Analyte

Gasoline C7-C12 ND Limits 68-145 %REC Surrogate 86 Frifluorotoluene (FID)

ield ID: Type: âb ID:

Bromofluorobenzene (FID)

MW-2 SAMPLE 158723-002 Diln Fac:

Batch#: Analyzed: 50.00 72515 05/24/02

Result RL Analyte 500 Gasoline C7-C12 150,000

CRECO Dimiles Surrogate Trifluorotoluene (FID) 68-145 66-143 <u>Bromofluorobenzene (FID)</u>

eld ID:

Гуре: Lab ID:

Basoline C7-C12

MW - 3SAMPLE

158723-003

Diln Fac: Batch#:

Analyzed:

50.00 72542 05/26/02

RL Result Analyte 500 91.000

Result

66-143

Limits Surrogate 68-145 84 Trifluorotoluene (FID) 66-143 92 Bromofluorobenzene (FID)

89

ield ID: ype:

Lab ID:

MW-4 SAMPLE Diln Fac:

1.000 72515

158723-004

Batch#: Analyzed:

05/25/02

Result Analyte 50 940 asoline

Limits Surrogate 84 68-145 Trifluorotoluene (FID) 66-143 <u> Bromofluorobenzene (FID)</u>

ND= Not Detected RL= Reporting Limit Page 1 of 2

Sample Name: 158723-002,72515

: G:\GC04\DATA\144J011.raw FileName

: TVHBTXE Method

Start Time : 0.00 min

End Time : 26.00 min

Plot Offset: 15 mV

Sample #: b1

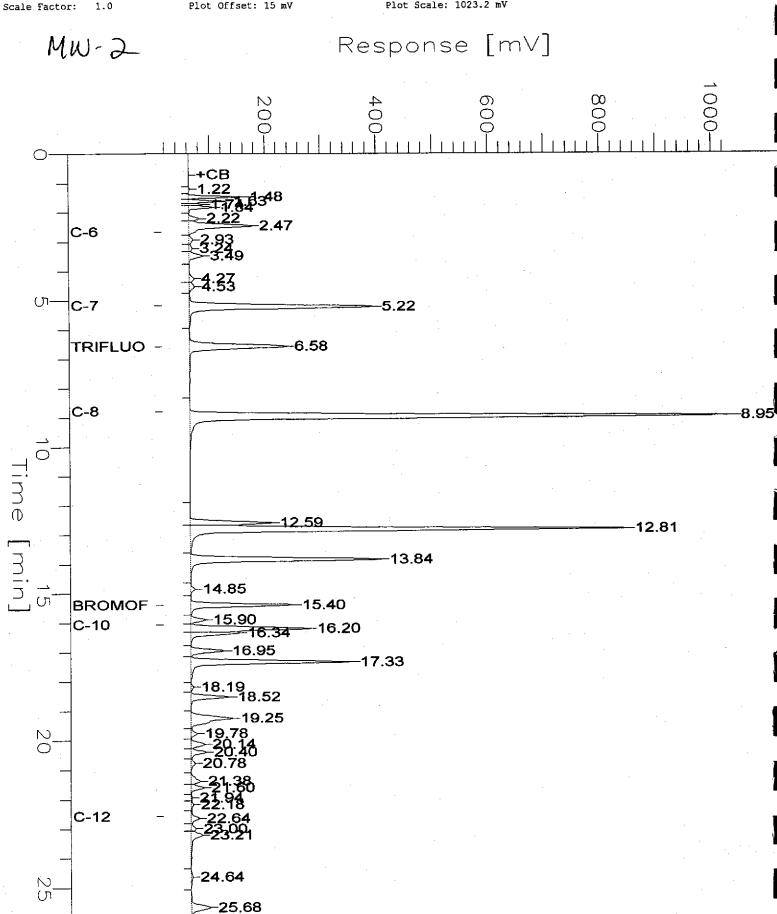
Date: 5/24/02 05:40 PM

Time of Injection: 5/24/02 05:14 PM Low Point : 14.59 mV

High Point: 1037.84 mV

Page 1 of 1

Plot Scale: 1023.2 mV



Page 1 of 1 Sample #: e7
Date : 5/28/02 07:00 AM ample Name : 158723-003,72542 : G:\GC04\DATA\145J033.raw ileName Time of Injection: 5/26/02 05:38 AM : TVHBTXE Method High Point: 745.99 mV Low Point : 29.63 mV Start Time : 0.00 min End Time : 26.00 min Plot Scale: 716.4 mV Plot Offset: 30 mV cale Factor: 1.0 Response [mV] MW-3 20 +CB 1.22 <u>-1.64</u>.84 C-6 4.28 C-7 5,20-5.65 6.14 6.58 TRIFLUO --7.25 7.74 -8.50 C-8 8.96 3.49 9.41 11.27 12.59 -12.8013.84 14.85 BROMOF -15.40 15.89 C-10 -16.34 16.19 16.95 17.33 18.19 ----18.52 -19.25 19.79 -28:43 20.78 21.88 22.18 C-12 O

-25.68

Sample Name: 158723-004,72515

: G:\GC04\DATA\144J025.raw FileName

: TVHBTXE Method

Start Time : 0.00 min

End Time : 26.00 min

Plot Offset: 13 mV

Sample #: b1 Date : 5/25/02 01:59 AM

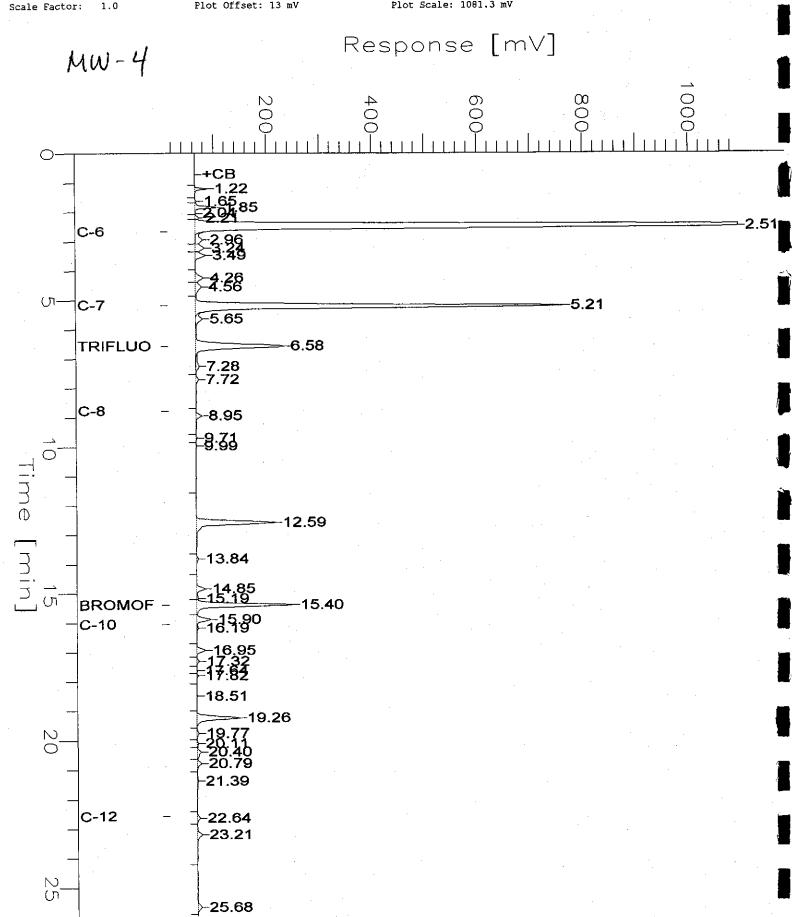
Time of Injection: 5/25/02 01:33 AM

Low Point : 13.13 mV

High Point: 1094.42 mV

Page 1 of 1







Total Volatile Hydrocarbons

327 34th Street, Oakland Location: Lab #: 158723 Client: Prep: Analysis: EPA 5030B Subsurface Consultants 8015B(M) 05/22/02 05/22/02 1039.008 Projec<u>t#:</u> Water Sampled: Matrix: uq/L Received: Units:

ield ID:

Type: ab ID: MW-5 SAMPLE 158723-005 Diln Fac:

Batch#: Analyzed: 1.000

72515 05/25/02

Analyte Result Gasoline C7-C12 ND

are minister Surrogate Trifluorotoluene (FID) 82 68-145 89 66-143 Bromofluorobenzene (FID)

Lab ID:

Gasoline

BLANK QC179236 Batch#:

Analyzed:

72515

05/24/02

Diln Fac: 1.000 Analyte C7-C12 Result ND 50

Surrogate Trifluorotoluene (FID) *REC 86 68-145 <u>Bromofluorobenzene (FID)</u> 87

pe: ab ID: Diln Fac: BLANK QC179342 $\bar{1}.000$

Batch#:

72542

Analyzed:

05/25/02

Analyte Result asoline C7-C12

*REC Limits Surrogate 68-145 Trifluorotoluene (FID) 86 <u>Bromofluorobenzene (FID)</u> 88 66-143

D= Not Detected RL= Reporting Limit Page 2 of 2

ample Name : ccv/lcs,qc179237,72515,02ws0791,5/5000

: G:\GC04\DATA\144J003.raw ileName

: TVHBTXE ethod tart Time : 0.00 min

End Time : 26.00 min Plot Offset: 48 mV

Sample #:

Page 1 of 1

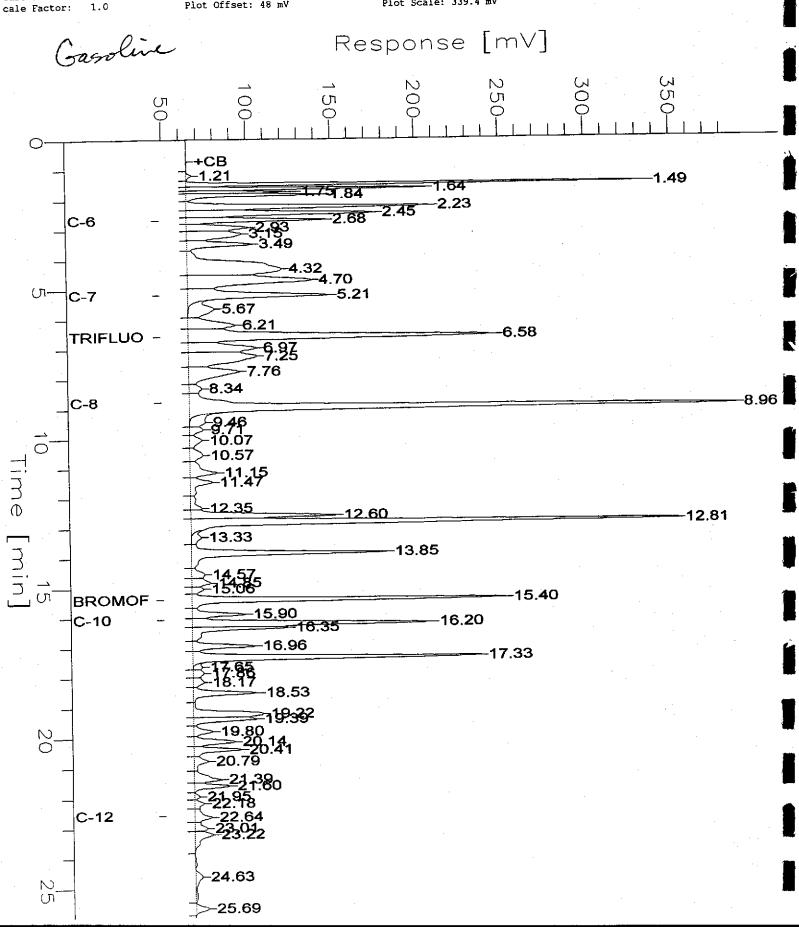
Date: 5/24/02 09:58 AM

Time of Injection: 5/24/02 09:32 AM

Low Point : 48.30 mV

High Point : 387.70 mV

Plot Scale: 339.4 mV





Toluene, Ethylbenzene, Xylenes Benzene, 327 34th Street, Oakland 158723 Location: Lab #: Prep: EPA 5030B Client: Subsurface Consultants EPA 8021B 05/22/02 05/22/02 Project#: 1039.008 Analysis: Sampled: Matrix: Water Units: ug/L Received:

ield ID: Type: ab ID:

MW-1 SAMPLE 158723-001 Diln Fac:

Batch#: Analyzed: 1.000 72515

05/25/02

Result 2.0 MTBE ND 0.50 ND Benzene 0.50 Toluene ND Ethylbenzene 0.50 ND 0.50 ND m,p-Xylenes o-Xylene 0.50 ND

%REC Surrogate Limits Trifluorotoluene (PID) 112 53-143 114 Bromofluorobenzene (PID) 52-142

ield ID: Type: ab ID:

MW - 2

SAMPLE 158723-002 Diln Fac:

Batch#: Analyzed: 100.0

72542 05/26/02

Result 200 4,800 MTBE 50 Benzene 8,600 50 25,000 Toluene 50 3,500 Ethylbenzene m,p-Xylenes 18,000 50 50 8,000 o-Xylene

%REC Limits Surrogate Trifluorotoluene (PID) 116 53-143 Bromofluorobenzene (PID) 118 52-142

ield ID:

m,p-Xylenes

o-Xyl<u>ene</u>

MW-3 SAMPLE

Type: āb ID: Diln Fac:

50.00

25

25

Batch#:

72542 05/26/02

Analyzed: 158723-003 Analyte RL Result 2,200 6,500 MTBE 100 25 Benzene 25 17,000 Toluene 2,200 25 Ethylbenzene

8,600

4,100

Surrogate Trifluorotoluene (PID) PASTIS CAL 121 53-143 Bromofluorobenzene (PID) 118

D= Not Detected RL= Reporting Limit Page 1 of 3



	Benzene, Toluene,	Ethylbenzene	
Lab #:	158723	Location:	327 34th Street, Oakland
Client:	Subsurface Consultants	Prep:	EPA 5030B
Project#:	1039.008	Analysis:	EPA 8021B
Project#: Matrix: Units:	Water	Sampled:	05/22/02
	ug/L	Received:	05/22/02

Field ID: Type: Lab ID:

MW-4

SAMPLE 158723-004 Diln Fac:

Batch#: Analyzed:

2.000 72542 05/26/02

.0

Result Analyte 4.0 1,600 MTBE 1.0 340 Benzene 1.0 5.7 Toluene 1.0 70 Ethylbenzene 1.0 ND m,p-Xylenes o-Xylene

ND

Surrogate	%REC	Les nobies a
Trifluorotoluene (PID)	117	53-143
Bromofluorobenzene (PID)	117	<u> 52-142</u>

Field ID: Type: Lab ID:

MW-5 SAMPLE

158723-005

Diln Fac: Batch#: Analyzed: 1.000 72515 05/25/02

ŖĿ Result 2.0 0.50 ND MTBE ND Benzene 0.50 ND Toluene 0.50 Ethylbenzene m,p-Xylenes o-Xylene ND 0.50 ND ND

	Surrogate	%REC	Limits
Trifluoret	oluene (PID)	110	53-143
	obenzene (PID)	114	52-142
I DIOMOTTACOT			

Type: Lab ID:

BLANK QC179236 Batch#: Analyzed: 72515 05/24/02

1.000 Diln Fac:

		
		RI.
Analyte	ND ND	2 ()
MTBE	ND	0.50
Benzene	ND	· · · · · · · · · · · · · · · · · · ·
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m n-Yvlenes	ND	0.50
Ethylbenzene m,p-Xylenes o-Xylene	ND	0.50
[O-VATERE		

Surrogate	*REC	i o i ma e e e		
Trifluorotoluene (PID)	114	53-143		V.
Bromofluorobenzene (PID)	114	52-142		

ND= Not Detected RL= Reporting Limit Page 2 of 3



	Benzene, Toluene,	Ethylbenzene,	
Lab #:	158723	Location:	327 34th Street, Oakland
Client:	Subsurface Consultants	Prep:	EPA 5030B
Project#:	1039.008	Analysis:	EPA 8021B
Matrix:	Water	Sampled:	05/22/02
Units:	uq/L	Received:	05/22/02

Type: Lab ID: Diln Fac: BLANK QC179342 1.000 Batch#: Analyzed: 72542 05/25/02

Analyte	Result	RE.	
MTBE	ND	2.0	j
Benzene	ND	0.50	
Toluene	ND	0.50	
Ethvlbenzene	ND	0.50	
m.p-Xvlenes	ND	0.50	
o-Xvlene	ND	0.50	

	Surrogate	00000000000000000000000000000000000000	La molt e	
	Trifluorotoluene (PID)	111	53-143	
Τ	<u>Bromofluorobenzene (PID)</u>	113	52-142	



	Total Volat	sile Hydrocarbo	ms
Lab #: Client:	158723 Subsurface Consultants	Location: Prep:	327 34th Street, Oakland EPA 5030B
Project#:	1039.008	Analysis:	8015B(M)
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC179237	Batch#:	72515
Matrix:	Water	Analyzed:	05/24/02
Units:	ug/L		

Analyte	Spiked	Result		C Limits	
Gasoline C7-C12	2,000	1,956	98	79-120	
					

Surrogate	%RE(Limits	
Trifluorotoluene (FID)	97	68-145	
Bromofluorobenzene (FID)	94	66-143	<u> </u>



Total Volatile Hydrocarbons

Lab #: 158723 Location: 327 34th Street, Oakland

llient: Subsurface Consultants Prep: EPA 5030B

Project#: 1039.008 Analysis: 8015B(M)

Type: LCS Diln Fac: 1.000
Lab ID: QC179343 Batch#: 72542
Matrix: Water Analyzed: 05/25/02

Units: ug/L

Analyte	Spiked	Result	*REC	Limits	
Gasoline C7-C12	2,000	1,876	94	79-120	

Surrogate	%REC	Limits	
Trifluorotoluene (FID)	95	68-145	ŀ
Bromofluorobenzene (FID)	93	66-143	



	Benzene, Toluene,	Ethylbenzene,	Xylenes
Lab #:	158723	Location:	327 34th Street, Oakland
Client:	Subsurface Consultants	Prep:	EPA 5030B
Project#:	1039.008	Analysis:	EPA 8021B
Type:	BS	Diln Fac:	1.000
Lab ID:	QC179238	Batch#:	72515
Matrix:	Water	Analyzed:	05/24/02
Units:	ug/L		·

Analyte	Spiked	Result	%REC	Limits	
MTBE	20.00	18.72	94	51-125	
Benzene	20.00	19.96	100	65-122	
Toluene	20.00	20.99	105	67-121	
Ethylbenzene	20.00	21.14	106	70-121	
m,p-Xylenes	20.00	22.02	110	72-125	•
o-Xylene	20.00	21.05	105	73-122	

Surrogate	%REC	Limits	
Trifluorotoluene (PID)	112	53-143	
Bromofluorobenzene (PID)	115	52-142	



	Benzene, Toluene,	Ethylbenzene,	Xylenes
Lab #:	158723	Location:	327 34th Street, Oakland
Client:	Subsurface Consultants	Prep:	EPA 5030B
	1039.008	Analysis:	EPA 8021B
Project#: Type:	BSD	Diln Fac:	1.000
Lab ID:	QC179310	Batch#:	72515
Matrix:	Water	Analyzed:	05/25/02
Units:	ug/L		

	Sniked	Respi	%REC	T. i m i E si	RPI	Trim
MTBE	20.00	19.02	95	51-125	2	20
Benzene	20.00	19.53	98	65-122	2	20
Toluene	20.00	20.89	104	67-121	0	20
Ethylbenzene	20.00	20.13	101	70-121	5	20
m,p-Xylenes	20.00	20.64	103	72-125	6	20
o-Xylene	20.00	20.43	102	73-122_	3_	20

Surrogate	%REC	Limits
Trifluorotoluene (PID)	111	53-143
Bromofluorobenzene (PID)	114	52-142



	Benzene, Toluene,	Ethylbenzene,	Xylenes
Lab #:	158723	Location:	327 34th Street, Oakland
Client:	Subsurface Consultants	Prep:	EPA 5030B
Project#:	1039.008	Analysis:	EPA 8021B
Matrix:	Water	Batch#:	72542
Units:	ug/L	Analyzed:	05/25/02
Diln Fac:	1.000		

Type:

BS

Lab ID:

QC179344

Analyte	Spiked	Result	\$RBC	Limits	
MTBE	20.00	19.31	97	51-125	
Benzene	20.00	19.61	98	65-122	
Toluene	20.00	18.93	95	67-121	
Ethylbenzene	20.00	21.25	106	70-121	
m,p-Xylenes	20.00	21.74	109	72-125	
o-Xylene	20.00	21.15	106	73-122	

Surrogate	%RBC	Limits	
Trifluorotoluene (PID)	115	53-143	
Bromofluorobenzene (PID)	115	52-142	 <u> </u>

Type:

BSD

Lab ID:

QC179345

Analyte	Spiked	Result	%REC	Limits	RPD) Lim
MTBE	20.00	19.40	97	51-125	0	20
Benzene	20.00	19.90	100	65-122	1	20
Toluene	20.00	21.30	107	67-121	12	20
Ethylbenzene	20.00	21.07	105	70-121	1	20
m,p-Xylenes	20.00	21.65	108	72-125	Ò	20
o-Xylene	20.00	_ 21.19	106	73-122	0	20

Surrogate	%REC	Limits	
Trifluorotoluene (PID)	113	53-143	
Bromofluorobenzene (PID)	115	52-142	



	Total Volat	ile Hydrocarbo	ons.
Lab #:	158723	Location:	327 34th Street, Oakland
Client:	Subsurface Consultants	Prep:	EPA 5030B
Project#:	1039.008	Analysis:	8015B(M)
Field ID:	ZZZZZZZZZ	Batch#:	72515
MSS Lab ID:	158766-006	Sampled:	05/22/02
Matrix:	Water	Received:	05/23/02
Units:	ug/L	Analyzed:	05/24/02
Diln Fac:	1.000		

ype:

MS

Lab ID:

QC179308

Analyte		Spiked	Result	%R)	BC Limits
Gasoline C7-C12	348.3	2,000	2,285	97	67-120

Surrogate		%REC	Limits	
	'ID)	89	68-145	
Bromofluorobenzene	(FID)	96	66-143	

Type:

MSD

Lab ID:

QC179309

Analyte	Spiked	Result		' Limits	RPI	l Lin
Gasoline C7-C12	2,000	2,261	96	67-120	1	20

Surrogate	%RI	C Limits
Trifluorotoluene (FID)	90	68-145
Bromofluorobenzene (FID)	97	66-143



	Total Volat	ile Hydrocarbo	ns
Lab #:	158723	Location:	327 34th Street, Oakland
Client:	Subsurface Consultants	Prep:	EPA 5030B
Project#:	1039.008	Analysis:	8015B(M)
Field ID:	ZZZZZZZZZZ	Batch#:	72542
MSS Lab ID:	158775-001	Sampled:	05/22/02
Matrix:	Water	Received:	05/23/02
Units:	uq/L	Analyzed:	05/25/02
Diln Fac:	1.000	_	

Type:

MS

Lab ID:

QC179346

Analyte	MSS Result		Result	%RI	CC Limits
Gasoline C7-C12	<33.00	2,000	1,797	90	67-120

20000	Surrogate	%REC	Limits		
ľ	Trifluorotoluene (FID)	94	68-145		
١	Bromofluorobenzene (FID)	95	66-143		

Type:

MSD

Lab ID:

QC179347

Analyte	Spiked	Result		Limits	RPI	Lin
Gasoline C7-C12	2,000	1,787	89	67-120	1	20

Surrogate	¥REC	Limits		
Trifluorotoluene (FID)	94	68-145		,
Bromofluorobenzene (FID)	94	66-143		



Total Extractable Hydrocarbons 327 34th Street, Oakland Lab #: 158723 Location: Subsurface Consultants Prep: EPA 3520C Client: EPA 8015B(M) 05/22/02 05/22/02 1039.008 roject#: <u> Analysis:</u> Sampled: atrix: Water ug/L Received: nits: 05/23/02 Batch# 72485 Prepared:

Field ID:

MW-1 SAMPLE Diln Fac: Analyzed:

1.000 05/24/02 EPA 3630C Cleanup Method:

Type: b ID:

158723-001

Analyte Result RL

Diesel C10-C24 Motor Oil C24-C36 50 300 ND

Surrogate %REC Limits Hexacosane

eld ID: Ь ID:

MW-2SAMPLE 158723-002

Diln Fac:

Analyzed: Cleanup Method: EPA 3630C

10.00 05/28/02

Result Diesel Cl0-C24 Motor Oil C24-C36 31,000 L Y 500 000 ND

%REC Limits Surrogate xaçosane

eld ID:

MM - 3

SAMPLE -158723-003 Diln Fac:

Analyzed: Cleanup Method: 10.00

05/28/02 EPA 3630C

<u>Analyte</u> Result iesel C10-C24 14,000 L Y 500 Motor Oil C24-C36 000 ND

Surrogate %REC Limits DO exacosane 39-137

eld ID:

MW-4 SAMPLE

158723-004

Diln Fac:

Analyzed: Cleanup Method:

1.000 05/25/02 EPA 3630C

Analyte iesel C10-C24 Result 83 L Y 50 Motor Oil C24-C36 ND

Surrogate Limits 95 xacosane

= Heavier hydrocarbons contributed to the quantitation L= Lighter hydrocarbons contributed to the quantitation

Y= Sample exhibits fuel pattern which does not resemble standard

= Diluted Out = Not Detected

RL= Reporting Limit Page 1 of 2

Sample Name : 158723-002sg,72485

: G:\GC11\CHA\148A006.RAW FileName

Method : ATEH144.MTH

Start Time : 0.00 min

End Time : 31.90 min

Plot Offset: -23 mV 0.0 Scale Factor:

Sample #: 72485

Date: 5/28/02 03:01 PM

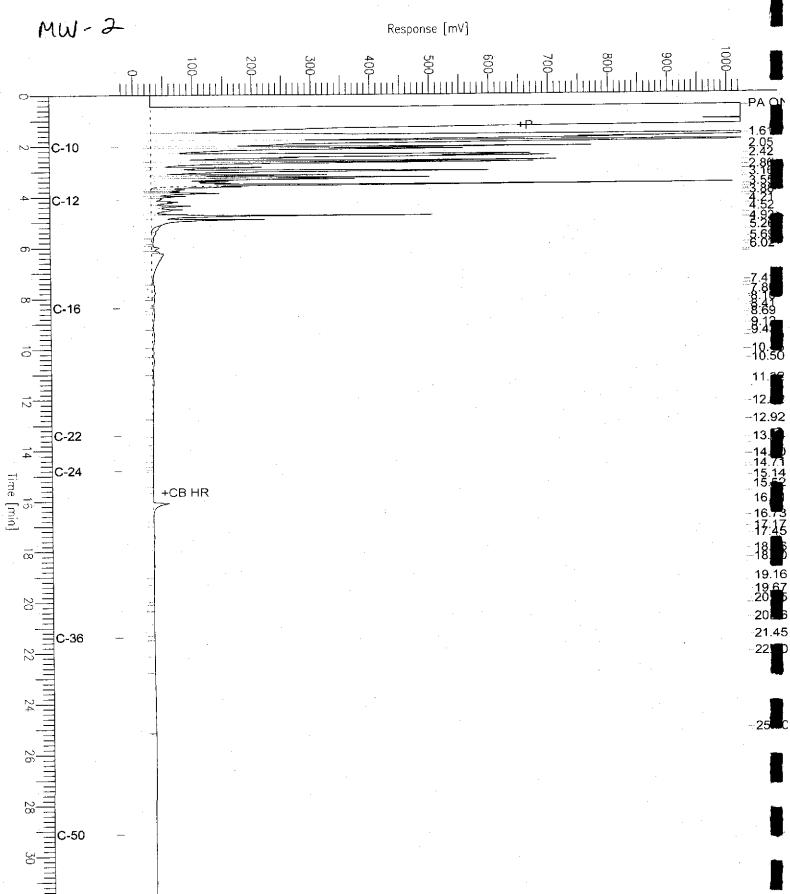
02:06 PM

Time of Injection: 5/28/02 Low Point: -22.91 mV

High Point : 1024.00 mV

Page 1 of 1

Plot Scale: 1046.9 mV



ample Name : 158723-003sg,72485 : G:\GC11\CHA\148A008.RAW

leName ethod : ATEH144.MTH

Start Time : 0.00 min 0.0

End Time : 31.90 min Plot Offset: -23 mV

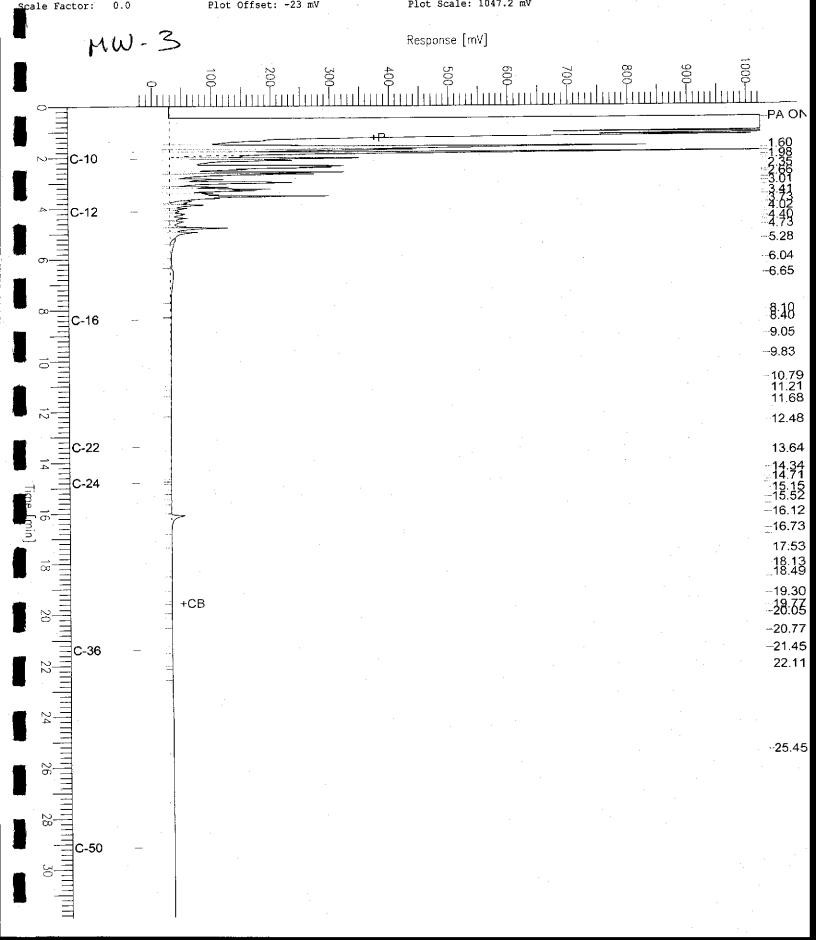
Sample #: 72485

Page 1 of 1

Date: 5/28/02 04:09 PM Time of Injection: 5/28/02 03:27 PM

Low Point : -23.21 mV High Point: 1024.00 mV

Plot Scale: 1047.2 mV



Sample Name : 158723-004sg,72485

FileName : G:\GC11\CHA\143A058.RAW

: ATEH144.MTH Method

Start Time : 0.01 min Scale Factor: 0.0

End Time : 31.91 min

Plot Offset: 27 mV

Sample #: 72485 Date : 5/28/02 11:28 AM

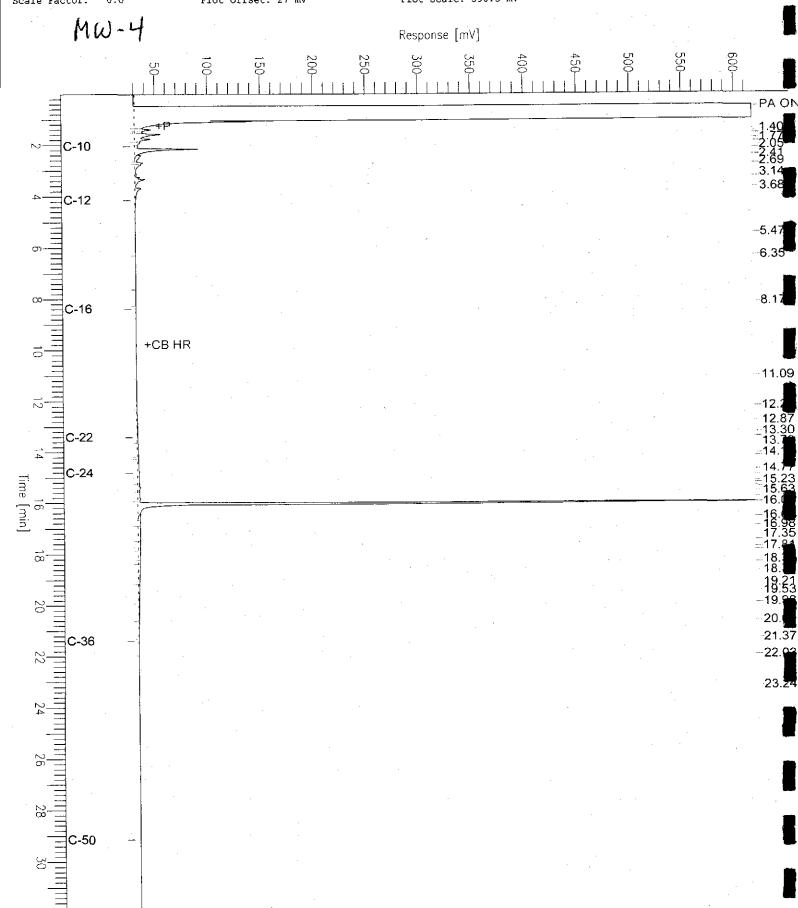
Time of Injection: 5/25/02 01:07 AM

Low Point : 27.23 mV

High Point: 617.68 mV

Page 1 of 1

Plot Scale: 590.5 mV





Total Extractable Hydrocarbons 158723 327 34th Street, Oakland Location: EPA 3520C Subsurface Consultants Client: Prep: EPA 8015B(M) 05/22/02 05/22/02 Analysis: Sampled: 1039.008 roject#: Water atrix: nits: ug/L Received: 72485 05/23/02 Prepared: Batch#:

Field ID: Type:

MW-5 SAMPLE 158723-005 Diln Fac: Analyzed:

Cleanup Method:

50

300

1.000 05/25/02 EPA 3630C

b ID: Analyte

Result 2,200 H L Y

Motor Oil C24-C36

%REC Surrogate Limits Hexacosane

pe: Lab ID: BLANK QC179112 Analyzed:

05/24/02 Cleanup Method: EPA 3630C

Diln Fac:

Diesel C10-C24

1.000

Result Analyte RL Diesel C10-C24 ND 50 Motor Oil C24-C36 300 ND

Surrogate %REC Limits 93 39-137 exacosane

= Heavier hydrocarbons contributed to the quantitation

L= Lighter hydrocarbons contributed to the quantitation Y= Sample exhibits fuel pattern which does not resemble standard

D= Diluted Out = Not Detected

RL= Reporting Limit Page 2 of 2

Sample Name : 158723-005sg,72485

FileName : G:\GC11\CHA\143A059.RAW

: ATEH144.MTH Method

Start Time : 0.01 min Scale Factor: 0.0

End Time : 31.91 min Plot Offset: 24 mV

Sample #: 72485

Date : 5/28/02 11:29 AM

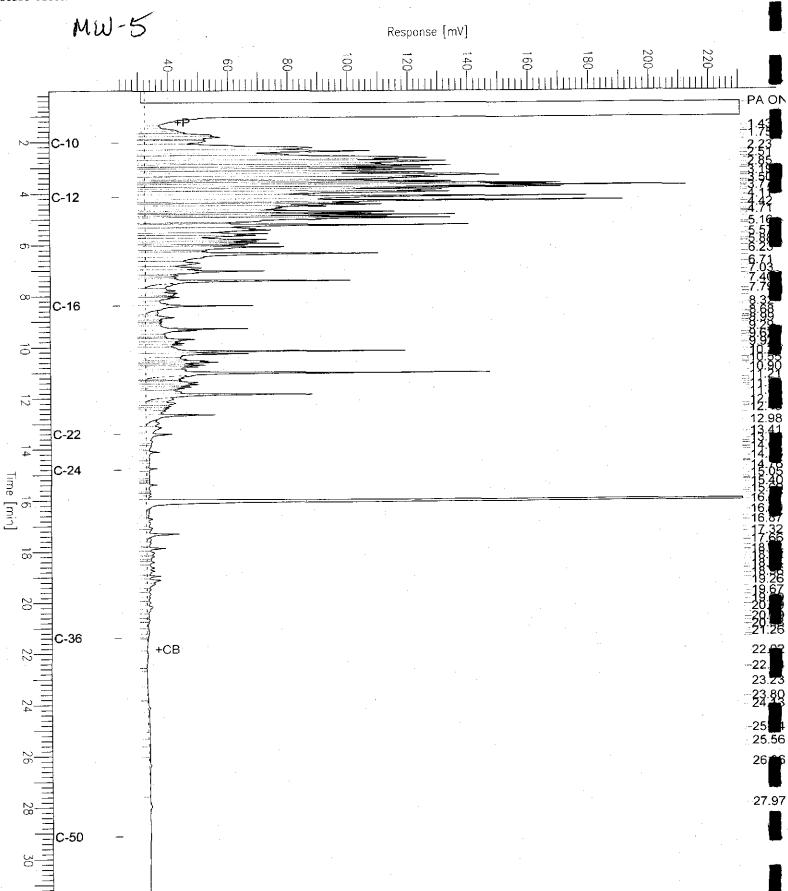
Time of Injection: 5/25/02 01:48 AM

Low Point : 23.77 mV

High Point : 230.61 mV

Page 1 of 1

Plot Scale: 206.8 mV



le Name : ccv,02ws0556,dsl

: G:\GC11\CHA\143A002.RAW FileName

: ATEH119.MTH

Method

rt Time : 0.01 min

: 31.91 min End Time

Plot Offset: 31 mV

Sample #: 500mg/L

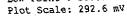
Date : 5/23/02 09:46 AM

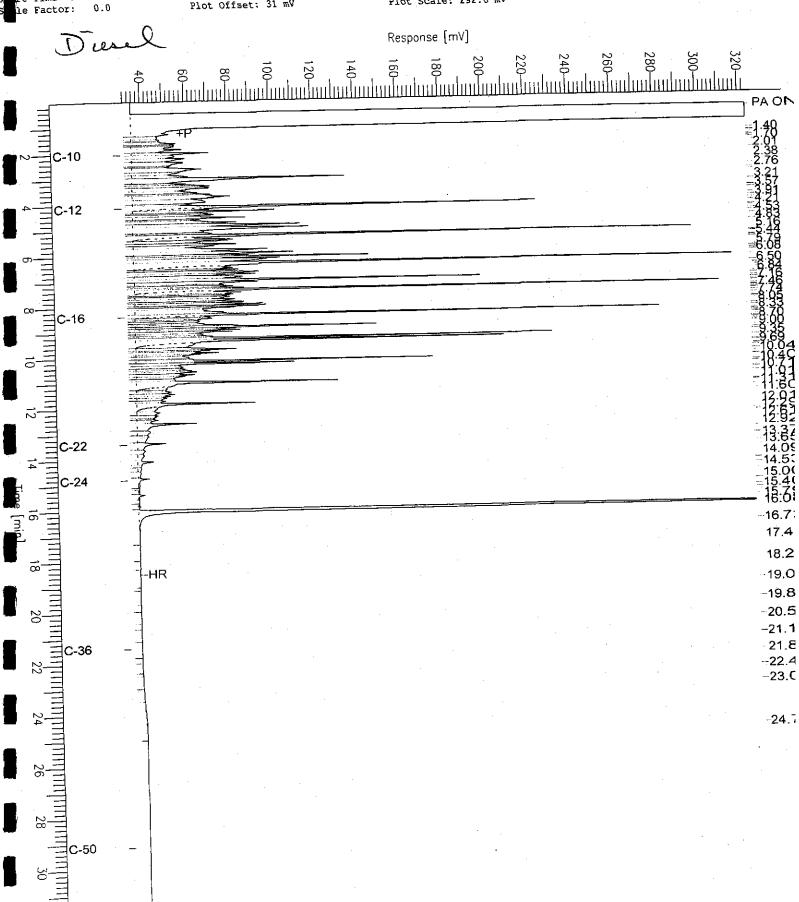
Time of Injection: 5/23/02 08:31 AM

Page 1 of 1

High Point : 323.43 mV

Low Point : 30.82 mV





Sample Name : ccv, 02ws0679, mo

: G:\GC11\CHA\143A003.RAW FileName

: ATEH119.MTH Method

Start Time : 0.01 min Scale Factor:

: 31.91 min End Time

Plot Offset: 31 mV

Sample #: 500mg/L

Page 1 of 1

Date: 5/23/02 09:46 AM

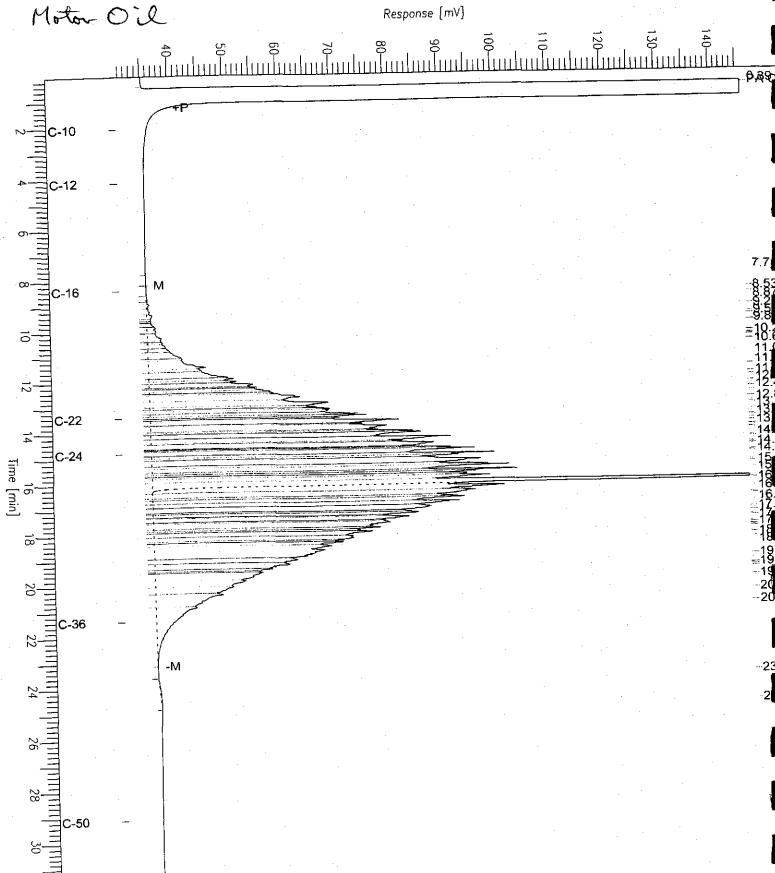
Time of Injection: 5/23/02 09:11 AM

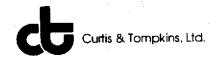
High Point: 145.87 mV

Low Point : 30.69 mV Plot Scale: 115.2 mV



Response [mV]





Total Extractable Hydrocarbons

327 34th Street, Oakland Location: 158723

EPA 3520C Subsurface Consultants Prep: ient: EPA 8015B(M) <u>Analysis:</u>

Project#: 1039.008 72485 Batch#: Water trix:

05/23/02 Prepared: ug/L its: 05/24/02 Analyzed: 1.000 Diln Fac:

Type:

BS

Cleanup Method: EPA 3630C

QC179113 ID:

%REC Limits Spiked Result Analyte 37-120 120 2,990 esel C10-C24 2,500

Limits %REC Surrogate 39-137 118 Hexacosane

BSD

QC179114

Cleanup Method: EPA 3630C

■ Analyte	Spiked	Result	%REC	Limits	RPD	Lim
iesel C10-C24	2,500	2,516	101	37-120	17	26

Surrogate	%REC	Limits	
exacosane	104	39-137	



	Ma	inganese	
Lab #:	158723	Location:	327 34th Street, Oakland
Client:	Subsurface Consultants	Prep:	EPA 3010
Project#:	1039.008	Analysis:	EPA 6010B
Analyte:	Manganese	Batch#:	72511
Matrix:	Water	Sampled:	05/22/02
Units:	ug/L	Received:	05/22/02
Diln Fac:	1.000	Prepared:	05/23/02

F445186 0140	Type Lab ID	Result	RL	Analyzed	
MW-1	SAMPLE 158723-001	500	10	05/29/02	
MW-2	SAMPLE 158723-002	1,700	10	05/29/02	
MW-3	SAMPLE 158723-003	9,600	10	05/29/02	
MW-4	SAMPLE 158723-004	8,400	10	05/29/02	
MW-5	SAMPLE 158723-005	220	10	05/29/02	
PIW-5	BLANK OC179224	ND	10	05/28/02	
	DUANK QC179224	1117			



Manganese

Result

43.90

43.40

ab #: 158723

lient: Subsurface Consultants

1039.008

Manganese

Spiked

50.00

50.00

Matrix: Water Units: ug/L

Project#:

Analyte:

Туре

BS

BSD

Diln Fac: 1.000

Lab ID

QC179225

QC179226

Location: 327 34th Street, Oakland

Prep: EPA 3010

Analysis: EPA 6010B

Batch#: 72511

Prepared: 05/23/02 Analyzed: 05/28/02

*REC

88

87

77-120

77-120

Limits RPD Lim

20

		Manganese	
Lab #:	158723	Location:	327 34th Street, Oakland
Client:	Subsurface Consultants	Prep:	EPA 3010
Project#:	1039.008	Analysis:	EPA 6010B
Analyte:	Manganese	Batch#:	72511
Field ID:	ZZZZZZZZZ	Sampled:	05/20/02
MSS Lab ID:	158686-003	Received:	05/20/02
Matrix:	Water	Prepared:	05/23/02
Units:	ug/L	Analyzed:	05/28/02
Diln Fac:	1.000		

Туре	a Lab ID	MSS Result	Spiked	Result	%REC	Limits RPE	Lim	
MS	QC179227	65.50	50.00	110.0	89	46-136		
MSD	QC179228		50.00	111.0	91	46-136 1	20	

RPD= Relative Percent Difference Page 1 of 1





	Ferrous	Iron (Fe+2)	
Lab #: Client: Project#:	158723 Subsurface Consultants 1039.008	Location: Analysis:	327 34th Street, Oakland SM3500-FE
Analyte: Matrix: Units: Batch#:	Ferrous Iron (Fe+2) Water mg/L 72481	Sampled: Received: Analyzed:	05/22/02 05/22/02 05/23/02

Field I	D Type	Lab ID	Res	mlt	RL	Diln Fac	
MW-1	SAMPLE	158723-001	ND		0.10	1.000	
MW - 2	SAMPLE	158723-002		3.9	0.20	2.000	
MW-2 MW-3	SAMPLE	158723-003		4.2	0.20	2.000	
MW - 4	SAMPLE	158723-004		3.1	0.20	2.000	
_MW - 5	SAMPLE	158723-005	ND	•	0.10	1.000	
Ē.	BLANK	QC179099	ND		0.10	1.000	

Туре	a Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD	Lim	
MS	QC179100	<0.1000	0.8000	0.7760	97	51-146			
MSD	QC179101		0.8000	0.7840	98	51-146	1 .	20	·
LCS	QC179102	·	0.9600	0.9480	99	80-120			

RPD= Relative Percent Difference
Page 1 of 1





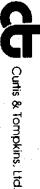
	Ammon	ia Nitrogen	
Lab #:	158723	Location:	327 34th Street, Oakland
Client:	Subsurface Consultants	Prep:	METHOD
Project#:	1039.008	Analysis:	EPA 350.3
Analyte:	Ammonia	Batch#:	72496
Matrix:	Water	Sampled:	05/22/02
Units:	mg/L	Received:	05/22/02
Diln Fac:	1.000	Analyzed:	05/23/02

Field ID	Type Lab ID	Rest	ilt RL
MW-1	SAMPLE 158723-001	ND	0.10
MW-2	SAMPLE 158723-002	ND	0.10
MW-3	SAMPLE 158723-003	ND	0.10
MW-4	SAMPLE 158723-004	n_D	0.10
MW-5	SAMPLE 158723-005	ND	0.10
	BLANK <u>QC179166</u>	ND	0.10

		Ammonia Nitrogen		
Lab #:	158723	Location:	327 34th Street, Oakland	· · · · · · · · · · · · · · · · · · ·
Client:	Subsurface Consultants	Prep:	METHOD	
Project#:	1039.008	Analysis:	EPA 350.3	
Analyte:	Ammonia	Diln Fac:	1.000	
Field ID:	ZZZZZZZZZ	Batch#:	72496	
MSS Lab ID:	158616-002	Sampled:	05/15/02	
Matrix:	Water	Received:	05/15/02	
Units:	mg/L	Analyzed:	05/23/02	

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD	Lim	
LCS	QC179167		5.000	5.410	108	80-120			
MS	QC179168	<0.1000	5.000	5.910	118	64-148			
MSD	QC179169		5.000	5.800	116	64-148	2	39	

RPD= Relative Percent Difference Page 1 of 1





	Nitra	ite Nitrogen	
Lab #: Client: Project#:	158723 Subsurface Consultants 1039.008	Location: Prep: Analysis:	327 34th Street, Oakland METHOD EPA 300.0
Analyte: Matrix: Units: Batch#:	Nitrogen, Nitrate Water mg/L 72484	Sampled: Received: Analyzed:	05/22/02 05/22/02 05/23/02

Field ID	Type Lab ID	Resul	t	RL	Diln Fac
MW-1	SAMPLE 158723-001	Ģ	.5	1.3	25.00
M W-2	SAMPLE 158723-002	C	.54	0.05	1.000
MW - 3	SAMPLE 158723-003	(.77	0.05	1.000
MW - 4	SAMPLE 158723-004	. (.06	0.05	1.000
_MW-5	SAMPLE 158723-005		.0	0.05	1.000
	BLANK QC179107	ND	<u> </u>	0.05	1.000



	Nitre	ate Nitrogen	
Lab #:	158723	Location:	327 34th Street, Oakland
Client:	Subsurface Consultants	Prep:	METHOD
Project#:	1039.008	Analysis:	EPA 300.0
Analyte:	Nitrogen, Nitrate	Batch#:	72484
Field ID:	MW-1	Sampled:	05/22/02
MSS Lab ID:	158723-001	Received:	05/22/02
Matrix:	Water	Analyzed:	05/23/02
Units:	mg/L		

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limita	RPD	Lim	Oiln F	ac
BS	QC179108		2.000	2.077	104	90-110	_		1.000	/
BSD	QC179109	• • • • • • • • • • • • • • • • • • •	2.000	2.066	103	90-110	1	20	1.000	
MS	QC179110	5.470	25.00	31.02	102	80-120			25.00	
MSD	QC179111		25.00	32.07	106	80-120	3	20	25.00	



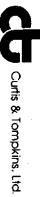
	Orthosphos	hate Phosphore	PUS
ab #:	158723	Location:	327 34th Street, Oakland
lient:	Subsurface Consultants	Prep:	METHOD
Project#:	1039.008	Analysis:	EPA 300.0
	Orthophosphate (as P)	Batch#:	72484
nalyte: atrix:	Water	Sampled:	05/22/02
Units:	mg/L	Received:	05/22/02
Diln Fac:	1.000	Analyzed:	05/23/02

Field I	Type Lab ID	Result	RL
MW-1	SAMPLE 158723-001	ND	0.20
W-2	SAMPLE 158723-002	ND	0.20
W-3	SAMPLE 158723-003	ND	0.20
MW - 4	SAMPLE 158723-004	ND	0.20
■W-5	SAMPLE 158723-005	ND	0.20
	BLANK QC179107	ND	0.20

	Orth	osphosphate Phosphor	ous	
Lab #: Client: Project#:	158723 Subsurface Consultants 1039.008	Location: Prep: Analysis:	327 34th Street, Oakland METHOD EPA 300.0	
Analyte: Field ID: MSS Lab ID: Matrix:	Orthophosphate (as P) MW-1 158723-001 Water	Batch#: Sampled: Received: Analyzed:	72484 05/22/02 05/22/02 05/23/02	
Units:	mg/L			

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD	Lim	Diln	Fac
BS	QC179108		10.00	10.32	103	90-110			1.000	
BSD	QC179109		10.00	10.17	102	90-110	1	20	1.000	:
MS	OC179110	<0.2000	125.0	124.7	100	73-147			25.00	
MSD	QC179111		125.0	127.1	102	73-147	2	30	25.00	

RPD= Relative Percent Difference Page 1 of 1





	4	Julfate	
Lab #:	158723	Location:	327 34th Street, Oakland
:lient:	Subsurface Consultants	Prep:	METHOD
Project#:	1039.008	Analysis:	EPA 300.0
Analyte:	Sulfate	Sampled:	05/22/02
latrix:	Water	Received:	05/22/02
Units:	mg/L	Analyzed:	05/23/02
Batch#:	72484	-	

Field ID	Type Lab ID	Result	RL	Diln Fac
MW-1	SAMPLE 158723-001	58	13	25.00
MW-2	SAMPLE 158723-002	13	0.50	1.000
/IW - 3	SAMPLE 158723-003	25	0.50	1.000
MW - 4	SAMPLE 158723-004	9.0	0.50	1.000
_MW-5	SAMPLE 158723-005	44	0.50	1.000
	BLANK QC179107	ND	0.50	1.000



		Sulfate	
Lab #:	158723	Location:	327 34th Street, Oakland
Client:	Subsurface Consultants	Prep:	METHOD
Project#:	1039.008	Analysis:	EPA 300.0
Analyte:	Sulfate	Batch#:	72484
Field ID:	MW - 1	Sampled:	05/22/02
MSS Lab ID:	158723-001	Received:	05/22/02
Matrix:	Water	Analyzed:	05/23/02
Units:	mg/L		

Type	Lab ID	MSS Result	Spiked	Result	%REC	himits	RP) Lim	Diln F	ac
BS	QC179108		20.00	20.33	102	90-110			1.000	Ì
BSD	QC179109		20.00	20.17	101	90-110	1	20	1.000	
MS	QC179110	57.84	250.0	308.3	100	72-125			25.00	
MSD	QC179111		250.0	305.3	99	72-125	1	20	25.00	



Client Name: Curtis & Tompkins, Ltd.

Contact: Paul Prendergast Address: 2323 Fifth Street

Berkeley, CA 94710

Vlebbie Hallo

Page 1 of 6

Order #: P0205506

Report Date: 05/30/02

Client Proj Name: 158723

Client Proj #: 158723

Sample Identification

b Sample # Client Sample ID

MW-1 205506-01 205506-02

MW-2

MW-3 P0205506-03 MW-4

205506-05 MW-5

Page 2 of 6

Order #:

P0205506

Report Date: Client Proj Name:

05/30/02 158723

Client Proj #:

158723

Client Name: Curtis & Tompkins, Ltd.

Contact: Paul Prendergast

Address: 2323 Fifth Street

Berkeley, CA 94710

Sample Description

<u>Matrix</u>

Sampled Date/Time

Lab Sample #:

Received

P0205506-01

Water Result

120

22 May. 02

24 May. 02

RiskAnalysis

Analyte(s)

Water

MW-1

Carbon dioxide

0.60

PQL

mg/L

Units

AM20GAX

Method #

pd

5/28/02

Analyst Analysis Date

Page 3 of 6

Order #:

P0205506 05/30/02

Report Date: Client Proj Name:

158723

Client Proj#:

158723

P0205506-02

Client Name: Curtis & Tompkins, Ltd.

Contact: Paul Prendergast Address: 2323 Fifth Street

Berkeley, CA 94710

ample Description

<u>Matrix</u> Water

Sampled Date/Time

Lab Sample #:

Received

22 May, 02

24 May, 02

IVIVV-Z	vvalei .			ZZ Way. UZ	24 May. 02	
nalyte(s)	Result	PQL	Units	Method #	Analyst Analysis Date	
<u>RiskAnalysis</u>					****	
Water Carbon dioxide	160	0.60	mg/L	AM20GAX	pd	5/28/02
Tai Doil Giorido		2.20	···• -		•	

Page 4 of 6

Order #:

P0205506

Report Date: Client Proj Name:

05/30/02 158723

Client Proj #:

158723

Client Name: Curtis & Tompkins, Ltd.

Contact: Paul Prendergast

Address: 2323 Fifth Street Berkeley, CA 94710

Sample Description

<u>Matrix</u>

Sampled Date/Time

Lab Sample #:

Received

P0205506-03

22 May. 02

24 May. 02

MW-3	Water		7	22 May. 02	24 May. 02	
Analyte(s)	Result	PQL	Units	Method #	Analyst	Analysis Date
RiskAnalysis	:					•
Water Carbon dioxide	130	0.60	mg/L	AM20GAX	pđ	5/28/02

Page 5 of 6

Order #: Report Date:

P0205506 05/30/02

Client Proj Name:

158723

Client Proj #:

158723

P0205506-04

Client Name: Curtis & Tompkins, Ltd.

Contact: Paul Prendergast Address: 2323 Fifth Street

Berkeley, CA 94710

ample Description

<u>Matrix</u>

Sampled Date/Time

Lab Sample #:

Received

Water

22 May. 02

24 May. 02

MW-4 Analyte(s) **PQL** Units Method # **Analyst Analysis Date** Result **RiskAnalysis** Vater AM20GAX 5/28/02 arbon dioxide 150 0.60 mg/L pd

Page 6 of 6

P0205506 Order #:

Report Date: 05/30/02

Client Proj Name: 158723

Client Proj #: 158723

Lab Sample #:

P0205506-05

Client Name: Curtis & Tompkins, Ltd.

Contact: Paul Prendergast Address: 2323 Fifth Street

Berkeley, CA 94710

Sample Description

Matrix

Sampled Date/Time

Received

22 May. 02

MW-5	Water	·	7	22 May. 02	24 May. 02
Analyte(s)	Result	PQL	Units	Method #	Analyst Analysis Date
<u>RiskAnalysis</u>					
Water Carbon dioxide	140	0.60	mg/L	AM20GAX	pd 5/28/02

Curtis & Tompkins, Ltd.
Analytical Laboratories, Since 1878
2323 Fifth Street
Berkeley, CA 94710
(510) 486-0900
(510) 486-0532

Project Number: 158723

Subcontract Laboratory:

Microseeps, Inc. 220 William Pitt Way

Pittsburgh, PA 15238 (412) 826-5245 ATTN: Becky Hans

Turnaround Time:

Report Level: II

Please send report to: Steve Stanley

Please report using Sample ID rather than C&T Lab #.

ample	e ID		Sampled	Matrix	Analysis	C&T Lab # Comments
ample W-l	01	~	05/22	Water	RSK-175	158723-001 CO2 🕶
MW-2	02		05/22	Water	RSK-175	158723-002 CO2 * •
MW-3	03		05/22	Water	RSK-175	158723-003 CO2 🛂 🗸
MW - 4	04		05/22	Water	RSK-175	լ 158723-004 CO2 ♥ ժ
MW-5	05		05/22	Water	RSK-175	158723-005 CO2

Notes:	Relinquished By:	Received By:
	Bay Malkonnen	Fromaubo
	Date/Time: 5-23-02 1:05	35/2102 303



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 9471O, Phone (51O) 486-0900

ANALYTICAL REPORT

JUN 2 0 2002

Prepared for:

Subsurface Consultants 1000 Broadway Suite 200 Oakland, CA 94607

Date: 18-JUN-02 Lab Job Number: 158761 Project ID: 1039.008

Location: 327 34th Street

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signatures. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis.

Reviewed by:

Project Manager

Reviewed by:

Operations Manager

This package may be reproduced only in its entirety.

NELAP # 01107CA

Page 1 of <u>75</u>



Laboratory Number: 158761

Client: Subsurface Consultants, Inc.

Project Name: 327 34th Street

Receipt Date: 05/23/02

CASE NARRATIVE

This hardcopy data package contains sample results and batch QC results for two water samples received from the above referenced project. The samples were received cold and intact.

Total Volatile Hydrocarbons/BTXE: No analytical problems were encountered.

Total Extractable Hydrocarbons: No analytical problems were encountered.

Metals: The matrix spike recoveries for manganese were not meaningful. The concentration of analyte in the spiked sample rendered the spike amount insignificant. The associated blank spike recoveries were acceptable, therefore, there is no affect on the quality of the sample results. No other analytical problems were encountered.

General Chemistry: No analytical problems were encountered.

RSK-175: Microseeps in Pittsburgh, Pennsylvania performed the analysis. Please see the Microseeps case narrative.

CHAIN OF CUSTODY FORM

Analyses

			_		
Curti	s &	Tomp	٦ŀ	cins,	Ltd.

Analytical Laboratory Since 1878 2323 Fifth Street Berkeley, CA 94710 (510)486-0900 Phone (510)486-0532 Fax	Sampler: ¿	Si	lve	<u>.</u>		C&T LOGIN # <u>15876 /</u>	(8015)	(1) Siget)	5							
Project No: 1039 (01)8	Report To:	<u> </u>	بار	ھ	V V	nan		177		5	3					
Project Name: 327 34th St.	Company:	Sc	1		_		12 M	3/12	62		277-17					
Project P.O.:	Telephone:	<u>ව/</u>	0.:	2 <i>6</i>	7.	4417	m	no 40/5	7		4					
Turnaround Time: Handard	Fax: 5/0.	*.				•	37EX,	n	wa		dy.					
Matrix		Pres					8	1	्रञ्	;			1			
Aboratory Number Sample ID. Sampling Date Time	# of Containers	HCL H2SO	HNO3	핑		Field Notes	上7年女	174.2	ssi <u>d</u>	120(4)	3/2/2	36,		_		
-001 mw-10 5/23	10	X _	X	X			╀			+	┼-	H	$\vdash \dashv$	十	+	4
-002 mw-7 5/23 426 X	10	X	X	X			╫			十	+			7	\top	7
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Notes:					RI	ELINQUISHED BY: 5/23/02/123	d-	$\overline{}$	1				57	123	02	1/1239
EDF Format		1),	11	11	n-, _	DATE/TIM	- (N	24/2	2	ſ	٠ .	DA.	TE/TIM	νE	' '
Notes: EDF Format (RCC) intac and Colo	1	N	$\Delta \Delta$	w	<u> </u>	5/23/02/12/HO DATE/TIM	>	<u> </u>	l Je	~	77	In	(m)	52	3 €0.	173
and Colo						DATE/TIM	E			8	<u> </u>		DA.	TE/TII	ME_	

Signature



	Total Vola	tile Hydrocarbo)ns	
Lab #:	158761	Location:	327 34th Street	
Client:	Subsurface Consultants	Prep:	EPA 5030B	
Project#:	1039.008	Analysis:	8015B(M)	
Matrix:	Water	Sampled:	05/23/02	
Units:	ug/L	Received:	05/23/02	
Diln Fac:	1.000	Analyzed:	05/24/02	
Batch#:	72515	·		<u> </u>

Field ID:

MW-6

Lab ID:

158761-001

Type:

SAMPLE

 Analyte
 Result
 RL

 Gasoline C7-C12
 ND
 50

	Surrogate	%REC	Limits	
٦	Trifluorotoluene (FID)	85	68-145	
١	Bromofluorobenzene (FID)	99	66-143	

Field ID:

MW-7

Lab ID:

158761-002

Type:

SAMPLE

 Analyte
 Result
 RL

 Gasoline C7-C12
 ND
 50

Surrogate	%RE	. Limits		
Trifluorotoluene (FID)	86	68-145	 •	
Bromofluorobenzene (FID)	91	66-143	 	

Type:

BLANK

Lab ID:

QC179236

Analyte			
Gasoline C7-C12	ND	50	

Surrogate	%RE	: Limits	
Trifluorotoluene (FID)	86	68-145	
Bromofluorobenzene (FID)	87	66-143	

ND= Not Detected RL= Reporting Limit Page 1 of 1



	Benzene, Toluene,	Ethylbenzene,	Mylenes
Lab #: Client: Project#:	158761 Subsurface Consultants 1039.008	Location: Prep: Analysis:	327 34th Street EPA 5030B EPA 8021B
Project#: Matrix: Units: Diln Fac: Batch#:	Water ug/L 1.000 72515	Sampled: Received: Analyzed:	05/23/02 05/23/02 05/24/02

ield ID: pe:

MW-6

SAMPLE

Lab ID:

158761-001

Analyte	Result	RL	
MTBE	170	2.0	
Benzene	ND	0.50	
Foluene	ND	0.50	
Ethylbenzene	ND	0.50	·
m,p-Xylenes	1.1	0.50	
mo-Xylene	1.0	0.50	

Surroqate Trifluorotoluene (PID) Bromofluorobenzene (PID) %REC Limits 118 53-143

Field ID: **#**ype:

MW-7

SAMPLE

Lab ID:

158761-002

Analyte	Result	RL	
MTBE	ND	2.0	
Benzene	ND	0.50	
Toluene	ND	0.50	
Ethylbenzene	ND	0.50	
Tm,p-Xylenes	\mathbf{N} D	0.50	
o-Xylene	ND	0.50	

%RKC Limits Surrogate 53-143 52-142 Trifluorotoluene (PID) Bromofluorobenzene (PID) 112 116

Type:

BLANK

Lab ID:

QC179236

Analyte	Result	RL	
MTBE	ND	2.0	
Benzene	ND	0.50	
Toluene	ND	0.50	
Ethylbenzene	ND	0.50	
m,p-Xylenes	ND	0.50	·
o-Xylene	ND	0.50	

Surrogate	%REC	Limits	
Trifluorotoluene (PID)	114	53-143	· · · · · · · · · · · · · · · · · · ·
Bromofluorobenzene (PID)	114	52-142	

ND= Not Detected RL= Reporting Limit Page 1 of 1



	Total Volat	tile Hydrocarbo	nds
Lab #: Client: Project#:	158761 Subsurface Consultants 1039.008	Location: Prep: Analysis:	327 34th Street EPA 5030B 8015B(M)
Type: Lab ID: Matrix: Units:	LCS QC179237 Water ug/L	Diln Fac: Batch#: Analyzed:	1.000 72515 05/24/02

Analyte	Spiked	Result	%RB(Limits	
Gasoline C7-C12	2,000	1,956	98	79-120	
			·		1

Surrogate	%RE(Limits		
Trifluorotoluene (FID)	97	68-145		
Bromofluorobenzene (FID)	94	66-143		



	Benzene, Toluene,	Ethylbenzene,	Xylenes
Lab #:	158761	Location:	327 34th Street
Client:	Subsurface Consultants	Prep:	EPA 5030B
Project#:	1039.008	Analysis:	EPA 8021B
Туре:	BS	Diln Fac:	1.000
Type: Lab ID:	QC179238	Batch#:	72515
Matrix:	Water	Analyzed:	05/24/02
Units:	ug/L	<u>-</u> .	

Analyte	Spiked	Result	%REC	Limits	
MTBE	20.00	18.72	94	51-125	
Benzene	20.00	19.96	100	65-122	
Toluene	20.00	20.99	105	67-121	
Ethylbenzene	20.00	21.14	106	70-121	•
	20.00	22.02	110	72-125	
m,p-Xylenes o-Xylene	20.00	21.05	105	73-122	

Surrogate	%REC	Limits		
Trifluorotoluene (PID)	112	53-143		
Bromofluorobenzene (PID)	115	52-142		



	Benzene, Toluene,	Ethylbenzene,	Xylenes	
Lab #:	158761	Location:	327 34th Street	
Client:	Subsurface Consultants	Prep:	EPA 5030B	
Project#:	1039.008	Analysis:	EPA 8021B	<u> </u>
Type:	BSD	Diln Fac:	1.000	
Lab ID:	OC179310	Batch#:	72515	
Matrix:	Water	Analyzed:	05/25/02	
Units:	ug/L			

Spiked	Result	%REC	Limits	RPD	Teşi (in
20.00	19.02	95	51-125	2	20
20.00	19.53	98	65-122	2	20
20.00	20.89	104	67-121	0	20
20.00	20.13	101	70-121	5	20
20.00	20.64	103	72-125	6	20
20.00	20.43	102	73-122	3	20
	20.00 20.00 20.00 20.00 20.00	20.00 19.02 20.00 19.53 20.00 20.89 20.00 20.13 20.00 20.64	20.00 19.02 95 20.00 19.53 98 20.00 20.89 104 20.00 20.13 101 20.00 20.64 103	20.00 19.02 95 51-125 20.00 19.53 98 65-122 20.00 20.89 104 67-121 20.00 20.13 101 70-121 20.00 20.64 103 72-125	20.00 19.02 95 51-125 2 20.00 19.53 98 65-122 2 20.00 20.89 104 67-121 0 20.00 20.13 101 70-121 5 20.00 20.64 103 72-125 6

Surrogate	%REC	Limits	
Trifluorotoluene (PID)	111	53-143	
Bromofluorobenzene (PID)	114	52-142	



	Total Volat	ile Hydrocarbo	DDB
Lab #:	158761	Location:	327 34th Street
Client:	Subsurface Consultants	Prep:	EPA 5030B
Project#:	1039.008	Analysis:	8015B(M)
Field ID:	ZZZZZZZZZZ	Batch#:	72515
MSS Lab ID:	158766-006	Sampled:	05/22/02
MSS Lab ID: Matrix:	Water	Received:	05/23/02
Units:	ug/L	Analyzed:	05/24/02
Diln Fac:	1.000	-	

vpe:

MS

Lab ID:

QC179308

Analyte	MSS Result	Spiked	Result	%REC	! Limits
Gasoline C7-C12	348.3	2,000	2,285	97	67-120

Surrogate	%RE	C Limits	
Trifluorotoluene (FID)	89	68-145	
Bromofluorobenzene (FID)	96	66-143	╛

Type:

MSD

Lab ID:

QC179309

Analyte	Spiked	Result	30,00000,0000, Se = A F. Luc	Limits	RPI	Lim
Gasoline C7-C12	2,000	2,261	96	67-120	1	20

Surrogate	%R)	C Limits	
Trifluorotoluene (FID)	90	68-145	1
Bromofluorobenzene (FID)	97	66-143	



Total Extractable Hydrocarbons Location: 327 34th Street Lab #: 158761 EPA 3520C Subsurface Consultants Prep: Client: EPA 8015B(M) Analysis: Project#: 1039.008 05/23/02 Water Sampled: Matrix: 05/23/02 Received: Units: ug/L 05/28/02 Prepared: 1.000 Diln Fac: 72557 Batch#:

Field ID:

MW-6

Type:

Lab ID:

SAMPLE

158761-001

Analyzed:

05/29/02

Cleanup Method:

EPA 3630C

Analyte	Result	RL	
Diesel C10-C24 (SGCU)	ND	50	
Motor Oil C24-C36 (SGCU)	ND	300	

Surrogate	%REC	Limits	
Hexacosane (SGCU)	55	39-137	

Field ID:

Type:

MW - 7

SAMPLE

Analyzed:

05/29/02

Cleanup Method: EPA 3630C

Lab ID: 158761-002

Analyte	Result	RL	
Diesel C10-C24 (SGCU)	ND	50	
Motor Oil C24-C36 (SGCU)	ND	300	

Surrogate	%RBC	Limits	
Hexacosane (SGCU)	55	39-137	

Type: Lab ID: BLANK

QC179397

Analyzed:

05/30/02

Cleanup Method:

EPA 3630C

Analyte	Resu	lt RL
Diesel C10-C24 (SGCU)	ND	50
Motor Oil C24-C36 (SGCU)	ND	300

Surrogate	%REC	C Limits	
Hexacosane (SGCU)	52	39-137	

ND= Not Detected

RL= Reporting Limit

SGCU= Silica gel cleanup

Page 1 of 1



Total Extractable Hydrocarbons

158761 Location: 327 34th Street

lient: Subsurface Consultants Prep: EPA 3520C
Project#: 1039.008 Analysis: EPA 8015B(M)

Matrix: Water Batch#: 72557

hits: ug/L Prepared: 05/28/02

in Fac: 1.000 Analyzed: 05/29/02

Type:

b #:

BS

OC179398

Cleanup Method

Cleanup Method: EPA 3630C

Analyte Spiked Result %REC Limits
Diesel C10-C24 (SGCU) 2,500 1,349 54 37-120

Surrogate %REC Limits
Hexacosane (SGCU) 64 39-137

Ippe:

BSD

QC179399

Cleanup Method: EPA 3630C

 Analyte
 Spiked
 Result
 %REC Limits
 RPD Lim

 iesel C10-C24 (SGCU)
 2,500
 1,603
 64
 37-120
 17
 26

Surrogate	%REC	Limits	
exacosane (SGCU)	70	39-137	

PD= Relative Percent Difference SGCU= Silica gel cleanup

Page 1 of 1



	Ma	anganese	
Lab #:	158761	Location:	327 34th Street
Client:	Subsurface Consultants	Prep:	EPA 3010
Project#:	1039.008	Analysis:	EPA 6010B
Analyte:	Manganese	Sampled:	05/23/02
Matrix:	Water	Received:	05/23/02
Units:	ug/L	Prepared:	05/28/02
Diln Fac:	1.000	Analyzed:	05/29/02
Batch#:	72575		<u> </u>

Field ID	Type Lab ID	Result	RL	
MW-6	SAMPLE 158761-001	3,400	10	
MW-7	SAMPLE 158761-002	350	10	
	BLANK QC179472	ND .		



Manganese

ab #: 158761

client: Subsurface Consultants

1039.008

Location:

327 34th Street

Prep:

EPA 3010

Analysis:

EPA 6010B

Manganese

Batch#:

72575 05/28/02

Matrix: Water ug/L Units:

Prepared: Analyzed:

05/29/02

Diln Fac:

Project#:

Analyte:

1.000

Тур	e Lab ID	Spiked	Result	%RE(Limits	RPD Li	m
BS	QC179473	50.00	47.49	95	77-120		
BSD	QC179474	50.00	47.49	95	77-120	0 20)

		Manganese		
			205.0413.61	
Lab #:	158761	Location:	327 34th Street	
Client:	Subsurface Consultants	Prep:	EPA 3010	
Project#:	1039.008	Analysis:	EPA 6010B	
Analyte:	Manganese	Batch#:	72575	
Field ID:	MW - 7	Sampled:	05/23/02	
MSS Lab ID:	158761-002	Received:	05/23/02	
Matrix:	Water	Prepared:	05/28/02	
Units:	ug/L	Analyzed:	05/29/02	
Diln Fac:	1.000			

Type	Lab ID	MSS Result	Spiked	Result	%REC Limits	RPD Lim	
MS	QC179475	352.7	50.00	395.4	85 NM 46-136		
MSD	QC179476		50.00	423.8	142 NM 46-136	7 20	

NM= Not Meaningful RPD= Relative Percent Difference Page 1 of 1





	Ferrous	Iron (Fe+2)	
Lab #: Client: Project#:	158761 Subsurface Consultants 1039.008	Location: Analysis:	327 34th Street SM3500-FE
Analyte: Matrix: Units: Batch#:	Ferrous Iron (Fe+2) Water mg/L 72517	Sampled: Received: Analyzed:	05/23/02 05/23/02 05/24/02

Field ID	Type	Lab ID	Res	sult	R	L	Diln Pac
MW-6	SAMPLE	158761-001		11		0.50	5.000
MW-7	SAMPLE	158761-002		0.11		0.10	1.000
·.	BLANK	QC179243	ND			0.10	1.000

		Ferrous Iron (Fe+2)		
Lab #:	158761	Location:	327 34th Street	
Client:	Subsurface Consultants	Analysis:	SM3500-FE	
Project#:	1039.008			
Analyte:	Ferrous Iron (Fe+2)	Diln Fac:	1.000	
Field ID:	MW - 7	Batch#:	72517	
MSS Lab ID:	158761-002	Sampled:	05/23/02	
Matrix:	Water	Received:	05/23/02	
Units:	mg/L	Analyzed:	05/24/02	

Туре	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD I	im	
MS	QC179244	0.1100	0.8000	0.9200	101	51-146			
MSD	QC179245		0.8000	0.9340	103	51-146	2 2	0	
LCS	QC179246		0.8000	0.8160	102	80-120			

RPD= Relative Percent Difference Page 1 of 1





	Ammor	nia Nitrogen	
Lab #:	158761	Location:	327 34th Street
Client:	Subsurface Consultants	Prep:	METHOD
Project#:	1039.008	Analysis:	EPA 350.3
Analyte:	Ammonia	Batch#:	72599
Matrix:	Water	Sampled:	05/23/02
Units:	mg/L	Received:	05/23/02
Diln Fac:	1.000	Analyzed:	05/29/02

Field ID	Туре	Lab ID	Result	RL
MW-6	SAMPLE	158761-001	8.9	0.10
MW - 7	SAMPLE	158761-002	ND	0.10
<u></u>	BLANK	QC179563	ND	0.10



	Ammor	nia Nitrogen	
Lab #: Client: Project#:	158761 Subsurface Consultants 1039.008	Location: Prep: Analysis:	327 34th Street METHOD EPA 350.3
Analyte: Field ID: MSS Lab ID: Matrix: Units:	Ammonia ZZZZZZZZZZ 158700-002 Water mg/L	Batch#: Sampled: Received: Analyzed:	72599 05/21/02 05/21/02 05/29/02

#woe	Lab ID	MSS Result	Spiked	Result	%REC	Limits R	PD Lim Dila F	ac
LCS	OC179564		5.000	5.070	101	80-120	1.000	
MS	OC179565	269.5	500.0	814.0	109	64-148	100.0	
MSD	QC179566		500.0	804.0	107	64-148 1	L 39 100.0	



	Curtis & Tompkins Lal	poratories Anal	ytical Report
ab #:	158761	Location:	327 34th Street
Client:	Subsurface Consultants	Prep:	METHOD
Project#:	1039.008	Analysis:	EPA 300.0
Matrix:	Water	Sampled:	05/23/02
Jnits:	mg/L	Received:	05/23/02
Batch#:	72484	Analyzed:	05/23/02

Field ID:

ηe:

MW-6

SAMPLE

Lab ID:

158761-001

Diln Fac:

1.000

Analyte	Result	RL	
Nitrogen, Nitrate	0.65	0.05	
Orthophosphate (as P)	ND	0.20	·
Sulfate	1.4	0.50	

Field ID:

MW-7

Lab ID:

158761-002

ире:

SAMPLE

Analyte	Result	RL	Diln Fac
Nitrogen, Nitrate	2.8	0.05	1.000
orthophosphate (as P)	0.11 J	0.20	1.000
Sulfate	51	5.0	10.00

Type:

BLANK

Diln Fac:

1.000

ab ID:

QC179107

		DI:
Analyte	Result	RL
Nitrogen, Nitrate	ND	0.05
Orthophosphate (as P)	ND	0.20
Sulfate	ND	0.50

J= Estimated value D= Not Detected RL= Reporting Limit Dage 1 of 1



_	Curtis & Tompkins Lal	ooratories Ana]	ytical Report
Lab #: Client: Project#:	158761 Subsurface Consultants 1039.008	Location: Prep: Analysis:	327 34th Street METHOD EPA 300.0
Matrix: Units: Diln Fac:	Water mg/L 1.000	Batch#: Analyzed:	72484 05/23/02

Type:

BS

Lab ID:

QC179108

					000000000000000000000000000000000000000
Analyte	Spiked	Result	%REC	Limits	
	0 000	2 077	104	90-110	
Nitrogen, Nitrate	2.000	2.077	104	90-110	I
Orthophosphate (as P)	10.00	10.32	103	90-110	L.
		20.22	100	90-110	
Sulfate	20.00	20.33	102	90-110	

Type :

BSD

Lab ID:

QC179109

Analyte	Spiked	Result	%REC	Limits	RPD Lim
Nitrogen, Nitrate	2.000	2.066	103	90-110 1	1 20
Orthophosphate (as P)	10.00	10.17	102	90-110	1 20
Sulfate	20.00	20.17	101_	90-110 1	1 20_



	Curtis & Tompkins Lah	ooratories Anal	vtical Report
- h #	158761	Location:	327 34th Street
ab #: :lient:	Subsurface Consultants	Prep:	METHOD
project#:	1039.008	Analysis:	EPA 300.0
Tield ID:	MW-1	Batch#:	72484
SS Lab ID:	158723-001	Sampled:	05/22/02
Matrix:	Water	Received:	05/22/02
Units:	mg/L	Analyzed:	05/23/02
iln Fac:	25.00		

me:

MS

Lab ID:

QC179110

Analyte	MSS Result	Spiked	Result	%REC	Limits
Jitrogen, Nitrate	5.470	25.00	31.02	102	80-120
Orthophosphate (as P)	<0.2000	125.0	124.7	100	73-147
Sulfate	57.84	250.0	308.3	100	72-125

me:

MSD

Lab ID:

QC179111

Analyte	Spiked	Result	%REC	Limits	RPI	Lim
Nitrogen, Nitrate	25.00	32.07	106	80-120	3	20
orthophosphate (as P)	125.0	127.1	102	73-147	2	30
Sulfate	250.0	305.3	99	72-125	1	20



Client Name: Curtis & Tompkins, Ltd.

Lab Sample # Client Sample ID

MW-6

MW-7

P0205535-01

P0205535-02

Contact: Steve Stanley Address: 2323 Fifth Avenue

Berkeley, CA 94710

Page 1 of 3

Order #: P0205535

Report Date: 06/10/02

Client Proj Name:

158761

Client Proj #:

158761

Sample Identification

Alebbie Halla

Page 2 of 3

Order #: P0205535

Lab Sample #:

Report Date:

06/10/02 158761

Client Proj Name:

Client Proj #:

158761

Client Name: Curtis & Tompkins, Ltd.

Contact: Steve Stanley Address: 2323 Fifth Avenue

Berkeley, CA 94710

Sample Description

Matrix

Sampled Date/Time

Received

P0205535-01

Water

23 May. 02

29 May, 02

MW-6	Water		23 May. 02		29 May	. 02
lnalyte(s)	Result	PQL	Units	Method #	Analyst	Analysis Date
RiskAnalysis						_
Water arbon dioxide	100	0.60	mg/L	AM20GAX	pd	6/6/02

Page 3 of 3

Order #: P02

P0205535 06/10/02

Report Date: Client Proj Name:

158761

Client Proj #:

158761

Client Name: Curtis & Tompkins, Ltd.

Contact: Steve Stanley

Address: 2323 Fifth Avenue

Berkeley, CA 94710

Sample Description

MW-7

<u>Matrix</u>

Sampled Date/Time

Lab Sample #:

Received

P0205535-02

Water

23 May. 02

29 May. 02

Analyte(s)	Result	Result PQL		Method #	Analyst Analysis Date		
RiskAnalysis				,	· · · · · · · · · · · · · · · · · · ·		
Water Carbon dioxide	68	0.60	mg/L	AM20GAX	pd 6/6/02		

Curtis & Tompkins, Ltd. Analytical Laboratories, Since 1878 2323 Fifth Street

Berkeley, CA 94710 (510) 486-0900

(510) 486-0532

Project Number: 158761

Subcontract Laboratory:

Microseeps, Inc.

220 William Pitt Way Pittsburgh, PA 15238

(412) 826-5245 ATTN: Becky Hans

Turnaround Time: WE

Report Level: II

Please send report to: Steve Stanley

Please report using Sample ID rather than C&T Lab #.

Sample ID	Sampled	Matrix	Taganan Ta	Analysis		C&T Lab # Comments
MW-6	05/23	Water		RSK-175	• 0	158761-001 Dissolved CO2
MW-7	05/23	Water		RSK-175	9 -	158761-002 Dissolved CO2

Notes: .	Relinquished By:	Received By:
	Bu Makanen	*tomanoo-
	Date/Time: 12002 1:3	O Date / Time: 10.51

APPENDIX D

Monitoring Well Survey, letter dated September 4, 2002

Virgil Chavez Land Surveying

312 Georgia Street, Suite 225 Vallejo, California 94590-5907 (707) 553-2476 • Fax (707) 553-8698 September 4, 2002 Project No.: 2043-03

Emily Silverman Subsurface Consultants, Inc. 1000 Broadway, Suite 200 Oakland, CA 94607

Subject:

Monitoring Well Survey

327 34th Street Oakland, CA



This is to confirm that we have proceeded at your request to survey the ground water monitoring wells located at the above referenced location. The survey was completed on August 8, 2002. The benchmark for this survey was a cut "X" in the top of curb near the southwest return of the northwest corner of 34th and Broadway. The latitude, longitude and coordinates are for top of casings and are based on the California State Coordinate System, Zone III (NAD83).

Benchmark Elevation = 60.40 feet (NGVD 29).

Latitude Longitude		orthing	Easting	Elev. Do	esc.
				65.04 R	IM MW-1
37.8218055 -122	2.2611707	2126486.31	6053001.38	64.69 T	OC MW-1
				66.25 R	IM MW-2
37.8218325 -122	2.2613612	2126497.16	6052946.53	65.95 T	OC MW-2
					IM MW-3
37.8217655 -122	2.2613226	2126472.57	6052957,24	65.99 T	oc MW-3
				63.74 R	IM MW-4
37.8216761 -122	2.2611751	2126439.22	6052999.22	63.35 T	OC MW-4
			•	66.21 R	IM MW-5
37.8215003 -122	2.2614902	2126376.91	6052907.01	65.59 T	OC MW-5
	•			59.93 R	IM MW-6
37.8213998 -122	2.2608926	2126337.09	6053078.90	-	OC MW-6
•				59.81 R	IM MW-7
37.8215368 -122	2.2607147	2126385.97	6053131.20	59.47 T	OC MW-7

Mo. 6323 Esp. 12-51-0 Z

Sincerely,

Virgil D. Chavez, PLS 6323